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Teamwork Perceptions of Nurses and Nursing Assistants in a Community Hospital

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This is to certify that the doctoral study by

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2017

Abstract

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Project Submitted in Partial Fulfillment

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Abstract

Teamwork in healthcare is recognized as a significant factor in achieving patient safety and impacting patient outcomes. Despite the general focus on teamwork in healthcare, there has been little research on teamwork among nurses and nursing assistants working on patient care units. The purpose of this doctoral project was to identify, compare, and analyze perceptions of teamwork in a group of nurses and nursing assistants in a community hospital setting where the TeamSTEPPS program has been implemented. The framework of this project was the concept of shared mental model and Imogene King's conceptual system and middle-range theory of goal attainment. Teamwork perceptions were measured using the TeamSTEPPS Teamwork Perceptions Questionnaire (T-TPQ), which is composed of five constructs: (a) team structure, (b) leadership, (c) situation monitoring, (d) mutual support, and (e) communication. Sixty-three nurses and 42 nursing assistants participated in the study. There was a significant difference between nursing assistants and staff nurses with respect to the Total T-TPQ mean score (4.03 and 4.26, respectively; $p < 0.03$), leadership (4.11 and 4.44, respectively; $p < 0.01$), and communication (4.13 and 4.35, respectively; $p < 0.04$). Nurses had a higher level of agreement than nursing assistants for Total T-TPQ, leadership, and communication. The results underscore the need to close the gap between nursing assistants' and nurses' perceptions of teamwork. Hospital and nursing leaders should make significant efforts to improve teamwork to build cohesive and highly functional nursing teams that can improve patient safety and thus create lasting social change.

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Dedication

This project is dedicated to my mother, Halina Janicka, who always believed in me, motivated me, and inspired me to do more—but most importantly, to *be* more. I would not be where I am without my husband, Peter, and my children, Paul, Adam and Emily. I dedicate my journey to DNP to them and hope that my perseverance can serve as an inspiration to them to always work to their fullest potential and continue growing and learning; mostly, I hope I can inspire them to continue doing what they love.

Acknowledgments

I would like to thank Dr. Andrea Jennings-Sanders and Dr. Myrta Rabinowitz for your support, knowledge, and wisdom that have guided me throughout this process. My need for a professional mentor and colleague was met by your presence in my life and your commitment to nursing science. I could not have completed this project without your guidance and expertise. I also extend thanks to Dr. Lily Thomas, my Associate Executive Director of Patient Care Services, Marianna Vazquez, and my friends and colleagues for your support and encouragement. Thank you all.

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Section 1: Nature of the Project

Introduction

The concept of teamwork in healthcare is not relatively new; nearly 20 years ago, the Institute of Medicine (IOM; 1999) stated that teamwork is needed in healthcare to reduce patient care errors. Since the release of the IOM report, there have been numerous studies conducted addressing the concept of multidisciplinary teamwork in healthcare; however, few researchers have focused on the teamwork among nursing staff on a patient care unit.

Healthcare realities such as demand for high quality and decreased reimbursement pose numerous challenges as the agenda is set by the IOM to meet and exceed the expectations of stakeholders, from governmental entities and professional organizations to healthcare establishments and educated patients expecting the best possible care delivery. Healthcare is additionally affected by changes in reimbursement structure, current and projected shortage of skilled healthcare workforce, escalation in skill mix acuity, and public demands for greater transparency in healthcare and outcomes that are measurable and comparable (Nash, Reifsnyder, Fabius, & Pracilio, 2011). At the core of changes made to meet these demands and position the healthcare system to improve coordination of care and team effectiveness is the notion that the right team environment is essential to safe care delivery (Anthony & Vidal, 2010).

Nurses are the healthcare providers who carry responsibility for patient care, and in this new healthcare structure they are held accountable for patient outcomes such as decreased pressure ulcers, decreased falls, decreased catheter associated urinary tract

infections, and greater patient satisfaction (Anthony & Vidal, 2010). Despite shrinking financial resources from reimbursements, there is increased demand for nurses and nursing assistants to deliver outstanding care. More than 17% of the nation's gross domestic product is devoted to healthcare, according to scores compiled by the Organization for Economic Cooperation and Development, which assesses national healthcare system. Yet, compared to other developed countries in the world, the United States scores relatively low on five essential dimensions of healthcare performance: quality, access, efficiency, equity, and healthy lives (Nash et al., 2011).

As a group intended to increase the structure and efficiency of the nursing team, nursing assistants share the responsibility for improving patient outcomes. However, nursing assistants have not received their due recognition as crucial members of healthcare teams (Gravlin & Bittner, 2010). A continual challenge in the nursing profession is that of connecting these and other critical healthcare providers to form unified, involved, dynamic teams and a stimulating interdisciplinary environment to contribute to the health and education of patients and families (Kalisch & Lee, 2013).

Problem Statement

Studying the perceptions of nurses and nursing assistants regarding teamwork creates an opportunity to assess the level of teamwork and develop a plan for improvement based on findings. According to the Hospital Consumer Assessment of Healthcare Providers and Systems' (HCAHPS, 2017) scoring of patient perceptions of care, nurses often hear what patients perceive while they are hospitalized. What these patients see and hear determines how they respond to the HCAHPS survey and ultimately

influences how they rate the care they received. Therefore, patients' perceptions of care are a reality that must be accounted for.

Kelly (2011, p. 193) posited that "effective teams do not just happen; they are thoughtfully and purposefully designed." Exploring the connection between patient' perceptions of care and nurses' and nursing assistants' perceptions of teamwork is a significant step toward learning what gaps in perception exist between the two groups. Identifying and comparing any differences in nurses' and nursing assistants' perceptions of teamwork can assist healthcare organizations in planning educational and team-building activities geared to making this group stronger and more effective.

A study on perceptions of teamwork can also serve as the foundation for further research into the experiences of nurses and nursing assistants in various clinical settings. Such research can be used to enhance the quality of work-life balance and the working environment of nurses and nursing assistants. Finally, the study can also serve as a reference for future research on perceptions of teamwork in other healthcare disciplines.

Evidence-based practice to improve patient care and healthcare outcomes has become very important in many healthcare organizations, with much of the focus on the healthcare team's design, scope, membership, and hierarchies because teams that share a common goal and direction achieve better results (Kelly, 2011). Exploring the characteristics of teams, especially from a clinical microsystem mental model that includes nurses and nursing assistants, is a relatively new approach that can add value to the creation of an intentional role and team design in the future. However, it is difficult to determine what is needed in a clinical microsystem without first identifying how the

members of the team perceive the level of their teamwork (Kelly, 2011). Most of the research on teamwork in nursing has focused on interventions to engage staff in teambuilding activities (Kalisch, 2007; Kalisch & Lee, 2010), delegation practices between nurses and nursing assistants (Anthony & Vidal, 2010; Bittner & Gravlin, 2009; Potter, Deshields, & Kuhrick, 2010), and nursing assistants feeling empowered in their role (Howe, 2014). Few studies have specifically described the perceptions of teamwork among nurses and nursing assistants in a hospital setting after the formal implementation of TeamSTEPPS with teamwork tools and strategies. Such an investigation is important to plan the future direction of the nursing team.

Understanding the perceptions of nurses and nursing assistants, two staff groups that work closely together providing patient care, can benefit all those involved in the work environment and the patient experience. To understand the perceptions of teamwork among nurses and nursing assistants, I conducted a quantitative descriptive comparative study.

Purpose

In many healthcare organizations, nursing care services are delivered by nurses and unlicensed assistive personnel whose titles and job descriptions can vary (Anthony & Vidal, 2010). Effective teamwork is essential for this nursing dyad to deliver efficient, cost effective, quality care.

It is necessary to learn more about the specifics of the nature of the relationship between nurses and nursing assistants because this relationship affects the quality of care delivered to patients (Kalisch & Lee, 2013). Nurses are expected to organize health care

team workflows, be the point of contact between team members, oversee assistive personnel, and serve as a liaison between healthcare team members (Kalisch & Lee, 2013). However, the complexities of care delivery, increased acuity of patients, and declining reimbursements have impacted staffing patterns on patient care units and changed the landscape of nursing practice such that no single nurse is able to meet all the complex needs of patients (Hall & Weaver, 2001). Thus, the way nurses partner with nursing assistants has implications for care delivery and patient outcomes (Potter & Grant, 2004).

The purpose of this study was to explore the perceptions of teamwork held by nurses and nursing assistants in a community hospital setting where the Team Strategies and Tools to Enhance Performance and Patient Safety (TeamSTEPPS) program has been implemented. TeamSTEPPS is an evidence-based toolkit developed by the Agency for Healthcare Research and Quality (AHRQ) and the Department of Defense in response to the IOM (1999) report to develop strategies related to team performance in healthcare. My goal in this study was to address the gap that is evident in literature specific to nursing team members' perceptions of teamwork. The community hospital where the study took place has implemented TeamSTEPPS facility-wide, yet has no strategy in place to measure the effectiveness of the implemented changes.

I designed this study to identify, examine, and compare the individual perceptions of teamwork within the nursing dyad of nurses and nursing assistants based on five components of teamwork: team structure, leadership, communication, mutual support, and situational monitoring. I measured teamwork perceptions using the TeamSTEPPS

Teamwork Perceptions Questionnaire (T-TPQ), a validated self-report instrument that measures individual perceptions of the team skills and behaviors within a unit or department and captures the unique dimension of an organization's team climate (Battles, 2010).

Following examination of the data returned by the TeamSTEPPS T-TPQ, the research objectives of the study were to:

1. Identify the perception of teamwork of nurses;
2. Identify the perception of teamwork of nursing assistants; and
3. Compare the difference in the overall mean perception scores between nurses and nursing assistants.

The primary research questions were:

RQ1. What are nurses' perceptions of teamwork?

RQ2. What are nursing assistants' perceptions of teamwork?

RQ3. Is there a difference between overall mean perception scores on the T-TPQ for nurses and nursing assistants?

Based on the literature review, I expected there would be differences in perceptions of teamwork between nurses and nursing assistants related to the level of teamwork.

Nature of the Doctoral Project

The purpose of this quantitative, descriptive comparative project was to identify and explore differences in perceptions of teamwork in two care provider groups at a community hospital where TeamSTEPPS was implemented in 2007. The design of this project involved administration of a T-TPQ to explore differences in teamwork

perceptions across five constructs: leadership, mutual support, team structure, situation monitoring, and communication.

Significance to Nursing Practice

There is evidence that good teamwork among healthcare providers produces measurably better patient outcomes, while a poor level of teamwork produces measurably poorer outcomes (Bellury, Hodges, Camp, & Addudell, 2016). The relationship between nurses and nursing assistants in patient care units has been described in the literature as an "uneasy alliance" (Bellury et al., 2016, p. 337); thus, improving the level of teamwork on nursing units and among nursing staff may be the key to improving outcomes for patients on these units. A study exploring perceptions of teamwork in the nursing unit is valuable because it may provide direction for nursing leaders seeking to strengthen teamwork behaviors and address any related problem areas.

In order to produce sustained social change related to perceptions of teamwork on patient care units, healthcare organizations can use this study as the basis of future research on teamwork perceptions specific to other members of the healthcare team. The results of this and future studies can be used to create teamwork training programs and strategies useful for healthcare and other service-related disciplines.

Summary

Effective teamwork is essential for healthcare providers to deliver efficient, cost effective, quality patient care. The purpose of this study was to explore the perceptions of teamwork held by nurses and nursing assistants in a community hospital setting where the TeamSTEPPS program has been implemented. Identifying, examining, and

comparing the individual perceptions of teamwork based on the five components of teamwork (team structure, leadership, communication, mutual support, and situational monitoring) has implications for care delivery and patient outcomes.

Section 2: Background and Context

Introduction

The purpose of this study was to identify, examine, and compare nurses' and nurse assistants' individual perceptions of teamwork based on five components of teamwork (team structure, leadership, communication, mutual support, and situational monitoring) as measured by the T-TPQ.

Concepts, Models, and Theories

McEwen and Wills (2011) pointed out the importance of nurses knowing why something occurs in order to provide interventions to assist patients and help address or prevent adverse events. This knowledge is often obtained from theories, which McEwen and Wills argued give "… the basis for understanding the reality of nursing; it enables the nurse to understand why an event happens" (p. 375). Many nursing theories are borrowed or derived from theories developed in other disciplines. Using theories from biologic sciences, behavioral sciences, sociological sciences, as well as learning, organizational, and management theories allows nurses to analyze many complex situations, as they may relate to several disciplines but defy placement in only one.

Shared Mental Models and Goal Attainment

The concept of shared mental models has been used to help explain the functioning in teams: "in order to adapt effectively, team members must predict what their teammates are going to do and what they are going to need in order to do it. Hence, the function of shared mental model is to allow team members to draw on their own self-structured knowledge as a basis for selecting actions that are consistent and coordinated

with those of their teammates" (Mathieu, Heffner, Goodwin, Salas, & Cannon-Bowers, 2000, p. 274). According to Mathieu et al. (2000), shared mental models help explain how teams are able to cope with difficult and changing task conditions. The ability to adapt is an important skill in high-performance teams, and shared mental models may explain the mechanisms of adaptability—that is, how teams can quickly and efficiently adjust their tactics. This ability and the need to respond quickly to changing situations is especially applicable to nurses and nursing assistants; their combined efforts to provide patient care makes their dyad critical to patient outcomes and important to understand from the administrative and clinical leadership perspective.

In any organization, each employee brings a unique perspective, attitude, and set of behaviors that can enrich the workplace; however, employees' individual differences can also cause tension, friction, and conflict. Organizational leaders are thus challenged to find strategies to capitalize on the advantage of differing perspectives while maintaining effective interpersonal bonds to create high-performing employee teams (Kelly, 2011). This is especially important in the nurse-nursing assistant dyad, as these staff members are the closest to the patient and, as noted by Kalisch (2013), they significantly impact patient care quality. However, in order for the dyad to function in a collaborative and unidirectional way, nurses and nursing assistants must have a shared understanding despite any differences in perspective, opinion, or approach.

Research suggests teams that share a uniting mental model and draw from it when faced with quick decisions to make are better prepared than teams without a shared mental model to fall back on (Mathieu et al., 2000). Rouse, Cannon-Bowers, and Salas

(1992) found that a shared mental model can potentially enhance a team's performance in complex environments and may additionally contribute to a better understanding of coordination and communication performance. The shared mental model that unites the nurse-nursing assistant dyad can enhance its decision-making potential, values, and performance and lead to improved patient outcomes. Bittner and Gavlin (2009) reported there is missed nursing care (bathing, ambulating, turning, and positioning) on patient care units when nurses and nursing assistants do not share mental models about what care needs to be provided.

A shared mental model promotes communication, collaboration, and effective exchange of pertinent information (Mathieu et al., 2000). Kalisch (2009) found that when no shared mental model was evident between nurses and nursing assistants, there was conflict and frequent missed basic nursing care of patients. Kalisch et al. (2009) noted that problems were apparent when procedures were not followed by staff, causing shift reports to be incomplete or missing altogether between nurses and nursing assistants. One nursing assistant stated, "We are not given any report at the beginning of the shift so we really do not know anything about the patients" (Kalisch et al., 2009, p.303). The researchers further discovered a relationship between communication and a shared mental model in the way team members anticipated each other's needs without asking for assistance, thus reducing the workload for all (p. 303).

McComb and Simpson (2013) undertook an exhaustive concept analysis of shared mental models in healthcare. From a nursing theory development perspective, they explored how shared mental models can be empirically tested and applied to practice.

According to the researchers, mental models fit in the nursing theory development perspective because as they become shared by teams, they facilitate the integrative and interactive nature of nursing and safe patient care. Analogous with Imogene King's conceptual system and middle range theory of goal attainment as noted by McComb and Simpson (2013), the nurse-nursing assistant interactive process takes shape, creating similar connections for goal attainment. In the theory of goal attainment, the nurse and client set mutual goals for patient care by creating an interactive process for all actions based on their perceptions and judgements. As the nurse and client continue to interact, their mental models can become shared, creating better care delivery to the client. Similarly, when nurses and nursing assistants interact, they create mutual goals for patients and create a shared mental model of what patient care will look like. As the nurse and nursing assistant continue to interact, their mental models can become shared, enhancing their mutual goal of appropriate patient care delivery and creating similar perceptions of work—or shared perceptions of teamwork. As McComb and Simpson (2013, p. 1486) noted, "…understanding the concept of shared mental models and how they are attained may facilitate an expedited process of developing shared mental models, thereby having the potential to accelerate goal attainment."

As the above research suggests, shared mental models have impacted care delivery in a positive way (Kalisch, 2009). A shared mental model affects the nurse-nursing assistant working environment, and further exploration is needed in order to develop effective tools and strategies to help the dyad create a shared mental model in

their daily work with patients. This project contributes to the understanding of the perceptions of this important element of teamwork.

Definitions of Terms

The following terms are integral to this study:

Communication: The effective exchange of critical information among interdisciplinary teams, healthcare staff, and leadership (Polito, 2013).

Dyad: Two individuals or entities maintaining a sociologically significant relationship (Merriam-Webster Online). The nursing dyad, nurses and nursing assistants working on patient care units, is the subject of this study.

Environment: Includes the factors, objects, or conditions present within the surroundings of patient care delivery, such as visual and auditory stimulation, temperature, and objects or equipment (Frankel, Leonard, Simmonds, Haradan, & Vega, 2009).

Leadership: Ability to direct and coordinate team members, assess team performance, allocate tasks, plan/organize and maintain a positive team environment (AHRQ, 2014).

Mental model: Peter Senge (1990) defined *mental model* as the deep-rooted assumptions, generalizations, or pictures and images that affect how individuals comprehend and react to the world.

Mutual support: Providing feedback and coaching to improve performance or when a lapse is detected (AHRQ, 2014).

Organizational culture: A "complex mixture of different elements that influence the way things are done as well as the way things are understood, judged, and valued" (Kaufman & McCaughan, 2013, p. 52).

Situation monitoring: Tracking fellow team members' performance to ensure that the work is running as expected and that proper procedures are followed (AHRQ, 2014).

Team: A group of two or more members who have a mutual goal, who interact with each other in a dynamic way and who have a limited by assignment time frame of membership (Salas, Dickenson, Converse, & Tannenbaum, 1992).

Teamwork: Defined as "cooperative effort by the members of a group or team to achieve a common goal" (American Heritage Dictionary Online, 2017, para. 1). Teamwork can be explained as people cooperating, using their different skills and talents to achieve a goal (usually the objective of the organization) despite different ideologies or to offer positive criticism despite any individual personal clashes. A related concept is Senge's (1990) *team learning,* which develops a group's ability to see a larger picture than their individual perspectives allow.

Relevance to Nursing Practice

Teamwork among healthcare providers is crucial to achieve patient safety. The release of the 1999 IOM study, *To Err is Human,* prompted numerous studies within healthcare disciplines to evaluate levels of teamwork and explore how teamwork affects patient safety. Many healthcare facilities struggle to establish an organizational culture in which patient safety comes first and all care providers have an equal voice in protecting patients from harm. The nurse-nursing assistant dyad is the largest group of healthcare

providers, and thus the gap that exists in the literature related to their perceptions of teamwork is significant and should be explored further. The results obtained could be used to inform other studies, create organizational awareness about employee perceptions of levels of teamwork, and establish a future organizational direction for employee training and support.

The nursing implications for practice are significant because the nursing workforce is the largest in the industry and influences care delivery to a great extent (Grove, Burns, & Gray, 2013). Nurses are called upon to prevent harm to patients using evidence-based tools and promoting effective care delivery. Further, DNP-prepared nurses must act as leaders to advocate for changes in healthcare.

Local Background and Context

The implications related to exploring nurses' and nursing assistants' perceptions of teamwork include creating awareness of the benefits of knowing staff perceptions, providing evidence-based training programs, and promoting the use of perception surveys in healthcare to improve staff communication, collaboration, and patient safety.

IOM reports have addressed patient safety and workforce issues such as environmental safety, staffing, and organizational and workforce characteristics. Its 2004 report, *Keeping Patients Safe-Transforming Work Environment of Nurses,* identified that nurses have a central role in patient safety, as nursing personnel represent the largest component of the healthcare workforce. Licensed nurses and unlicensed nursing assistants represent approximately 54% of all U.S. healthcare workers (Bureau of Labor Statistics, 2013). Elements of the nurse role in healthcare include surveillance and rescue

and coordination and integration of care services for multiple providers. The IOM (2004) described nurses as being at the "sharp end" of the care delivery spectrum based on their close link to patients (para. 8). This watchfulness function often pushes nurses into a role that has been described as the "front line" of patient defense (The Joint Commission, 2001). Roberts (1990) and Roberts and Bea (2001) reported that organizations with a record of high reliability demonstrate they value front line staff attentiveness to safety because the workers detect dangers before they become errors.

Role of the DNP Student

As the primary investigator, I was responsible for obtaining all the necessary approvals to conduct this study. My role involved obtaining approval from the Executive Director of the community hospital as well as from the Associate Executive Director of Patient Care Services. I also ensured all documentation was submitted and approval obtained from the Walden University Institutional Review Board (IRB) as well as the site IRB. I obtained the Collaborative Institutional Training Initiative (CITI) to be able to conduct research with human subjects and maintained communication with the site administrators and nursing research committee, which oversees any research performed in the Department of Nursing.

Summary

Exploring nurses' and nursing assistants' perceptions of teamwork can help create organizational awareness of the role of teamwork in quality patient care and guide educational team building activities and training designed to improve staff communication and collaboration and patient safety. The literature review suggests there

is a gap in assessment of level of teamwork in nurses and nursing assistants. Utilizing the shared mental model concept can help unite the nurse and nursing assistant dyad and thus promote communication, collaboration and effective exchange of information. Discussion of this project continues in Section 3 with a deeper review of the literature and description of the research and data collection process.

Section 3: Collection and Analysis of Evidence

Introduction

The purpose of this study was to identify, examine, and compare the individual perceptions of teamwork within the nursing dyad using the five components of teamwork: team structure, leadership, communication, mutual support, and situational monitoring as measured by the T-TPQ. Improving the level of teamwork in the nursing care unit can have a positive impact on patient outcomes (Kalisch, 2012). Results of this research may improve teamwork perceptions of nurses and nursing assistants and may be extended to other practitioners such as physical therapists, physicians, occupational therapists, and others who are vital members of the healthcare team.

Practice-Focused Questions

The literature supporting this study includes a focus on the principles of teamwork in non-healthcare industries and teamwork within healthcare with an emphasis on specific aspects of nurse and nursing assistant views of teamwork and implications on patient outcomes. The perception of teamwork among nurses and nursing assistants is critical to the question of how healthcare provider teamwork affects patient outcomes overall. Learning about perceptions of teamwork among nurses and nursing assistants, who together comprise the largest group in the healthcare workforce, may spark an evaluation of teamwork across a single healthcare organization and on a system level. For the community hospital involved in this study, comparing how one small group of nurses and nursing assistants feel about teamwork across the five domains has provided a clear

indication of what educational programs or seminars are needed for improved teamwork behaviors and improved patient outcomes.

This project addressed the following questions:

RQ1. What are nurses' perceptions of teamwork?

RQ2. What are nursing assistants' perceptions of teamwork?

RQ3. Is there a difference between overall mean perception scores on the T-TPQ for nurses and nursing assistants?

Sources of Evidence

The purpose of this study was to explore the perceptions of teamwork held by nurses and nursing assistants in a community hospital setting where the Team Strategies and Tools to Enhance Performance and Patient Safety (TeamSTEPPS) program has been implemented. TeamSTEPPS is an evidence-based toolkit developed by the Agency for Healthcare Research and Quality (AHRQ) and the Department of Defense in response to the IOM (1999) report to develop strategies related to team performance in healthcare. My goal in this study was to address the gap that is evident in literature specific to nursing team members' perceptions of teamwork. The community hospital where the study took place has implemented TeamSTEPPS facility-wide, yet has no strategy in place to measure the effectiveness of the implemented changes.

I designed this study to identify, examine, and compare the individual perceptions of teamwork within the nursing dyad of nurses and nursing assistants based on five components of teamwork: team structure, leadership, communication, mutual support, and situational monitoring. I measured teamwork perceptions using the TeamSTEPPS

Teamwork Perceptions Questionnaire (T-TPQ), a validated self-report instrument that measures individual perceptions of the team skills and behaviors within a unit or department and captures the unique dimension of an organization's team climate (Castner, J. 2012). The questionnaire is a continuous interval scale containing 35 items rated on a 5-point Likert scale ranging from 1 ("strongly disagree") to 5 ("strongly agree"). Teamwork perceptions were measured separately for staff nurses and nursing assistants.

Published Outcomes and Research

Within the last ten 10 years, the number of registered nurses working closely with nursing assistants has risen due to several factors affecting healthcare delivery in the United States: decreasing reimbursement, changing patient acuity, transparency in patient outcomes, and a demand on the part of the public for a better healthcare experience (Nash et al., 2011). Research on teamwork across many industries is widespread; however, within healthcare and nursing in particular, this research is much more limited.

I conducted a literature review to generate the highest level of existing evidence related to perceptions of teamwork within groups of nursing staff—particularly nurses and nursing assistants—and individual perceptions of collective teamwork while nursing staff perform patient care on patient care units. I conducted an exhaustive search of the Cumulative Index of Nursing and Allied Health Literature (CINHAL), PUBMED, and MEDLINE databases through the Walden University Library, selecting peer-reviewed, primary research publications published between 1999 and Spring 2017. The keywords searched were *patient safety, TeamSTEPPS, teamwork, communication, collaboration,*

perceptions, nurses, and *nursing assistants*. I also explored websites related to patient safety and TeamSTEPPS, such as AHRQ, Joint Commission, DoD, IOM, National Patient Safety Foundation (NPSF), Centers for Medicare and Medicaid Services (CMS), and National Quality Forum (NQF). In the case of seminal works or industry golden standards, I also included older sources to illustrate the historical perspective of the information.

General literature review. To many, the concept of good teamwork relates to success and good results, while the idea of no teamwork suggests a lack of success and prominent mistakes. However, what is considered *good* or *bad* teamwork, and how can these be measured?

The primary industry that has contributed to measuring this concept over the last 20 years, in response to criticism and public and governmental demand to improve, is the aviation industry (Salas, Wilson, Burke, & Wightman, 2006). Recognizing that teamwork makes a positive impact on outcomes, the industry implemented crew resource management (CRM) to respond to the demand for public and military aviation safety. CRM is a team training strategy focused on improving crew coordination and performance; it teaches the crew to use all available resources, including people, equipment, and information, to "improve teamwork in the cockpit by utilizing well tested training tools (performance measures, exercises, feedback), training methods (simulators, lectures, videos) and targeted at specific content (teamwork knowledge, skills and attitude)" (Salas et al., 2006, p. 392). Following the success of the CRM tool and

strategies in aviation, other industries such as the railroad and the healthcare industries, also turned to CRM methodologies.

Taylor (2000) reported on two studies that relied on Kirkpatrick and Kirkpatrick's (2014) training model to evaluate CRM methods. Kirkpatrick's model addresses four aspects of training (reactions, learning, behavior, and organizational impact) that must permeate an organization on many levels and must be supported on an ongoing basis by leadership in order to be sustainable. In the studies Taylor evaluated, trainees liked the training (reactions) and held positive attitudes toward the CRM methods (learning), and the training helped convey learned behaviors to the work environment (behavior) and reduce ground damage incidents (organizational impact). However, the trainees' positive attitude deteriorated without leadership support after completion of training, and behaviors reverted to pre-training levels (Taylor, 2000).

CRM was utilized in the healthcare industry largely as a result of the IOM (1999) report as well as then-President Bill Clinton's establishment of a Quality Interagency Coordination Task Force to develop and implement a strategy to reduce and decrease the severity of medical errors and improve medical teams' performance (AHRQ Archive, 2016). The next step was the Joint Commission's National Patient Safety Goal Requirements, which focused on improving communication among healthcare team members (Joint Commission, 2015). In 2005, the Patient Safety and Quality Improvement Act required the Department of Health and Human Services to establish reporting of medical errors through several voluntary and confidential mechanisms. The TeamSTEPPS curriculum was developed at this time and extensively tested, after which

the AHRQ launched the TeamSTEPPS program via the National Implementation Program. The TeamSTEPPS program reflects an acknowledgment that in high-risk, complex environments such as healthcare, employees require support through tools and processes that help them minimize errors and deliver high quality patient care while also facilitating positive organizational culture and fostering organizational learning (Kagan & Barnoy, 2013; Stavrianopoulos, 2012).

Specific literature review. Teamwork is an important aspect of nursing practice and research has shown that group teamwork leads to higher staff job satisfaction, increased patient safety, improved quality of care and greater patient satisfaction (Kalisch, 2007). The literature is limited in terms of studies with a strong level of evidence to support specific interventions that may affect teamwork, staff engagement, and patient care. This study attempts to close the gap that exists regarding nursing staff perceptions of their levels of teamwork in organizations as the first step to exploring workable solutions to improve teamwork perception and, through it, quality of nursing care.

As the realities of the healthcare environment change, so do the needs of the patients entrusted to the care of those closest to the bedside who impact the quality of care to a great degree: nurses and nursing assistants (Bittner & Gavlin, 2009). Positive interactions between nurses and nursing assistants can make a difference as they treat patients who require complex care in emergent and critical situations as well as in a more routine, daily care. Several investigators have reported a link between nursing staff satisfaction and teamwork (Amos, Hu, & Herrick, 2005; Anthony & Vidal, 2010; Kalisch

& Lee, 2010). Amos et al. (2005) in particular found that team-building activities resulted in a higher job satisfaction, better communication strategies, and stronger interpersonal connections for staff. Kalisch (2009) pointed out particular elements of teamwork in the nurse-nursing assistant dyad using Salas's framework, linking relationship to missed nursing care, which affected quality of patient care. Kalisch and Lee (2010) further specified that problems with teamwork in nursing lead to poor quality of nursing care and missed nursing care.

Organizational culture. The concept of organizational culture has roots in many disciplines, including management, anthropology, and sociology. How an organization supports team members and how that support is perceived by team members plays an important role in staff engagement, collaboration, and commitment to the organization (Bamford-Wade & Moss, 2010). Additionally, Bamford-Wade and Moss (2010) posited that organizational culture affects how staff assumes responsibility for the work the organization delivers and how staff shares in organizational successes and failures. Improvements in practice are neither sustainable nor measurable without concurrent changes on an organizational level where a supportive working environment coupled with transformational leadership exists (Warrick, 2011). Warrick asserted, "Even one transformational leader at the top can potentially increase the success of an organization" (2011, p. 11) and change the organizational culture. Recognition of the power of organizational culture and its relationship to staff performance led the community hospital in this study to implement the TeamSTEPPS program in an effort to affect organizational culture, improve performance, and promote patient safety.

Nurses and nursing assistants working closely with patients are in the best position to positively affect patient outcomes and contribute to improved collaboration and communication with patients and each other as they develop relationships within nursing units. Stavrianopoulos (2012) posited that leadership commitment and support, positive interactions and communication, and trust and transparency have a major impact on overall organizational culture. Brazil, Wakefield, Cloutier, Tennen, and Hall (2010) demonstrated that organizational culture is associated with job satisfaction and perceived clinical effectiveness. Manser (2009) reported perceptions of teamwork and leadership were associated with outcomes such as job satisfaction and organizational commitment. Further research indicated that attitudes toward teamwork in healthcare providers attribute a high degree of importance to teamwork aspects such as communication and coordination (Flin, Fletcher, McGeorge, Sutherland, & Patey, 2003; Sexton, Thomas, & Helmreich, 2000; Ummenhoffer, Amsler, Sutter, Martina, & Scheidegger, 2001).

One systematic review by Conry et al. (2012) suggested interventions aimed to change technical aspects of patient care should be in the purview of physicians while the interpersonal aspects of care and quality care interventions should be spearheaded by nursing staff. This division was appropriate to the researchers because nurses and nursing assistants are the healthcare providers that most significantly impact patient care delivery and patient perception. For this reason, nurses and nursing assistants should be further studied to ascertain behaviors and specific impact level.

Nurses' and nursing assistants' interpersonal relationships. Most studies conducted on teamwork in healthcare have focused on multidisciplinary collaboration

among several disciplines—nursing staff, physicians, physical therapists, and registered dieticians are just a few—and their overall impact on patient care outcomes. Although these interdisciplinary interactions and collaborations are of great importance, only a small number of studies have explored teamwork among the nursing staff on patient care units. My examination of the literature revealed a gap that exists research on teamwork among nursing staff specific to essential elements such as closed loop communication, leadership, team orientation, trust, and shared mental models (Kalisch, 2009).

Relationships between healthcare providers have a significant role in patient care delivery by affecting collaboration, coordination, delegation, and communication (Reina, Reina, & Rushton, 2007). Historically, nurses and nursing assistants have struggled in their relationships with one another (Potter & Grant, 2004). In one study, nurses had difficulty communicating and relating to nursing assistants, reporting differences in educational level, training, and prevalent mistrust created a gap that interfered with effective teamwork and potentially affected patient care (DiMeglio et al., 2005). Potter et al. (2010) further reported that delegation practices are affected by ineffective interpersonal relationships between nurses and nursing assistants and affect the overall level of teamwork in the group.

The foundation of good and effective delegation is trust (Reina et al., 2007), which in turn affects attitudes, behaviors, and the exchange of information necessary to establish a shared mental model in delivering patient care (Quallich, 2005). Trust is tested under stressful conditions and situations and as stress is magnified, team members' reliance on each other increases. Krieger (2005) reported that when nurses and nursing

assistants understand the information they both have related to patient care and patient needs (a shared mental model), the plan for patient care and execution of the plan has increased potential for success, and thus there is increased potential for improved outcomes. Kang, Kim, and Chang (2008) added that sharing information that is inferred from patients rather than documented in the medical record adds to patient care in a meaningful way, but this information exchange occurs only when there mutual trust and effective relationships exist to create a shared mental model for care delivery.

It is clear in the literature that building effective relationships between nurses and nursing assistants is essential to teamwork and can improve patient outcomes. Therefore, a study exploring the perceptions that shape nurses' and nursing assistants' attitudes and views can add to the body of knowledge in nursing. Furthermore, learning about these perceptions and identifying differences between groups can lead to determining the need for and type of team building activities across the healthcare organization.

Participants

The participants in this study were drawn from a population of registered nurses and nursing assistants working in any clinical area at the site, a community hospital located in the northeastern United States that is part of large healthcare system. The hospital primarily serves an affluent suburban population of adults aged 65 years and older. Of the total 340 registered nurses and 107 nursing assistants employed in the hospital, 63 nurses and 43 nursing assistants participated in the study, which corresponds to a 24% participation rate. Participants were selected through convenience sampling, which is the most inexpensive and accessible way to obtain a sample size and can enable

the researcher to acquire information in unexplored areas (Grove et al., 2013). Participation was completely voluntary and IRB approval was obtained prior to collecting any participant data.

Procedures

An informational letter was posted in the nursing office and nursing units across the hospital. The letter provided information about the study and asked those who were interested in participating to fill out the survey. I briefly presented to the nursing leadership of the community hospital to explain the purpose and procedures of the study. Envelopes with a blank survey were made available in each unit for those who were interested in participating. Participants were asked to take an envelope, complete the survey inside, and then return the survey in a sealed envelope to a locked box reserved for collecting surveys. Participants were informed they could complete the survey during their work hours in any area of their choosing or on their own time at home, and they could return the survey at any time during the duration of the study. I collected the surveys at the end of the survey period, which was the end of April 2017. There was no monetary compensation offered to participate in the study. Each nursing unit received a box of candy after the survey period was completed as thanks for participation.

Protections

Approvals to conduct this project were obtained from Walden University IRB and the site IRB (IRB # 17-0167). Participants received an informational letter explaining the purpose of the study and informing them that filling out the survey and returning it to the locked box constituted consent to participate in the study. All surveys were anonymous

and no names or identifying information were obtained in the process of the study. Additionally, I completed the required human research protection training through the Collaborative Institutional Training Initiative (CITI).

Analysis and Synthesis

I analyzed the collected data using descriptive statistics to obtain a mean and standard deviation of all constructs for each group and to identify which construct was rated highest and lowest for each group. I also analyzed the data to identify any statistically significant differences in teamwork perception between nurses and nursing assistants. Descriptive statistics were calculated separately for each of the two groups (staff nurses and nursing assistants). Continuous measures were presented as mean ± standard deviation and categorical variables were presented as frequencies and percentages. The chi-square test, or Fisher's exact test, was used to compare the two groups on the following categorical measures: gender, categorized age, years of experience in the role, highest education, shift worked, employment status, and unit type.

Teamwork perceptions were measured using the Teamwork Perceptions Questionnaire (T-TPQ) for staff nurses and nursing assistants. Each question on the T-TPQ is rated on a 5-point Likert scale ranging from 1 ("strongly disagree") to 5 ("strongly agree"). The T-TPQ measures five constructs of teamwork: team structure, leadership, situation monitoring, mutual support, and communication. The two groups were compared on these measures, and the normality assumption was assessed using the Shapiro-Wilk test. Since the data were normally distributed, a two sample t-test was used to compare nurses and nursing assistants on the overall T-TPQ, separately for each of the

5 constructs, and for the hours per week participants worked at the hospital. A result was considered statistically significant at the $p<0.05$ level of significance. All analyses were performed using SAS version 9 (Cohen, J. (1988).

Summary

Organizational leaders were engaged and involved and now that the results of this study are finalized the leaders are working to determine how to make further decisions about aspects of the study to focus on as the next step. This pilot study is being considered to be used to inform subsequent studies related to teamwork and staff perceptions. Senior leadership of the organization is evaluating the results and as there is more understanding about perceptions of the nurses and nursing assistants and how teamwork is seen through their lenses, subsequent studies are being considered especially in light of preparing for Magnet certification. Subsequent studies can focus specifically on what these two groups identified as relevant to their practice, which is communication and within leadership construct inclusion of nursing assistants in post event unit discussions as well as opportunities for leadership to ensure that nursing assistant are aware of any situation or changes that may affect patient care.

Section 4: Findings and Recommendations

Introduction

The purpose of this study was to identify, examine, and compare individual perceptions of teamwork within the nursing dyad of nurse and nursing assistant based on five constructs of teamwork: team structure, leadership, communication, mutual support and situational monitoring. Teamwork perceptions were measured using the TeamSTEPPS T-TPQ, a validated self-report tool that measures an individual's perception of collective teamwork (group level skills and behaviors) within a unit or department and captures the unique dimension of organization's team climate (Battles, 2010).

Data from the T-TPQ were used to accomplish the following research objectives for the study:

1. Identify the perception of teamwork of nurses;
2. Identify the perception of teamwork of nursing assistants; and
3. Compare the difference in total perception scores between nurses and nursing assistants.

Findings and Implications

One hundred and six staff members—63 nurses and 43 nursing assistants—participated in the study by completing and returning the surveys. Most nurses and nursing assistants were female (90.7% and 90.48% respectively). More nurses (n = 41; 65.0%) had a bachelor's degree than nursing assistants (n = 1; 2.44%). Of the participant nurses, 24 (57%) had 0-10 years of experience in the field, as opposed to 25 nursing

assistants (39.7%). More nurses (*n* = 25; 39.7%) than nursing assistants (*n* = 3; 7.1%) had more than 21 years of experience in the field. There was no statistically significant difference in age between the two groups. The shift varied based on nursing assistants predominantly working 8-hour shifts and nurses working 12-hour shifts. There were statistically significant differences in highest degree earned and that variable is noted but bears no significance in the study. The clinical areas of practice for nurses and nursing assistants were reported as follows: critical care areas, including telemetry and the emergency department (29 nurses, or 47.9%, and 20 nursing assistants, or 48.8%) general medical-surgical units (23 nurses, or 37.7%, and 19 nursing assistants, or 46.3%), and peri-operative areas, including units such as endoscopy, pre-surgical testing and operating room, and a post anesthesia care unit (9 nurses, or 14.7%, and 2 nursing assistants, or 4.8%).

A complete presentation of the characteristics of the sample follows in Table 1.

Table 1

A Sample Personal Characteristics of Participants

Variable	Nursing Assistants *n*	%	Nurses *n*	%	*p*-value
Age					0.07
19-30	11	26.19%	9	14.29%	
31-45	14	33.33%	17	26.98%	
46-60	16	28.10%	27	42.86%	
60+	1	2.38%	10	15.87%	
Years of Experience in the Role					0.00
0-10	24	57.14%	25	39.68%	
11-20	15	35.71%	13	20.63%	
21+	3	7.14%	25	39.68%	
Gender					1.00
Male	4	9.30%	6	9.52%	
Female	39	90.70%	57	90.48%	
Highest Degree Earned					<.00
Associate	15	36.59%	18	28.57%	
Baccalaureate	1	2.44%	41	65.08%	
High School	24	58.54%	0	0	
Master's	1	2.44%	4	6.35%	
What shift do you Usually work					<.00
Day (7a-3p)	21	51.22%	18	30.00%	
Day (7a-7p)	0	0	29	48.33%	
Evening (3p-11p)	13	31.71%	2	3.33%	
Night (11p-7a)	7	17.07&	1	1.67%	
Night (7p-7a)	0	0	10	16.67%	
What is Your Unit Type					0.30
Critical Care/Telemetry	20	48.78%	29	47.54%	
Medical/Surgical	19	46.34%	23	37.70%	
Peri-Op/OR/Endo/PST	2	4.88%	9	14.75%	

*p < 0.05

The T-TPQ subscale scores were calculated by averaging questions belonging to each domain. Possible scores ranged from 1.0 to 5.0. The higher the score, the more

agreement and the lower the score, the less agreement from the respondents on teamwork perceptions. Table 2 shows the mean score on a subscale level for all questions reported by nurses and nursing assistants as well as total mean score for entire T-TPQ.

Table 2

Level of Teamwork of Nurses (N=63) and Nursing Assistants (N=43)

	Nurses		Nursing Assistants	
Subscale/Items	Mean	SD	Mean	SD
Team Function	**4.26**	**0.56**	**4.05**	**0.70**
The skill of staff overlap sufficiently so that work can be shared when necessary	4.17	0.73	3.93	0.91
Staff are held accountable for their actions	4.08	0.96	4.07	0.83
Staff within my unit share information that enables timely decision making by the direct patient care team	4.29	0.61	3.88	0.91
My unit makes efficient t use of resources (e.g. staff, supplies, equipment, information)	4.21	0.79	4.05	0.84
Staff understand their roles and responsibilities	4.33	0.62	4.09	1.04
My unit has clearly articulated goals	4.40	0.64	4.26	0.73
My unit operates at a high level of efficiency	4.35	0.65	4.07	1.01
Leadership	**4.44**	**0.54**	**4.11**	**0.83**
My supervisor/manager considers staff input when making decisions about patient care	4.37	0.70	4.05	0.97
My supervisor /manager provides opportunities to discuss the unit's performance after an event	4.54	0.53	4.16	0.90
My supervisor/manager takes time to meet with staff to develop a plan for patient care	4.43	0.75	5.05	0.92
My supervisor/manager ensures that adequate resources (e.g. staff, supplies, equipment, information) are available	4.40	0.64	4.19	0.93
My supervisor/manager resolves conflict successfully	4.29	0.83	3.95	1.13
My supervisor/manager models appropriate team behavior	4.49	0.54	4.14	1.04
My supervisor/manager ensures that staff are aware of any situations or changes that may affect patient care	4.54	0.50	4.23	0.78
Situation Monitoring	**4.07**	**0.58**	**3.92**	**0.71**
Staff effectively anticipate each other's needs	3.92	0.81	3.84	0.90
Staff monitor each other's performance	3.79	0.79	3.86	0.89
Staff exchange relevant information as it becomes available	4.19	0.62	4.02	0.77

Continued on next page

Table 2 (continued)

Subscale/Items	Nurses		Nursing Assistants	
	Mean	SD	Mean	SD
Staff continuously scan the environment for important information	4.03	0.67	3.79	0.99
Staff share information regarding potential complications (e.g. patient changes, bed availability)	4.33	0.54	4.05	0.90
Staff meets to reevaluate patient care goals when aspects of the situation have changed	4.19	0.72	3.93	0.91
Staff correct each other's mistakes to ensure that procedures are followed properly	4.02	0.96	3.93	0.80
Mutual Support	**4.21**	**0.63**	**3.95**	**0.77**
Staff assist fellow staff during high workload	4.19	0.90	3.84	1.02
Staff request assistance from fellow staff when they feel overwhelmed	4.30	0.80	4.05	0.82
Staff caution each other about potentially dangerous situations	4.30	0.71	4.19	0.73
Feedback between staff is delivered in a way that promotes positive interactions and future exchange	4.14	0.80	3.95	0.84
Staff advocate for patients even when their opinion conflicts with that of a senior member of the unit	4.25	0.67	3.95	0.95
When staff have a concern about patient safety they challenge others until they are sure the concern has been heard	4.27	0.70	3.95	0.84
Staff resolve their conflict even when the conflicts have become personal	4.0	0.78	3.70	1.08
Communication	**4.35**	**0.45**	**4.13**	**0.63**
Information regarding patient care is explained to patients and their families in lay terms	4.35	0.51	4.33	0.64
Staff relay relevant information in a timely manner	4.38	0.52	3.98	0.91
When communicating with patients staff allow enough time for questions	4.35	0.60	4.16	0.65
Staff use common terminology when communicating with each other	4.33	0.54	4.14	0.71
Staff verbally verify info0rmation that they receive from each other	4.35	0.57	4.07	0.77
Staff follow a standardized method of sharing information when handing off patients	4.33	0.54	4.21	0.77
Staff seek information from all available resources	4.33	0.51	4.02	0.91
Total T-TPQ	**4.26**	**0.47**	**4.03**	**0.66**

*$p < 0.05$

Findings for RQ1: Nurses' Perceptions of Teamwork

The mean total T-TPQ score for nurses was 4.26 (SD = 0.47). This score represents a moderate agreement of nurses on teamwork and is statistically significantly higher than that of nursing assistants. The leadership construct as a subgroup was rated the highest by nurses (M = 4.44, SD = 0.54), with communication the second highest (M = 4.35, SD = 0.45). The lowest scoring construct was situation monitoring (M = 4.07, SD = 0.58). At the item level, there were two items with the highest score for nurses: "my supervisor/manager provides opportunities to discuss the unit's performance after an event" (M = 4.54, SD = 0.53), and "my supervisor/manager ensures staff are aware of any situations or changes that may affect patient care (M = 4.54, SD = 0.50). The item with the lowest score was "staff monitor each other's performance" (M = 3.79, SD = 0.79).

Findings for RQ2: Nursing Assistants' Perceptions of Teamwork

The mean total score for the entire T-TPQ was 4.03 (SD = 0.66). This score represents a moderate agreement of nursing assistants on the overall perception of teamwork and is statistically significantly lower than that of nurses. The communication construct was scored the highest by nursing assistants (M = 4.13, SD = 0.63) and leadership was second highest (M = 4.11, SD = 0.83). The lowest scoring construct was situation monitoring (M = 3.92, SD = 0.71). At the item level, the item with the highest score was "my supervisor/manager ensures staff are aware of any situations that may affect patient care" (M = 4.23, SD = 0.78). The item with the lowest score was "staff resolve their conflict even when the conflict becomes personal (M = 3.70, SD = 1.08).

Findings for RQ3: Differences in Nurses' and Nursing Assistants' Mean Perception

There was a significant difference between nursing assistants and nurses with respect to the total T-TPQ (M = 4.03 and 4.26 respectively, $p<0.03$), leadership (M = 4.11 and 4.44 respectively, $p<0.01$), and communication (M = 4.13 and 4.35 respectively, $p<0.04$). Within leadership, the following items were significantly different between the two groups, with nurses agreeing more often than nursing assistants:

1. "My supervisor/manager provides opportunities to discuss the unit's performance after an event" *(*$p<0.00$)
2. "My supervisor/manager ensures that staff are aware of any situations or changes that may affect patient care" ($p<0.02$)
3. "My supervisor/manager models appropriate team behavior" ($p<0.02$)
4. "My supervisor/manager ensures that staff are aware of any situation or changes that may affect patient care" ($p<0.01$)

Within communication, the following questions were significantly different between the two groups, with nurses agreeing more often than nursing assistants:

1. "Staff relay relevant information in timely manner" ($p<0.00$)
2. "Staff verbally verify information that they receive from each other" ($p<0.03$)
3. "Staff seek information from all available sources" ($p<0.02$)

Although team function as a construct showed no statistically significant differences between the groups, the team function-related item "staff within my unit share information that enables timely decision making by direct patient care team" ($p<0.00$) was significantly different between the two groups with nurses agreeing more often than

nursing assistants. Mutual support as a construct showed no statistically significant differences, but the mutual support-related item "when staff have a concern about patient safety, they challenge others until they are sure the concern has been heard" (p<0.03) was significantly different between the two groups with nurses agreeing more than nursing assistants. Furthermore, situation monitoring showed no statistically significant differences; however, the team function-related item "staff share information regarding potential complications (patient changes, bed availability)" (p<0.04) was significantly different between the two groups with nurses agreeing more often than nursing assistants. Table 3 shows the statistically significant constructs and individual questions that were significantly different between the two groups at p <0. 05 level of significance.

Table 3

Two Sample t-Test Results

Variable	Mean (Nurses)	Mean (Nurse Assistants)	T-test *p*-value*
Leadership	**4.44**	**4.11**	**0.01**
My supervisor/manager provides opportunities to discuss the unit's performance after an event	4.54	4.16	0.00
My supervisor /manager takes time to meet with staff to develop a plan of care for patient care	4.43	4.05	0.02
My supervisor/manager models appropriate team behavior	4.49	4.14	0.02
My supervisor/manager ensures staff are aware of any situations or changes that may affect patient care	4.54	4.23	0.02
Communication	**4.34**	**4.13**	**0.04**
Staff relay relevant information in a timely manner	4.38	3.98	0.00
Staff verify information that they receive from one another	4.35	4.07	0.03
Staff seek information from all available sources	4.33	4.02	0.02
Staff within my unit share information that enables timely decision making by the direct patient care team (Team Function)	4.29	3.88	0.00
Staff share information regarding potential complications (e.g. patient changes, bed availability)	4.33	4.05	0.04
Total T-TPQ	4.26	4.03	0.03

*p < 0.05

The results above indicate there are significant differences between teamwork perception of nurses and nursing assistants and therefore, the two groups do not share a mental model that can help them unite in practice. Kalisch and Lee (2013) reported that a shared mental model is an essential ingredient of teamwork and the lack of it contributes to missed nursing care and poor patient outcomes. Previous research by Kalisch (2009) supported that without a shared mental model between nurses and nursing assistants, there is a discrepancy between what each group perceives as being in the realm of their responsibility and role and aspects of standard patient care are omitted. Bridging the gap between nurses' and nursing assistants' perceptions of teamwork is necessary if these essential groups are going to function as a cohesive and collaborative team, structured and organized to provide high quality patient care. The differences perceived require focus and effort on the part of hospital administrators and nurse leaders to engage nurses and nursing assistants in identifying and working towards higher levels of teamwork. Clinical simulation and classroom-based teamwork training has led to improvement in teamwork processes and improvements in patient safety outcomes. The results of this study may thus lead to training strategies that can effect organizational change and bring about positive transformation (Weaver, Dy, & Rosen, 2014).

Implications

Acquiring new knowledge is a valuable and lifelong process for human beings, because learning is essential for survival. The goal of this project was to examine nurses and nursing assistants in one community hospital as to their individual perceptions of the level of teamwork in their respective areas of practice post TeamSTEPPS implementation

(TeamSTEPPS, 2014). Research, as noted by Fawcett and Garrity (2009, p. 5) is "a formal, systematic, and rigorous process of inquiry used to generate and test theories about the health-related experiences of human beings within their environment and about the actions and processes that nurses use in practice."

In this study I worked to discover perceptions of nurses and nursing assistants related to level of teamwork, since the literature suggests there is a relationship between the level of perceived teamwork in a team-oriented healthcare environment and quality outcomes related to patient care (Kalisch, 2009). Using the results from this study to better understand the level of teamwork within the nursing dyad provides vast opportunities for the participating community hospital and for a more global healthcare community.

Although this was a small scale study with a limited number of participants, some interesting observations can be made. There are statistically significant differences between nurses' and nursing assistants' perceptions of teamwork, but the nursing assistant group scored all questions except one lower than their nursing counterparts. This suggests there is an opportunity to engage nursing assistants as a group in educational and teambuilding activities so they can perceive their role as important and their impact on teamwork validated. As reported by Lancaster, Kolakowsky-Hayner, Kovacick, and Greer-Williams (2015), unlicensed assistive personnel are rarely included in any type of meaningful patient discussion, which diminishes their perception of themselves as valuable team members.

Recommendations

In order to strengthen the teamwork perceptions of nurses and nursing assistants, it seems necessary to acknowledge that there are differences in perception to begin with. There are efforts underway nationally to recognize that teamwork in healthcare is essential to achieve high quality patient care and outcomes. However, these efforts are limited in their recognition of nursing teams comprised of nurses and their partners in care (whether they are referred to as unlicensed assistive personnel or nursing assistants) in overall delivery of patient care. More work is needed to bring the roles of nurses and nursing assistants into focus nationally and locally and to illustrate that this nursing dyad is crucial in providing patient care but is in need of major overhaul to improve teamwork perceptions and its hierarchical professional structure in order to reduce fragmentation or missed care and patient errors (Lancaster et al., 2015). A large scale study using the same validated T-TPQ instrument across an entire healthcare organization might shed additional light on the level of teamwork within clinical nursing units with findings that are more generalizable.

Strengths and Limitations of the Project

Strengths

The strength of this study lies in the use of a validated instrument. The TeamSTEPPS Teamwork Perception Questionnaire (T-TPQ) has been tested for reliability and validity to ensure the instrument measures what it is designed to measure. Reliability refers to the degree of consistency or accuracy with which an instrument measures the attribute it has been designed to measure (Polito, 2013). In parallel, validity

refers to the degree to which the instrument measures the phenomena in the first place or reflects the abstract construct being examined (Grove, at al. 2013 p. 479). Another strength of this type of study is that it conveys an important message to participants that their employing healthcare organization is interested in their perceptions of teamwork and is willing to undertake efforts to make improvements. Nursing leadership in the organization can use the results to design educational team-building exercises and training to improve teamwork with specific focus on the lowest ranking items and those areas where there are statistically significant differences between nursing team members.

Limitations

This study has several limitations. Due to limited sample size there was not enough power to run additional hypothesis testing, for example to evaluate whether a particular low or high score for any construct could be attributed to a specific clinical area or a shift.. The population sample was very small because it was designed as a pilot project; therefore, generalizability of the findings is limited. Another limitation was that the T-TPQ instrument was provided to staff as a paper and pen questionnaire rather than in electronic format, which might have been easier for participants to access and for the researcher to communicate.

There was an additional unanticipated limitation that occurred during the month of April at the site as the data collection progressed. The Joint Commission arrived for its three-year recurring accreditation survey and data collection boxes that had been placed on the units in prominent areas such as nursing stations had to be relocated to staff lounges. This relocation of survey collection boxes occurred without an opportunity to

educate the staff, which potentially impacted the number of participants. Additionally, some units did not have a lounge, so the boxes had to be moved into a nurse manager's office, additionally limiting the opportunity for staff to see the box and decide to participate. The relocation of the boxes lasted one week, after which they were returned to their original locations.

Section 5: Dissemination Plan

Organizational Dissemination

This research project took place in a community hospital where TeamSTEPPS methodologies have been implemented. Hospital leaders have been very interested in the learning from the results of project in order to implement an action plan to close the identified gap in teamwork perceptions of nurses and nursing assistants. As the largest group in the healthcare workforce, nurses and nursing assistants are vital to patient care and drive patient outcomes. I have been asked to disseminate this project to nursing and non-nursing leaders of the community hospital to bring awareness to and understanding of nursing staff perceptions and to participate in formulating the plan for the hospital's next steps.

I plan to submit this project to the annual regional nursing research conference hosted by my healthcare system. The yearly conference provides nursing researchers opportunity to participate in a poster presentation or a podium presentation to disseminate their recent work. I plan to submit my research for consideration to present at next year's conference. Additionally, I plan to apply to the National TeamSTEPPS Conference supported by AHRQ next year and work on a manuscript to submit to the Journal of Nursing Administration (JONA). JONA focuses on issues relevant to nurse leaders in variety of settings, providing practical, applied content and data obtained by the formal research process on interdisciplinary collaboration, organization-wide projects, management, and leadership. The journal is a referred journal, meaning that manuscripts are reviewed and selected by an editorial advisory staff for publication. As a pilot study,

my project, can inform nursing leaders and may be useful in a larger scale study inclusive of participants other than nursing staff.

Analysis of Self

As Scholar

According to Zaccagnini and White (2010), *scholarship* is defined as dissemination of research findings in publications, presentations, and other educational offerings that can be used by others. Conducting this DNP project has helped me become a more confident nurse-scholar, one who uses analytical methods to critically appraise literature and can translate research findings for practical and relevant use by patients and other nurses. The process of completing the project has inspired me to seek publication of my findings so that others can learn and perhaps even duplicate the study. Zaccagnini and White (2010, p. 67) asked,"what distinguishes the role of the DNP from other advanced practice degree holders?" There is no simple response because as Zaccagnini and White further elucidated, the DNP prepared nurse must not only understand and use the process of integrating best research, clinical skills, and knowledge, but must also implement clinical practice changes to improve patient outcomes. The DNP role carries great responsibility for outcomes and this factor distinguishes the DNP role in bringing research findings to the bedside where they matter most (Zaccagnini, & White, (2010).

As Practitioner

My DNP journey of nearly five years has changed my life in many ways. I have learned to seek answers to questions that I would not have asked several years ago. I have learned to listen more and think more critically about problems I must help solve in

administrative capacity. I have become accustomed to searching the literature for answers to clinical and administrative questions I encounter in my professional role. And I have found that my contribution at work has increased in value and my opinion is more frequently sought on matters that I would have not been consulted on in the past.

Earning the DNP has resulted in more career opportunities. I have been asked to join my organization's executive steering committee, designed to pursue magnet designation, and participate on other high-level committees. Colleagues who have heard that I am a DNP student have sought my mentorship as they embark on or find themselves struggling in their educational endeavors. I believe I have grown as a nurse, as an administrator, and primarily as a lifelong learner by pursuing my DNP degree.

I am very humbled as well when I evaluate the road I have traveled and see how much more there is to explore. I know this DNP process, not just the degree, has given me the right tools for whatever the next steps will be. John Quincy Adams, the sixth U.S. President, is credited with saying,"If your actions inspire others to dream more, learn more, do more, and become more, you are a leader" (Pozin, 2014). I hope through this project I can add in a small way to the professional body of nursing knowledge and inspire others to take similar steps.

As Project Developer

The DNP project stretched my comfort level in many ways. It challenged my organizational and planning skills, as my work often depended on others completing their work. The process of obtaining site and Walden IRB approval was frustrating and at times very overwhelming. However, I found comfort in my belief that my research was

important and I could not wait to see the results I felt would bring a new direction for nursing staff in my organization. I was already planning the next steps in terms of continuing the project on a larger scale to include other disciplines and disseminate my work initially at the organizational level and then at a larger healthcare system level.

The confidence I have gained as a result of this DNP journey has empowered me to take on projects of any magnitude and see them through to completion. Lastly, and most importantly, I believe my DNP journey has inspired my children, ages 29, 23, and 17, to seek whatever it is in life that brings them joy, pride, a sense of accomplishment, and personal fulfillment.

As Professional

The journey through the DNP process has enabled me to grow as a professional in terms of knowledge and skills and has shown me how learned abilities can be applied in variety of settings. While pursuing the DNP degree I applied and was accepted to an adjunct faculty role at a local university, teaching undergraduate nursing students. This experience has added to my knowledge and I have been enriched by what the students taught me in return. They recalled my memories of being a nursing student and interacting with patients for the first time. Remembering my alternately awkward and rewarding first patient experiences helped me to structure activities and discussions for the students to enhance their learning. I plan to continue teaching as an adjunct because it brings me closer to bedside practice and to those who will be the nurses of tomorrow.

Summary

The goal of this project was to examine the perceptions of nurses and nursing assistants in one community hospital as to the level of teamwork in their respective areas of practice post TeamSTEPPS implementation. The results suggest that nurses and nursing assistants working alongside each other did not perceive teamwork in the same way, which indicated that more effort needs to be undertaken to increase teamwork between the nurse and nursing assistant groups. Kalisch (2012, p. 50) reported that "greater teamwork among the nursing staff of acute care hospital units has been shown to offer clear benefits, including greater quality of care, fewer errors, and more satisfied patients."

Teamwork is an essential component of highly reliable organizations (Baker, Day, & Salas, 2006). In order to provide seamless care delivery, satisfied patients, and high quality patient care outcomes, healthcare organizations must invest in resources designed to increase levels of teamwork across nursing teams and incorporate nursing assistants, valuable members of the nursing team, every step of the way. The findings of this study indicate a discrepancy in teamwork perceptions between nurses and nursing assistants and a need to focus on communication and team leadership in order to improve teamwork. Future studies on teamwork perceptions of nurses and nursing assistants should utilize a larger sample size and other clinical areas of practice. The results provide confirmation that teamwork is related to patient safety and improving the level of teamwork may contribute to higher quality of care and fewer patient errors.

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Appendix A: Informational Letter

Informational Letter To Staff Nurses, Full Time, Part Time And Per Diem And Nursing Assistants, Full Time, Part Time And Floats

Consent for Participation in a Research Study

Dear Colleague,

You are being invited to participate in a research study. The title of the study is "Teamwork Perceptions of Nurses and Nursing Assistants in a Community Hospital Setting where TeamSTEPPS has been implemented".

The purpose of this study is to identify, examine and compare the individual perceptions of teamwork by nurses and nursing assistants based on five components of teamwork: team structure, leadership, communication, mutual support and situational monitoring. Teamwork perceptions will be measured using the Teamwork Perceptions Questionnaire (T-TPQ).

You must be at least 18 years old to participate. If you are not 18 or older, please inform the researcher and do not complete the survey.

Your participation is entirely voluntary. If you would prefer not to participate, simply return the blank survey. If you agree to participate, please complete the attached survey. Your responses are anonymous; do not put your name or other identifying information on this survey. We ask that you try to answer all questions. However, if there are any questions that you would prefer to skip, simply leave the answer blank. You can choose not to participate in this study; your employment status will not be affected. Your

responses will not be available to your employer or anyone else. There is no risk or cost for participating in this study.

If you choose to participate in the study, you will be asked to complete TeamSTEPPS Teamwork Perceptions Questionnaire called the T-TPQ along with demographic questions. It may take up to 15 minutes to complete the questionnaire. The surveys are provided on your unit.

The focus of the study is not on individual responses, but on correlations among the various study variables in the group. You may or may not receive any individual benefits at this time; however the information gathered here has the potential for future benefits related to teamwork and training of teams as appropriate.

This research has been reviewed by the Institutional Review Board (IRB). If you have any questions about your rights as a participant, or if you feel that your rights have been violated, please contact the IRB.

Please keep this information sheet for your reference.

Appendix B: Demographic Information

Please provide answers to the following questions:

1. **Your age:** o 19-30 years o 31-45 years o 46-60 years o Over 60 years	2. **Years of Experience in the Role:** o 0-10 year o 11-20 years o More than 21 years
3. **Primary Role in Healthcare:** o Staff Nurse o Nursing Assistant o Other (specify): _____	4. **On average, how many hours per week do you work at this hospital (please provide a number)?** _____
5. **Gender:** o Female o Male	**6. Highest Degree Earned:** o High School Diploma o Associates Degree/Diploma o Baccalaureate o Masters o Doctorate o Other (specify):_____
7. **What shift do you usually work?** o Day: 7am-3pm o Evening: 3pm-11pm o Night: 11pm-7am o Other (specify): _____	8. **What is your unit type?** o Medical/ Surgical o Critical care/Telemetry/ED o Peri-Op/PST/ENDO/OR o Other (specify): _____

Appendix D: TeamSTEPPS Teamwork Questionnaire (T-TPQ)

Team Function	Strongly Agree	Agree	Neutral
1. The skills of staff overlap sufficiently so that work can be shared when necessary.			
2. Staff are held accountable for their actions.			
3. Staff within my unit share information that enables timely decision making by the direct patient care team.			
4. My unit makes efficient use of resources (e.g., staff supplies, equipment, information).			
5. Staff understand their roles and responsibilities.			
6. My unit has clearly articulated goals.			
7. My unit operates at a high level of efficiency.			
Leadership	**Strongly Agree**	**Agree**	**Neutral**
8. My supervisor/manager considers staff input when making decisions about patient care.			
9. My supervisor/manager provides opportunities to discuss the unit's performance after an event.			
10. My supervisor/manager takes time to meet with staff to develop a plan for patient care.			
11. My supervisor/manager ensures that adequate resources (e.g., staff, supplies, equipment, and information) are available.			
12. My supervisor/manager resolves conflicts successfully.			
13. My supervisor/manager models appropriate team behavior.			
14. My supervisor/manager ensures that staff			

are aware of any situations or changes that may affect patient care.			
Situation Monitoring	**Strongly Agree**	**Agree**	**Neutral**
15. Staff effectively anticipate each other's needs.			
16. Staff monitor each other's performance.			
17. Staff exchange relevant information as it becomes available.			
18. Staff continuously scan the environment for important information.			
19. Staff share information regarding potential complications (e.g., patient changes, bed availability).			
20. Staff meets to reevaluate patient care goals when aspects of the situation have changed.			
21. Staff correct each other's mistakes to ensure that procedures are followed properly.			
Mutual Support	**Strongly Agree**	**Agree**	**Neutral**
22. Staff assist fellow staff during high workload.			
23. Staff request assistance from fellow staff when they feel overwhelmed.			
24. Staff caution each other about potentially dangerous situations.			
25. Feedback between staff is delivered in a way that promotes positive interactions and future change.			
26. Staff advocate for patients even when their opinion conflicts with that of a senior member of the unit.			
27. When staff have a concern about patient			

safety, they challenge others until they are sure the concern has been heard.			
28. Staff resolve their conflicts, even when the conflicts have become personal.			
Communication	**Strongly Agree**	**Agree**	**Neutral**
29. Information regarding patient care is explained to patients and their families in lay terms.			
30. Staff relay relevant information in a timely manner.			
31. When communicating with patients, staff allow enough time for questions.			
32. Staff use common terminology when communicating with each other.			
33. Staff verbally verify information that they receive from one another.			
34. Staff follow a standardized method of sharing information when handing off patients.			
35. Staff seek information from all available sources.			

(Battles, J. 2010).

Appendix F: Permission to Use the T-TPQ Instrument

RE: T-TPQ

Battles, James (AHRQ) [James.Battles@ahrq.hhs.gov]

Sent: Monday, March 07, 2016 1:33 PM

To: Enzinger, Iwona

Cc: 'iwona.enzinger@waldenu.edu'; iwona@enzinger.us

You have permission the use this instrument in your study. Please indicate the source of the instrument and if possible share with AHRQ the results of your study.

Jim

James B. Battles, Ph.D.
Social Science Analyst
AHRQ/CQuiPS
5600 Fishers Lane MS 06N100B
Rockville, MD 20857
Phone: 301-427-1332
Cell: 301-346-7694
Email: James.Battles@ahrq.hhs.gov

-----Original Message-----
From: Enzinger, Iwona [mailto:IEnzinge@northwell.edu]
Sent: Monday, March 07, 2016 10:40 AM
To: Battles, James (AHRQ)
Cc: 'iwona.enzinger@waldenu.edu'; iwona@enzinger.us
Subject: FW: T-TPQ

Hello Dr. Battles,

My name is Iwona Enzinger and I am a doctorate student at Walden University. I am planning to use the TeamSTEPPS Teamwork Perceptions Questionnaire(T-TPQ) as a tool perceptions of teamwork in nurses and nursing assistants and comparing the results across the 5 domains of teamwork.

I am requesting permission to use the T-TPQ tool. The study will take place in a community hospital part of the Northwell Health system.

I thank you in advance for your consideration.

Sincerely,
Iwona Enzinger RN, MSN, DNP(c).