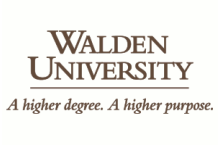

2020

A Systematic Review of Structured Communication Among Interprofessional Teams

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This is to certify that the doctoral study by

Angeleta Robinson

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
2020

Abstract

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MSN, University of West Georgia, 2013

BSN, College of Staten Island. 2003

Project Implementation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Nursing Practice

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February 2020

Abstract

A leading cause of errors in health care settings is failure of interprofessional teams to communicate effectively. Ineffective communication has been associated with delays in treatment, omission of care, readmissions, and adverse and sentinel events. These incidents cost billions of dollars per year, and with current reimbursement processes, health care organizations are now incurring the cost of such errors. The purpose of this project was to promote effective communication between nurses and physicians to reduce errors by standardizing the interaction among team members during interdisciplinary rounds and patient handoffs to increase the nurse communication Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) scores, the physician communication HCAHPs scores, and the patient satisfaction HCAHPS scores in an acute care hospital. The theory of planned behavior, which focuses on motivation, perceived attitudes, and behavioral control, and Donabedian's model of structure-process-outcome support this project related to effective team communication to reduce the risk of poor patient outcomes. The project approach was a systematic review of the literature to determine best practices regarding communication during interdisciplinary rounds by linking quantitative data with a review of the qualitative studies reviewed. In applying research findings to this identified clinical practice issue, consistent communication processes can be developed that will promote positive social change for patients, families, nurses, and physicians.

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Dedication

I dedicate my dissertation work to my family and friends. A special feeling of gratitude to my loving parents, Clarence and Hilda Davis, whose love of service and words of encouragement has pushed me toward high ideals in my professional life.

I also dedicate this dissertation to my many nursing colleagues and physicians who have supported me throughout this process. I will always appreciate all they have done, especially the checks and double checks to ensure that I got it right. The informational technology team helped me to master technological skills, my close family members helped in proofreading, and my direct nursing leadership team inspired me to master a servant leader role.

I dedicate this work and give special thanks to my daughter Sydney and son Samora-Machel for being there for me throughout the entire doctoral program. Both of you have been my best cheerleaders – love you enough!

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I wish to thank my committee members who were more than generous with their expertise and precious time. A special thanks to Dr. Sue Ellen Bell, my committee chair, for her countless hours of reflecting; reading; encouraging, and most of all her patience throughout the entire process of review and revisions I wish to thank Dr. Bell, for her careful guidance and agreeing to serve on my committee.

I would like to acknowledge and thank my health care system for allowing me to conduct my project and providing any assistance requested. Special thanks go to my preceptor for her continued support. Additionally, a special thanks to Dr. Sonia Camphor whose vision of team members collaborating to effective better communication have served as the foundation for this project.

Finally, I would like to thank the beginning teachers, mentors, and administrators in our school division who assisted me with this project. Their excitement and willingness to provide feedback made the completion of this research an enjoyable experience.

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Section 1: Nature of the Project

Introduction

Standardizing the process of communication throughout the health system to achieve consistency and high quality outcomes is an important goal. The current practices at the project site, an acute care hospital that is a health care facility in which a patient receives care and is treated for an illness or disease that is short in nature; show that some physicians conduct rounds, that is, checking on their patients by assessing their vital signs, labs, or reading the nurses notes by themselves and are communicating with the patient, but are not communicating the plan of care to the nurses taking care of the patient. Other physicians time their rounds so that they enter the patient room with the advance practice nurses but are inconsistent in communicating the plan of care to the staff nurses. With these different communication practices, the risk for errors is increased and interprofessional collaboration suffers. Therefore, the clinical practice problem addressed by this project is the lack of effective communication during rounds of nurses and physicians at an acute care hospital.

The patient experience is seen by researchers as a significant area of quality that reflects satisfaction with care and affects reimbursement to the hospital as many regulatory bodies factor the patient experience scores into the reimbursement equation for health systems. The persons who will benefit from this project are the patients and their families, the health care team members, and the health system. Miscommunication or missed communication during rounds leads to issues such as frequent medication errors and discrepancies in the dosage of medication given or dispensed by the pharmacist.

These errors occur when communication fails between nurses and physicians. Ineffective communication resulting in medication errors has made such issues relevant to law makers and the patients themselves (Fydenberg & Brekke, 2012).

Another example is the impact on the transition of care process when communication between the nurse and physician is ineffective. Ineffective communication has resulted in poor decision-making regarding transitional care, lack of care necessary for discharge being delivered in a timely manner, and unclear and disorganized information about discharge. These issues have led to inappropriate readmissions, poor care plan information, and family members or significant others doing work-arounds to compensate for the ineffective communication (Sarnyski et al., 2018). The lack of caring skills needed to conduct a sensitive conversation during rounds has led to patients and families feeling lost and unsupported (Gillett, O-Neill, & Bloomfield, 2016). Ineffective communication has led to $12 billion being spent in the United States annually for litigation of cases, financial compensation to the patient and/or family members, and process changes as a result of inefficiencies (Turner et al., 2018).

The communication errors need to be quantified to allow for implementation of process changes that are effective in addressing those (Stortenbeker et al., 2018). Written communication as an alternative means of communication was viewed by Spruce and Spruce (2016) as unstructured and leading to miscommunication of the expected plan of care due to staff inadvertently misinterpreting the information. Team structure, the organization's patient care expectations, and documentation standards are important to ensure high quality care is given. Miscommunication between nurses and physicians puts

patients at risk and is an ongoing concern for teams to address. Health care team members need to be taught how to communicate and to reflect on their own personal behavior during medical consultations or interprofessional interactions.

Deveugele (2015) speculated that communication behavior is learned in practice and generally reflects the culture of the organization. In a health care environment, health care team members interact at various intervals throughout the shift while providing care for their patients; during rounds, the time varies based on the unit (e.g., acute care vs. specialty). The process of shared decision-making during rounds is a function that requires behavioral changes in all team members to ensure cohesiveness. The attitude of the participants also affects their interaction and the group interrelatedness. Shared decision-making, as discussed by Thompson-Leduc, Clayman, Tourcotte, and Legare (2015), is an interactive phenomenon that is visible among team members and affects health outcomes. The process of shared decision-making enhances the functionality of the team and is, therefore, an effective method to communicate and collaborate between patients, their family members, and the health care team.

The role of each team member has an impact on the attitudes and behavior of the team and, subsequently, the function of the team (McEwen & Willis, 2014). Positive and negative health outcomes are associated with shared decision-making. The incorporation of shared decision-making into the health care process is challenging as health care team members' attitudes and the organizational culture may be contributing factors that lead to success or failure (Thompson-Leduc et al., 2015).

For this project, I synthesized from a systematic review of the literature the best practices for standardizing the process of nurse-physician communication between during the rounds. The systematic review was guided by the following project question: “What are the best practices for standardized, consistent communication between nurse and physician health care team members during rounds?” I reviewed and evaluated the literature to establish what has worked in similar settings to improve communication between nurses and physicians and how to promote change in the organization to improve patient outcomes in this area of practice concern.

The practices in the hospital setting of this project include some physicians using the process of rounds for interacting with their patients; these providers do their written care plan later in the day. Other providers are incorporating the nursing team, including nurse practitioners, into their rounds. When these two different methods are practiced, the inconsistency has led to increased errors and conflicting management of the team dynamics and handoff communication between team members. The benefit of effective communication is that it requires a team effort, which decreases the chance of misinterpretations and, therefore, increases high quality outcomes. The major stakeholders in the need for effective interprofessional communication are the physicians, the patients and their families, the nurses, and the health care organization in the effort to provide high quality care that is efficient and safe. The gap in effective communication practices has resulted in poor quality outcomes. The remedy for this communication gap is centered on the fact that communication skills are learned and refined through practice (Deveugele, 2015; Stortenbecker et al., 2018). The gap in practice can be addressed by

teaching communication skills in a standardized format that will allow the nurse and physician team members to discuss plans of care in a consistent manner with the patient/family involved at the bedside during rounds.

Problem Statement

The problem to be addressed by this project is ineffective communication among interprofessional team members (i.e., nurses and physicians), which is leading to negative outcomes that affect the patient, their family, and the health system resulting in poor utilization of services and increased morbidity and mortality (Alvaro et al., 2015). The clinical practice question addressed by this project is: What are the best practices for standardized, consistent communication between nurse and physician health care team members during rounds?

Purpose Statement

The purpose of this project is to determine through a systematic review of the literature the best practices for standardizing the process of nurse-physician team communication during rounds. The project will address the clinical practice problem of inconsistent and ineffective practices and processes among nurse-physician interprofessional team members during rounds at an acute care hospital. Inconsistent and ineffective practices during rounds are due to poor communication skills, and lack of standardization processes, which have contributed to poor patient outcomes ranging from excess morbidity to death. Communication errors were the leading cause of sentinel events reported to the Joint Commission along with ineffective teamwork that has contributed to many medical errors (Pettit & Duffy, 2015). For this reason, the Institute

of Medicine (IOM) has suggested that standardization of communication among health care team members can contribute to better teamwork and, ultimately, positive patient outcomes (Shalala & Bolton, 2012). With this project, I sought to address the gap in practice by using the available evidence on effective standardized communication among nurses and physicians as a means of improving health outcomes. The focus will be on nurse and physician communication as part of the interprofessional team during rounds.

The Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) scores are used by the hospital site of the project to evaluate the patients' perception of the care that they have received. The scores are used to monitor and make recommendations for quality improvement (Elliott et al., 2015). Every fiscal year, this health system establishes its strategic goals for its quality metrics and sets mandates for each department on achieving them. In the health care setting, quality of care was evaluated by Staples et al. (2016) as how the nurse perceived the care to be. In addition, the nurses' perception of the quality and the outcomes were influenced by the nurse-physician relationship and the leadership within the health system (Sarah et al., 2014).

Quality improvement (QI) initiatives came about due to identified gaps in the health care industry (Suchy, 2010). Public report cards or surveys that measure and report hospital quality resulted as a way to provide transparency and compare metrics across hospitals and systems. The health system site for the project utilizes HCAHPS scores for quality metrics measurement. In fiscal years 2016 and 2017, the health system's information on nurse and physician communication was well below benchmark. The health system compiles an executive summary of all 11 hospitals' HCAHPS scores and

uses these metrics as a part of their strategic plan in meeting their quality goals. In 2016 and 2017, the percentile rank cumulatively for physician communication was 45% and 48% respectively; the threshold was 59%, target was 63%, and the max goal was 66%. For nurse communication in the same time period, their percentile rank for communication was 37% in 2016 and 41% in 2017 with their threshold set at 55%, the target at 65%, and the max goal of 70%. Improvement in care quality is a national priority in both acute care settings and in nursing homes (Suchy, 2010; Park et al., 2011), The advantage of having a report card for quality measures is the opportunity for both the nurse and physician to assess their impact on patient safety through effective communication.

Nature of the Doctoral Project

The Doctor of Nursing Practice (DNP) project entailed a systematic review of the literature related to communication and collaboration across interprofessional teams with the focus on the nurse-physician communication practices. At a minimum, the databases CINAHL, MEDLINE, and EMBASE were searched for articles published between 2000 and 2019. The project followed the DNP Systematic Review Manual and included a PRISMA flowchart (see Appendix C) to document the review of the literature and a table to list the articles reviewed and those used in the recommendations. I also provided the level of evidence and the strength of the literature selected (see Appendix B) to support recommendations for improvement in practice. The supporting evidence and recommendations for quality improvement will be presented to the leadership for consideration of a trial implementation.

Significance

The persons and entities that will benefit from this project are the patients, nurses, physicians, the pharmacist, the social worker/care coordinator, residents, interns, medical students, nursing students, pharmacy staff, and the health system. The targeted stakeholders for the project are the health care professionals whose communication effectiveness is essential for quality patient rounding during interdisciplinary rounds, that is, the nurses and physicians. Communication errors are seen currently at the hospital site in patient rounds, and these types of inefficiencies have led to $12 billion being spent in the United States annually for litigation cases, financial compensation for the patient and/or family member, and hospitals needing to make changes in their processes as a result of these inefficiencies (Turner et al., 2018). The communication errors need to be quantified to allow for process changes to be made that are effective in addressing them.

Traditionally, the role of women within the health care industry and other social care professions has been perceived as subservient (MacMillan, 2012). Historically, women make up the highest number of employed members in the nursing profession. These perceptions can negatively impact the communication dynamics in the nurse-physician relationships during rounds. According to MacMillan (2012), the physician is viewed as the clinical leader and decision maker, which impacts shared decision-making in interprofessional collaboration and, consequently, nurse-physician communication. Popa (2015) argued that social change has affected the interprofessional partnership during rounds; cooperation and process changes impact the lives of all people within their communities. The role adjustment needed for all members of an interdisciplinary team to

view each team member as having equal value to the process of providing care to their patient is challenging. Social transformation in health care will encourage physicians to participate in effective communication to decrease health care errors and improve patient satisfaction (Sicilia, Saenz-Alvarez, Gonzalez, & Ferriz, 2015). Health processes and services that support team member collaboration and encourage shared decision-making are reported in the literature to decrease health care errors. In complex health care systems, each professional group is interconnected with the other health professionals and must function seamlessly to provide quality care (Bucknall, 2018).

The effectiveness of communication among physician and nurse team members is reflected in the outcomes of shared decision-making or care planning. Effective communication improves trust among team members, improves nurses' job satisfaction, and reduces negative patient outcomes. Each interprofessional team member brings unique strengths to the care of the patient. In an interdisciplinary team, when members are cohesive across their roles, families perceive them to be patient and family centered. In an interdisciplinary team when these attributes are present, patient satisfaction increases and outcomes improve (McNicholas et al., 2017; Thompson-Leduc et al., 2015).

Urisman, Garcia, and Harris (2018) noted that timing of rounds affects the nurses' participation in communication as they may be involved in attending to patients' needs. Urisman et al. discovered that the attitudes of both nurses and physicians improved and led to improved interprofessional communication after interdisciplinary rounds were introduced and conducted over time. Interdisciplinary rounds were associated with

improved communication, development of plans to reduce preventable errors, and a decrease in conflicts among team members in regard to their roles (Elsbeth, Ten, Raoul, & Jaap, 2015).

Health care systems are realizing that in order to coordinate care, interdisciplinary rounds need a structured process to increase staff collaboration (Mills et al., 2010) and that good interprofessional relationships are pivotal in the success of the team dynamics. Wilcock, Harding, Moore, Nicolls, and Powell (2013) noted that 87% of medication errors were due to human factors and organizational inadequacies. The elimination of variation in the communication process during rounds may be a way to reduce the risk factors associated with the current communication process.

The health care field consists of professionals with all personality types, and people from different cultures and differing socioeconomic strata. In the interprofessional team, the roles of team members need to be clearly articulated so that the team's cohesiveness can be enhanced to improve the shared decision-making and positive communication among the team members. Ineffective communication among health care personnel leads to poor quality care and errors. Improving communication through working on behaviors that are intentional and align with the team goals and subsequently the organization's mission will decrease the risk of errors and provide safer care.

In this project, I explored the dynamics of communication between nurse-physician interprofessional team members. As nursing is a female-dominated professional group, they are still experiencing challenges in regard to lack of trust, respect, and poor collaborative attitudes in the health care system between nurses and physicians

(Tan et al., 2017). Nurses, physicians, patients, and organizational leaders all have a role in making health care delivery safer. Patients need to be active decision-makers in their care by being informed, and the nurse-physician interprofessional teams have a responsibility to function cohesively to provide high quality care. Potential positive social change resulting from this project includes reducing medical errors by improving communication among the nurse-physician teams during rounds.

Summary

Structured communication in interdisciplinary care teams improves safety, efficiency, understanding of the plan of care, and teamwork as it builds a therapeutic milieu for the patients, staff, and families. Team engagement is significant to the success of the patients' health outcomes and requires behaviors that are supportive of positive change. This doctoral project provides an analysis of the current literature surrounding best practices for standardized, consistent communication to engage nurses and physicians in an initiative to decrease patient harm.

Section 2: Background and Context

Introduction

Ineffective communication among nurse-physician interprofessional team members leads to negative outcomes and increased morbidity and mortality that affect patients, their families, and the health system (Alvaro et al., 2015). The purpose of this project was to determine through a systematic review of the literature the best practices for standardizing the process of nurse-physician communication on an acute care unit to improve patients' health outcomes. The guiding clinical question for this project was "What are the best practices for standardized, consistent communication between nurse and physician health care team members?" The models and theories used in developing the project served as guides in the interventions to be applied for improving communication. In this section, I review these models and discuss the clinical setting of the project.

Concepts, Models, and Theories

The theory of planned behavior, proposed by Ajzen in 1985, is a sociocognitive theory that addresses future planned and intentional behaviors that are consistent with an individual's self-determined motives (Sicilia et al., 2015). The basis of this theory is that action is not arbitrary; rather, the intent of the action is deliberate and is the predictor of the behavior. Intentionally planning how the individuals in a team function within their roles is the best predictor of improved communication. The three forms of change behavior as posited by Yang, Nam, Choi, and Kyungmook (2018) are mere compliance, active cooperation, and proactive championing. In mere compliance, the agreement with

the proposed change involves the least amount of backing by the employee, while active cooperation in the change process involves a conscious effort on the employees' part. Proactive championing of the change process involves a total commitment to the change process and the employee's willingness to exceed expectations to ensure the success of the project, even soliciting others' help to ensure the success of the project. The theory of planned behavior is a framework for explaining change in the nurse-physician interprofessional team communication process and requires a commitment from all employees involved in the team.

Ajzen's theory of planned behavior and Donabedian's model of structure, process, and outcome formed the theoretical framework for this project. In Donabedian's model (Kobayashi et al., 2011) patients' experiences related to nursing care are considered an outcome, which requires effective communication to reduce the risk of poor patient outcomes. Donabedian's conceptual model is assessed for its relevance to the practice gap in nurse and physician communication, and the quality of health care services provided in this project. It focuses on the processes that are used to provide quality care, and the structure that is used to achieve quality outcomes. Kobayashi et al. (2011) posited that these three concepts (structure-process-outcome) are all interrelated and that the outcome of the process was the deciding factor on whether quality care was achieved. Nurse-physician interprofessional communication is a complex phenomenon. Many different variables affect the health care team and how professionals interact with each other. Communication skills are influenced by personality traits. Trait theory, also known as dispositional theory, is a method of assessing human personality and behavior. Trait

theory can be used in addressing the practice problem of nurse-physician interprofessional issues surrounding communication with regard to care coordination for patients with comorbidities that requires many consultants. Kovach, Simpson, Reitmaier, Johnson, and Kelber (2010) stated that the personality traits of conscientiousness and emotional stability predict job performance for multiple occupations. Keeping this in mind, it is possible to infer that personality traits are a strong factor in effective communication skills during rounds.

The effectiveness of nurse-physician communication is seen in shared responsibility for decision-making and care planning (Thompson-Leduc et al., 2015). Partnership improves trust between team members and job satisfaction and reduces negative patient outcomes. Each member in the nurse-physician interprofessional team has unique competencies that together work to provide holistic care for patients; however, the dynamics of communication between the nurse and physician can have significant effect in care outcomes (Clapper, 2018; Daiski, 2004). Team members who display a positive attitude toward a change process are perceived as being in control as their self-confidence will be high and they are less likely to resist the change. On the other hand, employees who are afraid of failing may display behavior of resistance because of their fear of failing. The therapeutic context of the nurse-physician interprofessional team's interaction may allow some employees to anticipate their own limitations or inabilities and cause them to perform or not perform the change-related task (Kovach et al., 2010).

Relevance of the Project to Nursing

Health care professionals are accustomed to working in silos, which can affect workplace morale and patient safety, and may lead to negative outcomes such as death. The IOM recognized the need for change in current hospital practices and proposed that collaborative interdisciplinary teams are necessary for reducing negative patient outcomes (Pettit & Duffy, 2015). Inadequate or ineffective communication correlates with poor patient outcomes (Adams, 2018). Communication between nurses and physicians is a challenge within many health care systems, and some of the approaches to address these issues include standardization of expectations and structured, consistent processes, shared decision-making models across professional groups, and role clarification.

Addressing the issue of poor nurse-physician interprofessional communication is relevant to nursing as the patient experience is seen as a significant area of the patient's care quality. McNicholas et al. (2017) reported that "patient satisfaction is directly correlated with the nursing work environment and satisfaction, effective team communication, and the presence of patient centered care" (p. 373). The safety issue that arises with poor communication was discussed by Enger and Andershed (2017), who stated that procedures and treatments were often not clearly defined during rounds and that other safety concerns highlighted were poor patient outcomes attributable to ineffective communication between team members. Ineffective communication has been associated with delays in treatment, omission of care, readmissions, and adverse and sentinel events (Winkoswi, 2010). These incidents cost billions of dollars per year and

with current reimbursement processes, health care organizations are now incurring the cost of such errors. With this understanding, it is vital for health care organizations to facilitate effective communications and reduce errors. A culture of safety is facilitated by effective communication demonstrated by shared decision-making among health care team members. The advancement of nursing practice that seeks to provide patients with safe, high quality care will address the gap-in-practice regarding ineffective communication skills of team members that has led to safety concerns at the clinical site and will be addressed by the utilization of a standardized communication process.

Local Background and Context

The setting for this project is an acute care hospital, which is an Accountable Care Organization (ACO) committed to addressing the health needs of their community, from prevention and wellness programs to providing "World Class" care, which is their motto. As an ACO organization, the hospital is held accountable for the care and cost of providing that care to every patient. They are a pay-for-performance organization that participates in public reporting. The government provides financial incentives for hospitals that are ACOs (Huber et al., 2018), and that are able to coordinate the care transition and improve quality and cost overall. In addition, this hospital is part of a large health system with numerous health parks, eleven hospitals, and multiple medical practices.

The health system's vision is to provide "World Class Service" through ensuring that its clinicians and health care workers are provided the tools that are needed to meet its mandate of "delivering high quality care every day and everywhere." The health

system is committed to being at the cutting edge of innovation in the form of new technologies that address the challenges of health care now and in the projected future. This commitment led the system in 2009 to change from their old operating system, McKesson, to EPIC. This change was a tremendous undertaking that involved the use of systems thinkers who were actively engaged in identifying processes and systems that had failed the patients or providers. With communication seen as an important process during rounds, a project that could address communication issues among the nurse-physician interprofessional team members was needed.

The main stakeholders in the project are the nurses and physicians. With these stakeholders involved in interprofessional communication, the information from the systematic review of the literature focuses on practices that pertain to the nurse-physician interaction. The project was necessary and appropriate in this setting as the group dynamics among the intended stakeholders directly impact patient outcomes both positively and negatively. The challenges that exist in communication between nurse-physician team members are centered on role perception and decision-making.

Role of the DNP Student

As the DNP student, I realized that ineffective communication skills among health care professionals are causing increased challenges in caring for patients. The ineffective communications negatively impact the quality of care provided to the patients and their families. The DNP essentials as described by (Smith et al., 2017) require that clinicians be groundbreaking, innovative, advanced leaders who are focused on improving and sustaining high quality care. The outcome of providing high quality care is dependent on

the skill set that the DNP scholar uses to bring an evidence-based approach to the communities and organizations that they serve (AACN, 2006). A key component of providing high quality care is conducting a risk assessment of the environment and collaborating with the appropriate party(ies) to ensure that the care needed is provided (Smith et al, 2017). Throughout this project, my role was to assess the literature and make recommendations to the executive nursing leaders and physicians on the acute care units the benefits of standardized, consistent communication during rounds to improve coordination of care with the intent of improving quality outcomes.

According to Shalala and Bolton (2012), DNP-prepared nurses demonstrate their expertise in designing improvement projects that save money and, most importantly, serve to improve quality of health care delivery. The reason for examining the practice problem addressed in this project is the high risk for preventable adverse events. Ineffective communication between nurse-physician teams contributes to errors, and with the lack of a standardized communication process, the risk increases. My current role in the facility is as a clinical nurse leader (CNL) who functions to improve outcomes in patient care. As a CNL, I function in the three spheres of practice: patient care, nursing, and micro-systems by improving clinical practice, patient education, and research. I work with health care team members and leaders to coordinate care, manage resources, and compile and evaluate data with a focus on quality, patient safety, and outcomes.

As a researcher, it is important for me to acknowledge the possibility of bias and the potential for researchers to bring their preconceptions into the research process; there is a need for me to devise strategies to address this potential issue and be aware of it

throughout the project. The personal motivation for this project is based on the need to create an environment where patients feel safe and can trust the quality of the care they receive. I believe that patients' basic right is to receive the highest quality care at any given time and not be subjected to errors or adverse events because health care workers failed to communicate effectively among themselves.

Role of the Project Team

Assessing the needs of the health facility is vital to the success of the project. Assessing needs will be an ongoing process and will involve the key acute care team member, physicians, and nurses in the development of strategies to address prioritized needs, role clarification, and allocation of needed resources for change implementation. The acute care team members will participate in meetings where the literature review and synthesis of the evidence for approaches to improve communication through structure, standardization, and consistency will be presented. The participation of the acute care project team will be essential to approval of a trial of any process change recommendations in the hospital.

The success of a change management process in a large organization is seen in four areas; the role model, is the team capable of doing the project, what mechanism are needed to reinforce the positive behaviors, and a clear understanding of the problem at hand (Taborga, 2012). A team may be compromised of many different personality characteristics; the opportunist who is self-oriented; the diplomat who needs to have a sense of belonging; the expert who uses logic and relies on rational efficiency; the achiever who focuses on long-term goals and is effective at delegation; the individualist

who is non-judgmental and is seen as a maverick; and the strategist who values action, is good at creative conflict, and balances short-term with long-term goals. Team structure that includes these differing personality characteristics can function collectively when shared social support, shared purpose, and vision are seen as important in achieving high quality work (Scott et al., 2017). Part of my role will be to engage and support team members, but success of the project will ultimately depend on the team of stakeholders coming to a shared vision of the problem and the means for addressing it. The communication gap between nurse-physician interprofessional team members that has impacted the care that they provide will require all stakeholders' commitment to change, and to the provision of high quality care.

Summary

My role as the team leader for this project will be to assess strategically the current communication among the nurse-physician interprofessional team and to present appropriate evidence-based alternatives to address gaps. The concepts, models, and theories to be used in support of the project will provide valuable information on how to address conflicts, develop a conceptual foundation for the project, and ensure that organizational support for teamwork and training is done effectively. In establishing shared objectives, each team member will be given an opportunity to aid in the overall success of the project, engage in productive behavior, and strengthen the efforts toward good patient outcomes.

Section 3: Collection and Analysis of Evidence

Introduction

The purpose of this project was to conduct a systematic review of the literature to support a recommendation for change in the communication methods currently used between nurse-physician interprofessional team members during rounds. The approach to the project was to establish or clarify the current state of best practice evidence. According to Algase (2009), empirical evidence draws not only on a researcher's experience with the topic but also on the research of others pertinent to the issue. The use of personal knowledge and research findings leads to interventions or nursing actions. The communication gap between nurse and physician has been well documented by many scholarly researchers and offers insights into the complexity of the dynamics among the nurse-physician interprofessional team members, which currently reflect personality traits, lack of effective communication skills, and lack of a standardized process. In critically reviewing the literature, I examined the strengths and weaknesses of each article to give validity to the systematic review and support any recommended changes in current practice. The role of the organization and its structure must be considered in any proposed changes and the methods for achieving these changes. In this section of the project, I reviewed the sources of evidence to address the practice-focused question of the project, the analysis and synthesis of the evidence, and the application for Walden University Institutional Review Board (IRB) approval for the project.

Practice-Focused Question

The practice-focused question answered by this project was "What are the best practices for standardized, consistent communication between nurse and physician health care team members?" To determine best practices, the approach to the practice problem was a systematic literature review and proposal of the ideal intervention(s) to change the culture in an acute care hospital setting. The potential social change and clinical impact are that the negative results from poor communication may be decreased or eliminated. Social change occurs more effectively when all stakeholders, including nurses, physicians, patients, and organizational leaders, have a role in making health care practice changes.

Sources of Evidence

The sources of evidence for this project were the current databases listing abstracts of articles on interprofessional teams. I searched the CINAHL, MEDLINE, and EMBASE databases for applicable articles published between 2000 and 2019. The search terms *interprofessional team, team collaboration, interprofessional communication, interprofessional health care team, competencies for interprofessional collaborative practice,* and *health care team roles and responsibilities* were used to identify relevant articles in the databases. I used a PRISMA flowchart (see Appendix C) to document the literature search process. First, I read abstracts of potentially applicable articles and retrieved the full text for selected articles. After reading the articles in full, I retained citations of the articles to be incorporated into the systematic review and presented them

in a table (see Appendix B). The level of evidence for each retained article was also documented in this table.

Analysis and Synthesis

The systematic review process allowed me to narrow my resources to key phrases using key word searches of the peer-reviewed literature. The project followed the DNP Systematic Review Manual and presented literature search results in narrative, flowcharts and tables. The decision makers in the facility and politics that determine available resources can enhance or negatively impact the health outcome of any program. In conducting this project, it was vital for me to work with leaders and stakeholders in the facility as they are able to identify their needs and offer solutions to address them. It was important to compare the needs across professional groups, for instance the physicians versus the nurses, when designing the project interventions.

It is important to highlight the issue of communication on an organizational level so that the appropriate stakeholders are involved in the change and implementation process. Ensuring that priorities are created along a time line that addresses short- and long-term goals and that the most appropriate tools are used in measuring the program's success or outcomes is also an important product for this project. The change process will be managed as the evidence-based information is disseminated. This management can be done by training champions for the program and ensuring that the intended audiences have access to the information. Finally, the acute care team members and I will determine the most feasible interventions to increase structured, consistent nurse-physician

interprofessional communication at the clinical practice site. These interventions will be presented to the project team and leadership for possible implementation at the site.

Human Subjects Protections

Because this project is a systematic review of the literature, no vulnerable or at-risk groups will participate in this project and no exclusion will be made based on gender or ethnic affiliation. There will be no financial benefits to participants (Smith, 2014). I will adhere closely to the guidelines for the protection of human subjects, and there are no anticipated ethical issues. Walden University IRB approval was obtained prior to initiation of the project (IRB approval number 10-03-19-0979811).

Summary

The goal for many health systems is to design programs that are patient-centered, standardized, and collaborative in nature. Communication during rounds in the health care setting can be complex, and for best outcomes important information should be clearly transferred between patients/families and health care team members. The systematic review of the literature will clarify the communication needs of the nurse-physician interprofessional teams and determine best practices to define patient/family engagement in rounding and foster a culture supportive of positive change. The quality and care of the patients require collaboration among all involved stakeholders to effect good care quality outcomes.

Section 4: Findings and Recommendations

Introduction

The clinical practice problem addressed by the project was the issue of inconsistent and ineffective practices and processes during rounds among nurse-physician interprofessional team members at an acute care hospital due to poor communication skills and lack of standardization processes, which have contributed to poor patient outcomes ranging from excess morbidity to death. The gap in practice was communication errors contributing to sentinel events as reported to the Joint Commission along with ineffective teamwork that has contributed to many medical errors (Pettit & Duffy, 2015). The purpose of the doctoral project was to conduct a systematic review of the literature to discover information on methods used to improve communication behaviors and standardize processes that are intentional and align with the team goals and the organization's mission.

The goal of the project was the recommendation of standardized communication methods to use in rounds that can be implemented through education on the clearly defined process. The goal for the staff was to ensure that they could competently evaluate the plan of care and initiate appropriate treatment using good clinical decision-making. The new standardized process of communication in rounds is expected to show a 5% improvement in communication skills within 1 month as measured by the patient satisfaction scores using the HCAHPS database and the National Research Corporation (NRC) database. The tool that I would recommend for this structured communication during rounds among the interprofessional team members would be a checklist that the

nurses would use to communicate with the physician. The checklist would contain information addressing (a) any overnight events, (b) barriers for discharge from a social or clinical perspective, (c) whether the patient is at his or her baseline regarding their respiratory status, (d) their mobility assessment need based on their get up and go scores, and (e) whether they are having adequate bowel movements as this could be a barrier for discharge. I would also recommend a checklist for the physician in his or her communication during the interprofessional rounds that would include why the patient is at the facility, the medical plan of care, and the anticipated discharge date.

Findings

The quality of patient-provider communication is an indicator of the wellbeing of the health care industry (Haywood et al., 2014), and health care professionals who acknowledge the importance of addressing the lack of trust, respect, and poor collaborative attitudes that persist in the health care system among nurses and physicians (Tan et al., 2017). The use of the Situation-Background-Assessment-Recommendation (SBAR) process, first developed for nurse-physician communication, offers "structure, predictability and consistency" when presenting patient information and allows the team members involved to use a format that is familiar to all. The SBAR has been shown to be an effective process in addressing the communication gap (Townsend et al., 2014).

Patients need to be active decision-makers in their care by being informed, and the interprofessional team has a responsibility to function cohesively to provide high quality care. Once patients are engaged in the care received and staff members provided the care respectfully, meaningful interactions can occur that set the foundation for high

quality care to be received and provided. Health care administrators are realizing that in efforts to coordinate care, as discussed by Malec et al. (2018), structured interdisciplinary rounds would benefit from increased staff collaboration. Higher educational skills acquired through a terminal degree have allowed the professional nurse scholar-practitioners to work within their communities to address health disparities, economic challenges seen in the communities, and conduct research to address practice issues; health care personnel need a toolkit on communication and core medical training requires communication skills (Abramson & Mizrahi, 1996; Deveugele, (2015)

The operational definition of *structured communication* is an agreed upon process between team members that uses concise language, conveys a discussion of a specific task, such as a plan of care, and involves data for clinical decision-making. *Sense making* as defined by Owen and Ashcraft (2019) involves interprofessional team members sharing their experiences as a means of arriving at an agreed upon decision based on a mutual understanding of the patient's plan of care. Within the interprofessional team, the group dynamics are centered on the way individuals act and react to changing circumstances. In building a collaborative team, the patterns of communication, patterns of influence, and patterns of dominance by team members, and how conflict is handled are strong indicators of the group cohesiveness. The conscientious integration of best practice evidence with clinical expertise and patient values with better communication and collaboration results in the delivery of high-quality, cost-effective health care. A careful examination of all aspects of the mutual decision-making between the

interdisciplinary team and the patient allows for the identification of concerns and for those concerns to be addressed in a timely (Malec et al., 2018; Owen & Ashcraft, 2019).

The definition of *interprofessional teams* is varying health care team members with their own clinical expertise working together to achieve a common purpose in clinical practice. Interprofessional communication and collaboration are best achieved by educating doctors, nurses, and other health care professionals together to use their unique professional backgrounds to provide all-inclusive care to patients across all health care settings. The patient is seen as the customer and the health team members are the ones providing the service (Bowen, 2016). Effective health care is driven by the team members in the interprofessional team, and it is important that the team members realize their worth in driving patient satisfaction. In providing service, health care team members can be viewed as "innovators, differentiators, coordinators and enablers" of that care (Bowen, 2016). The employees' roles as service coaches are encouraged in many health care setting in order to enhance the patient experience. The value that the patient places on their experience while being cared for is of paramount importance to the interprofessional team as the more cohesive the team is, the more positive the dynamics of the team and their effectiveness in delivering care.

The IOM discussed six aims for improvement in nurse-physician communication: patient-centered, effective, safe, timely, efficient, and equitable (Wolfe, 2001). My review of the literature found that TeamSTEPPS, which is a process of clear role definition, assignment of tasks, shared decision-making among interprofessional teams, and effective leadership, can result in effective patient care and a decrease in clinical

errors (see Clapper, 2018). Strategies for effective standardized communication among interprofessional teams include building interpersonal relationships, resolving conflicts, getting feedback in a timely manner, being respectful, being appreciative of your co-workers, and having a sense of humor (Clapper, 2018). It is also important that in nurse-physician relations each party has the opportunity to speak up and verbalize their concerns. In health care, perceived hierarchies between nurses and physicians and among other professionals in health care can affect the effectiveness of the team. Team members may not feel comfortable speaking up due to fear of rejection or feelings of intimidation (Clapper, 2018; Daiski, 2004). Good communication among interprofessional team members reduces these barriers and subsequently reduces negative patient outcomes through timely notification of concerns.

The dynamics of communication among interprofessional teams are impacted by many factors. There were adequate 'intervention studies' to assess solutions to RN-MD communication among interprofessional teams. The majority of the factors affecting effective communication were found within the micro systems (Bucknall & Hitch, 2018). The literature supported the need for medical students, nurses, and other health professionals to have preclinical classes together to improve interpersonal relations (Granheim et al, 2018). The use of technology sometimes has a negative effect on communication as the context can be lost in texting or e-mailing versus the face-to-face interaction.

I undertook the electronic search for structured communication using the following key word search terms: *communication and skills training*, *communication and*

patient decision-making, *team structure and communication*, *nurse-physician and communication, medical errors and ineffective communication*, and *positive nurse-physician communication and quality patient outcomes*. Appendix C shows the assessment of the literature and what was included or excluded in the studies selected. The databases used were MEDLINE, CINAHL, OVID, and Walden Library. The search term *communication and professional teams* yielded 1815 results as follows: MEDLINE (n = 538), CINAHL (n = 370), Academic (n = 323), Citation Index (n = 293), and Complimentary Index (n = 291). The search term *structured communication and interprofessional teams* returned 18 sources as follows: MEDLINE (n = 4), CINAHL (n = 4), Academic (n = 4), Complimentary Index, (n = 3) and PsycINFO (n = 3). Among the 70 articles reviewed, 11 were included in the synthesis of findings, which included five abstracts with 10 full text articles; six of the synthesized studies were evidence level C; two were level E; two were level D, and one was level A as described in Appendix B. The design of the studies varied from descriptive design, mixed methods pre and post surveys, observational studies, peer-reviewed articles of both qualitative and quantitative data, and integrative studies. Five studies were excluded as they focused mainly on collaboration and less on communication within the interprofessional team structure that included other disciplines apart from the nurse-physician interprofessional team for this review. Appendix C is the flowchart showing the selection of articles for the review.

The majority of the studies for the synthesis focused on evaluating how power relationships that exist between roles can lead to poor collaboration and communication. Additionally, the notion that medical and nursing students that are institutionalized or

trained together increases their interpersonal relationships and therefore allows for more effective communication (Matziou et al., 2014; Tan et al., 2017). The IOM recommendation of structured communication during handoff between interprofessioanl teams that uses a checklist also decreases the risk of poor patient outcomes. Structured communication can be influenced by role differences (Bucknall & Hitch 2018; Daiski, 2004), hierarchy (Clapper, 2018; Daiski, 2004; Matziou et al., 2014), individual communication skills (Clapper, 2018), training received by the healthcare team member (Deveugele, 2015; Granheim et al., 2018; Tan et al., 2017), organizational and unit culture (Clapper, 2018; House & Havens, 2017; Tan et al., 2017), and a formalized or standardized tool (Adams, 2018; Deveugele, 2015; Townsend-Gervis et al., 2014)

Sources of Evidence

The sources of evidence for this project were current databases, listing abstracts of articles on interprofessional teams. The CINAHL, MEDLINE, and EMBASE databases were searched for applicable articles published between 2000 and 2019. The search terms *interprofessional team, team collaboration, interprofessional communication, interprofessional health care team, competencies for interprofessional collaborative practice,* and *health care team roles and responsibilities* will be used to identify relevant articles in the databases. In completing this systematic review, the evidence demonstrated that poor communication among interprofesional team increased the risk of poor patient outcomes.

In promoting positive social change, Walden University has proposed that through “education of its scholars-practitioners, increasing access to higher education and

applying research results to identified practice problems positive social change occurs" (Walden media, Laureate education). In addition, the issue of poor collaboration and communication (Pettit & Duffy, 2015), is described by the IOM in its 1999 report, *To Err is Human: Building a Safer Health System* as a significant issue that affects patient outcomes. The literature supports that nurses with higher degrees are more likely to be better at collaboration and communication skills. The culture of the units influences nurse-physician collaboration through their communication practices and the frequency of nurse-physician interactions, which can be facilitated by a nurse team leader. Perception of shared decision-making influenced how communication was actualized (Owen & Ashcraft, 2019; Portoghese et al., 2012). Health care organizations need to examine the organizational structure and the information system that affects communication. Interprofessional teams are seen as a means of addressing communication and collaboration issues in the health field. The potential solutions to addressing the barriers between nurses and physicians can be achieved through applying the research findings.

What would make this project a success is its easy reproducibility. The initial goal of the reduction of errors of communication during interdisciplinary rounds by a rate by 5% is realistic and possible within a 1 month timeframe. Creating a process map that details each team member's role in the interdisciplinary team structure during rounds and ensuring that there is a dedicated time for rounds would be paramount to the success of the project. In addition, the team must work on ensuring accountability toward the projects' success. The focus of this systematic review was to see how a standardized

process of communication directly impacts health outcomes. The medical-surgical unit where this project would be conducted has a skill mix of nurses that ranged from new graduates with less than 12 months of experience (75%), to expert nurses with over 2 years of experience (25%); medical interns with 6 months in practice (50%); residents with 1 year of experience (25%) and supervising attending physicians with multiple years of experience (25%). This unit has a high number of nurse-physician team members that are learning their respective roles together as they work to provide care to the medical-surgical patient population. The patients included Medicare, Medicaid, and self-pay individuals with diagnoses ranging from diabetes, high blood pressure, stroke, and abdominal pain. The unit is used as a teaching unit for both nurses and physicians and as a result does have a tremendous amount of support from both the medical and nursing executives.

Recommendations

Recommendations for Resource Use

The need for health care and access has been a battle that has, and will continue to be waged by many entities, policy makers, health care systems, communities, and individuals. Health care resources are defined as anything that is used to provide health care services, which can be in the form of materials, personnel, facilities, and finances (Ranson & Olsson, 2017). Due in part to the unique setting of the unit, the goal of increasing the communication skills between nurses and physicians through a standardized format during interdisciplinary rounds was well received. The distribution

of health care resources that involved time away from the unit for the project was conducted through the medical and nursing service lines.

According to Ranson and Olsson (2017), resources are allocated at the policy level and through health insurance plans, government funding mandates, clinical practice guidelines, policies within a health system, and legislation. Resources included expertise of a project improvement specialist who offered suggestions on how to improve the standardized process, use of the A3 template, visual aids in a process map format, and a Gantt chart. All these varying tools and resources were used to ensure that project team members were able to access the resources and were given the option to choose what they are willing to participate in as the team worked on shared decision-making and effective standardized communication. Ranson and Olsson (2017) posits that access to equitable and reasonable care is important as healthcare team members work collaboratively to ensure safe care and that this is achievable through appropriate allocation of resources.

Recommendations for Evaluation

Program evaluation is conducted to improve the program itself, to reveal to the organization the value of the program, and to validate that the training that has occurred has resulted in the desired behavioral changes. The evaluation of a program occurs during the program (formative) or after the program (summative) and also assesses areas for future improvements (Hanes, 1977). In evaluating a program, it is just as important to keep in mind the objectives of the program and to assess its alignment to the goals of the program. The model that best evaluates this program will assess the underlying cause-effect relationships that are causing the social issues the intervention was designed to

address (D'Agostino, 2001). The model will need to assess the sociocultural factors that have resulted in the health issue occurring in this population and are called the impact model. An impact evaluation is concerned with the extent to which a community's needs have been met Kettner et al. (2017). The research/hypothesis question is, "What are the best practices for standardized, consistent communication between nurse and physician health care team members during rounds?

The intervention needed to impact this issue is standardizing the communication process among the interprofessional team during interdisciplinary rounds. The interventions needed to be sufficient to address the problem or gap in practice that led to poor patient outcomes. It will also be important to ensure that the interventions were ethically sound; and that there was program accountability. These efforts will be achieved through a collaborative approach with key stakeholders, decision-makers from both the medical and nursing executives, and the bedside report participants. The evaluation will allow for successful programs to be adapted to the current environment or to be used for other communities.

The evaluation plan for the standardized communication program should be conducted at varying intervals to improve the program effectiveness. The assessment of the interventions for project effectiveness and workability, or making a difference, and additionally is the program sustainable and scalable is recommended. The researchers Kennedy et al. (2014, p. 2) discussed that "evaluations confirm worth, value, opportunities for improvement, accreditation, and accountability and ultimately whether a program should be kept or discontinued." Hodges and Videto (2011) discussed using

different types of evaluation modalities for program evaluation. The impact of this program can be assessed using the logic model.

A logic model is a graphic or visual representation of the relationship between the program activities that depicts the if-then principle. The logic model presents the inputs, outputs, and the progress of the program where the intended objective of the program is clearly depicted (Hodges & Video, 2011; Kettner et al., 2017). The health care environment has many risk factors for noncompliance due to the fact that many personality types and internal and external stressors exist in teams. In the article by Basinga et al. (2011), the researchers posited that better quality care improves health outcomes through access to care, increased communication, and knowledge sharing to facilitate good decision-making.

Review of anticipated outcomes of the project evaluation is conducted at varying points of the intervention implementation to determine if the program objectives are being met. Measuring and data collection of nurse-physician communication compliance for patient perception of care will be an effective method to assess for program effectiveness; it is also important that the appropriate data are collected as discussed by Holden et al (2019), and that all variables are characterized appropriately. Data are used for three main purposes, which are accuracy of information, validating the integrity of problem being addressed, and creating a complete picture of the situation being addressed (Ruusmann & Maran, 2013). A survey can be used to track pretest and posttest knowledge of the participants in the program.

Recommendations for Systems Level Interventions

Using the appropriate information to think more on a systems level is essential in this journey. Kettner et al. (2017) discussed that the three major planning methods used in providing human services are strategic planning, management planning, and program planning. The effectiveness of the program requires interventions that are geared to meeting the needs of the persons or population being addressed. The theory to be used in the program planning serves as a guide or hypothesis to the problem identified, and using the correct theory is important to the development of the program, and the appropriate interventions. Developing interventions from a clinical standpoint is very similar to a program prospective, but the program planning has unique features, and the use of a systems framework is important in the design of the program.

The evaluation that occurs during a program is called a formative process and the evaluation conducted after the program is called the summative process (Hanes, 1977); which can be used to assess areas for future improvements. In evaluating a program it is just as important to keep in mind the objectives of the program and to assess its alignment to the goals of the program. Hodges and Videto (2011) discussed the need for primary and secondary data to aid in program planning. Data can be obtained through databases that are state or nationally run (e.g., Divisions of Social Services, Centers for Disease Control and Prevention [CDC], and the NRC, Health statistics Bureau) and are considered secondary data. Primary data are directly obtained from the population by surveys, or questionnaires. In collecting data for this program, both qualitative and quantitative data on communication are necessary from an interpersonal perspective. The

HCAHPS and the NRC surveys will be the primary data sources to determine if the project to improve communication was successful.

Communication is interactive, occurs in real time, should be articulated clearly on the topic, and should include verbal and non-verbal behaviors that are congruent. Communication employs listening with an open mind and been able to synthetize and link ideas together. In the interprofesional team behavioral adaptability requires utilizing skills and knowledge sharing to ensure effective communication is occurring (Byrne, 2019; Clapper, 2018).

Data collection across most studies reviewed was heavily reliant on secondary data sources. Employing secondary data can be entirely adequate in some evaluations; however, it inevitably introduces the possibility of selecting data based on what is currently available rather than what would be ideal for the evaluation. As macro or structural level policy change is rarely associated with any specific data collection efforts about health equity effects, these remains a challenge in outcome evaluation, and stresses the need for high-quality, linked nationally-representative and routinely collected longitudinal databases. The reality, nevertheless, is that the quality and quantity of data currently collected is insufficient to execute these advanced analyses for many complex policy outcome evaluations. In the area of structured communication, the hospital's policies for communication among team members are centered on building professional reliable relationships. A recommended method to collect data for this type of project is a pre and post survey design.

It is important in evaluating the program that the interventions are also assessed for moral concerns and that the program is accountable to the participants and the staff. These efforts are achieved through a collaborative approach. The evaluation allows for the program to be adapted to the current environment, or to be used for other communities once it is proven to be reliable and valid. The researchers Kennedy et al (2014) discussed that evaluations assess opportunities for improvement; the worth and value of the program; accountability; and, ultimately, help determine if a program should be kept or discontinued. The formative evaluation plan to be used in this program will assess for what are the most relevant parts of the program to keep and what may be considered as ineffective. The formative evaluation is able to guide strategies for development of the program, while the summative is able to assess for the impact of the program. The impact of the program can be assessed during the evaluation period where the assessment is conducted to determine if the behavioral changes are attributable to the interventions undertaken in the program. Lau (2009) posited that the benefits of using an evaluation framework are that the framework addresses if the expected quality of the services was met, and the overall net benefits of the program realized. It is also important from a business prospective to ensure that the qualities of the objectives are effective enough to achieve the outcome. The steps that are needed to achieve those outcomes are best achieved in a logical order using a vision as an underlining principle for all participants so they are able to see the pathway to be travelled; this includes a needs assessment, developing of a timeline, connecting with key stakeholders and getting executive support for any resources anticipated.

Contributions of the Doctoral Project Team

The timeline for evaluation of the goals, objectives, and outcomes of the program requires creating a Project Team; a shared vision and purpose for the change; a discussion of the problem and the opportunity for change; creation of interventions to achieve the change; training of the trainers; development of a plan to ensure effectiveness of the interventions; development of communication methods to disseminate the information, and an evaluation of the effectiveness of the implementation. Barasa et al. (2015, p. 1) reported that an evaluation framework can provide "concrete guidance to priority setting processes, highlight specific opportunities for improvement and determine whether priority setting practice has improved." This evaluation process is systematic and involves data collection and analysis of the data which are geared towards assessing the value of the program or policy.

With so many differing health systems across the nation, there is failure to standardized and simplify processes in delivering, and reporting medical care, along with increasingly complex technology, which has resulted in a high number of medical errors. The human factors and the human environment in using the information system also is a challenge. Some users find it difficult to use the computer (human factor), while others are working in complex systems (human environment) that impedes the workflow and results in negative attitudes to IT Ahmadian et al. (2017). I have to conduct a thorough assessment of both the environmental and human factors in planning and implementing change with the use of information technology. Is the environment ready for the change

and does it have the resource that I will need – leadership, effective data systems, properly trained information technologist, and finances.

Health information systems are designed to collect, store, protect and deliver data to those clinicians who need it at the time of clinical decision-making. For my proposed EBP proposal we have the appropriate people at the table as involved stakeholders – bedside clinicians, information technology experts in design of computer information systems, pharmacist, infection preventionist, and executive support. Having these stakeholders involved will positively impact the project as they can work collaboratively to address issues that might arise from all potential departments. The organization has given its support by having an executive lead assigned to the project that is able to make changes based on suggestions from the team that requires an executive sign off. Finally, with the IT department involved their expertise is valuable in the designing of the program so that the workflow is beneficial for all stakeholders. Health IT standards as defined by Ball et al. (2011) requires arranging of the data, ensuring that the information being transmitted is secured and that the clinical content is accurate.

Safety measures initiated to assist individuals, especially someone with authority, is important in understanding how people experience errors and how change based on evidence-based information can reduce those errors. Building a culture of safety requires a commitment that is practiced on a daily basis to ensure it becomes the norm. A safe culture is best seen when it is built from an organizational standpoint and involves its leaders who are properly trained; and leaders who are committed to the culture of safety Kanerva et al. (2017). Essentially, high reliability organizations with safe environment

are correlated with leaders who are promoting and practicing safe processes (Dempsey & Assi, 2018; Kanerva et al., 2017), and are seen as an interdependent connection between the patient and RN experience of care. Patient safety is a common ground for nurses to be in constant dialogue among themselves and the rest of the health care team from an interprofessional standpoint.

Strengths and Limitations of the Project

Commitment to change requires leaders who are skilled at communicating the expectations of the change and able to have a crucial conversation about team members who have not made that commitment. The researchers Postoghese et al. (2012) discussed that leaders who are capable of building good interpersonal relationships with the people that they lead are more likely to have positive outcomes in the change process or project that has been undertaken. The authors also discussed that the commitment to change is of two categories, that is, unidimensional and multidimensional. Leaders who are engaged in unidimensional commitment are viewed as on a personal level while multi is on an organizational level of commitment to the change process. A leader or stakeholder who sees the value in the change process is able to support other members in the change process. Effective communication skills are very important for leaders to develop in leading their team to success in any change process.

Stakeholders in any project or process change require a commitment for the goal to be achieved. The role of the stakeholder is just as important as the vision and mission of the project; Byrne (2019) stated that stakeholders should be full participants in needs assessment, intervention development, and serves a bridge for policy or rules

development as indicated. Leaders are reported to be instrumental in helping an organization succeed with its change initiatives (White et al., 2016, p. 117). Engaging leaders especially the transformational leaders in evidence-based changes helps to engage the other employees in receiving the information been disseminated. Additionally, when leaders' voices are integrated in the care delivery and design of new projects its potential for success increases. It was important to know who were the facilities' system and local leads and seek them out to get their buy in to the proposed project.

Potential challenges for knowledge integration may be seen in change that is not properly aligned with the systems strategic goals or using champions who are not engaged in the change process. Institutional policies and culture may impede knowledge translation (Mohammad & Pathirage, 2018), along with lack of trust of institutional policies; lack of incentives; lack of time for personnel to participate in the change process and dissemination of information; and general resistance to change itself. These challenges are best managed with accountability built into the project, use of a timeline so that participants are aware of what comes next and their assigned tasks, and clarifying any misconceptions about the project in a timely manner; also managing conflict among participants.

Resistance to change is seen from two angles, personal and social, as discussed by Shimoni (2017). Within an organization, the social interactions and relationships influence an individual's attitude toward change and their relationship with the leader or person in power initiating the change. Shimoni (2017) posited that poor or ineffective communication can contribute to the resistance to change. Some individuals may see

change as a threat to their routine or current way of life and, therefore, finds it easier to say no to new ideas than to embrace new ideas. Organizational change brings with it an additional element of disseminating the evidence of why the change is needed or the best. One method of reducing resistance to change is to have champions or leaders of the change wherein the staff can have someone who they see as been close to them. Having these leaders involved in planning, dissemination, and evaluation of the change is vital to increasing the opportunity for success.

To achieve the expected project outcomes, I will hold a collaborative meeting with all the stakeholders to determine system goals, barriers to implementation, and methods to address effective communication and create a collaborative culture. Next, I will devise a plan to motivate the stakeholders, utilize appropriate resources, review current procedures, and formulate the new procedures. I will assign specific stakeholders to implement specific tasks to achieve the goal in the expected time frame. Scheduled weekly meetings were conducted to assess the implementation of the standardization communication and collaboration project, getting updates, and addressing any barriers and resistance to the change. Standardization of communication and a collaborative culture will be attained by using specific measures like clear definition of the project goals and enlisting appropriate stakeholder and administrative sponsor support. Keeping the above factors in mind the need for a structured interdisciplinary rounds process among the interprofessional team members will be needed to allow for effective interactions among the many varying personality types present on the health care team.

The literature supports that nurses with higher degrees are more likely to be better at communication. The culture of the units influences nurse-physician communication and the culture is affected by the frequency of the nurse-physician interactions, which can be facilitated by nurse team leads during interprofessional interactions. A perception of shared decision-making influences how communication is actualized (Thompson-Leduc et al, 2015). Health care organizations need to examine their organizational structure and information systems that affect communication. Interprofessional teams are seen as a means of addressing communication issues in the health field. Some of the weaknesses noted were the lack of adequate intervention studies to assess solutions to nurse-physician communication. The literature supports the need for medical students, nurses, and other health professional to have classes together before clinical experience to improve interpersonal relations (Granheim et al, 2015).

Some of the gaps noted in effective communication are centered on role perception and decision-making. Health team roles are accustomed to working in silos which can affect workplace morale, patient safety and negative outcomes, even death. The IOM recognized the need to address the issue of poor communication among interprofessional teams and therefore proposes that interprofessional teams are more favorable to reducing negative patient outcomes (Wolfe, 2001). Interprofessional collaboration (Parikh, 2013) is a priority for The Council on Graduate Medical Education (COGME), and the American Association of Medical Colleges (AAMC), and these organizations are working on increasing interprofessional simulation in medical

academia, and addressing curricula to offer registered nurses and pharmacists didactic and shadowing experience with medical students.

Summary

An affirmation of the need for standardized communication among nurses-physician to reduce the risk of poor patient outcomes was noted in this systematic review. The need to bridge the practice gap is of vital importance as the safety of the patients is significant both for the patient themselves and the institution providing care by its healthcare team members. The synthesized principles of effective communication and the use of an appropriate theoretical framework is needed to evaluate the appropriate interventions to address this health care problem at the aggregate, systems or organizational level. As noted, institutional policies and culture may impede knowledge translation, lack of time for personnel to participate in change processes and how the information form a project is disseminated. An effective leader such as the transformational leader is reported to be able to facilitate changes in an organization. Effective standardized communication among the interprofessional team of nurse-physician is interactive, requires shared decision-making, mutual respect for each team member and a shared vision of high quality patient care.

Section 5: Dissemination Plan

Introduction

Professional relationships are used to disseminate a project, which can be in the format of Podium or poster presentations, use of journals or manuscripts, piloting the information on a small scale and then spreading it further, and using professional forums like conferences. Additionally, providing those with power and authority an executive summary or proposal of the project along with information about return on investments helps them to be able to see whether it is feasible in allocating resources in both money and personnel. Data are used for three main purposes: ensuring accuracy of data; validating the integrity of the problem been addressed, and creating a complete picture of the situation been addressed (Ruusmann & Maran, 2013), so it is important that the appropriate data are collected (Holden et al., 2015) and that all variables are characterized appropriately. Providing stakeholders with data helps them in their decision-making and in the proposed evidence-based change.

To disseminate the information from the systematic review of the literature, I plan to schedule a presentation to the health system leaders, the medical-surgical unit that was involved in the discussions on standardizing communication during interdisciplinary rounds and the medical champion within the first month after successfully concluding the capstone project. The presentation of the information will be done with the use of a PowerPoint presentation, which will allow for the presentation of the synthesized information. It will also be important for me to synthesize this information and present it in the health system's quarterly professional article. Lastly, I will also submit the

information for publication in an accredited journal such as the *Journal of Communication in Healthcare*, or *Leadership in Healthcare Services*, or the *Journal of Nursing Administration*.

Analysis of Self

The health care system is constantly changing and evolving with different needs of the population that it serves. Society demands that health care personnel keep abreast of the changes, remain flexible and creative, and have a vision for themselves as to who they are and how they fit into the different roles that they have. As a DNP scholar, I believe that I have an added commitment to ensuring that I use my professional skills and added education to improve the community in which I live. I need to continue to foster a culture of collaboration, collegiality, advocacy, and professional development through continued participation in evidence-based research.

The personal knowledge gained from these new experiences allows me to make a difference in my interpersonal communication with my patients at work. It has also allowed an increased insight into project management and has added value to this capstone project. The questions that I have asked, are "Did I achieve what I set out to do? Did I improve what I intended? Did I raise the bar for myself?"

When I started this journey over a year and a half ago, my goal was that of fostering a culture of collaboration, collegiality, advocacy, and professional development through servitude of a simple kind by volunteering in health fairs and community activities that touch the lives of ordinary people and networking with colleagues on the same professional level. I believed that an advanced degree would increase my

networking capabilities and broaden my community outreach as community service or volunteerism allows me to continually develop special bonds with the population being served while increasing the social awareness and responsibility of the needs identified. Ultimately, I will be able to continue to be a crucial contributor to my community as a healthcare provider at the end of this journey as there are many opportunities to participate in and to be part of evidence-based research that are positively impacting the lives of the population that I serve.

The DNP journey has afforded me the ability to build on high-quality relationships within the organization, improved my work attitude, and increased my organizational support, job satisfaction, and self-efficacy. As a project manager, I have gained the added skills of critically thinking of the needs of the stakeholders and how to do that assessment effectively due to the complex nature of the project or the stakeholders themselves. I have improved in my interpersonal skills but still see an opportunity to work on bridging the gap of engaging stakeholders. I came to acknowledge that one of the things that mattered to me is having a sense of belonging as I work on forming that high-quality relationship with my organization and fellow colleagues. Given my personal target of successfully completing the DNP program, the journey has been both rewarding and stressful at times in trying to meet those discussion deadlines and ensuring that my discussion posts are substantive enough. I have reaffirmed the importance of time management and that of organizing my tasks so that I can have a balance between my work life, school life, and personal life.

The health system that I work for is a complex one comprised of eleven hospitals and numerous outpatient healthcare facilities. Managing complexity in problem solving requires a multimodal approach (Zhu, 1999) and is very relevant in complex health systems. The ability of DNP practitioners to break a complex problem into manageable pieces to ferret out the problem is among the leadership and management skills needed to be an effective practitioner. One of the lessons learned is that effective communication on all levels is a pivotal area that can determine the effectiveness of any project. Storey et al. (2019) stated that the dissemination of evidence-based information is best achieved by collaboration and the use of academic experts or champions. In complex systems, personal, organizational, and technical aspects are separate yet interconnected and require bringing each area of a project together to problem solve (Storey et al., 2019).

Health care systems are made up of many departments and structures: finance, environmental or engineering, healthcare providers, and patients to name but a few. All these entities make up a complex system in which a disciplined approach is required to address problems and implement solutions (Manuele, 2019) in order to maintain quality and safety. I have affirmed that, in planning and implementing change in a complex health system, a systematic approach is needed. Systems thinking is the ability to see the global picture of the issue at hand (White et al., 2016). The use of theories to assist in forecasting (Hodges & Videto, 2011) the behavior of the population been studied or the issues to be addressed is also an important aspect of project planning. I was able to conduct a needs assessment based on the cultural context of the issues, social factors, resources available, and the role of the citizens, stakeholders, government agencies, and

private sectors in the communities in which the evidence-based information will be disseminated (see Ventres et al. 2018). Another important lesson learned is that the policymakers and politics that determine available resources can enhance or negatively impact the health outcome of any program.

Building collaboration among interdisciplinary team members as we strive to positively impact the care of our patients is one area of professional growth that needs constant attention and this was one area that I saw my own personal growth. The success of any program depends on key stakeholders in the community or executive sponsor who are invested in the success of the program. These team members need to have effective skills and abilities that complement the program purpose, have diverse skills that can help to build a successful program, and be committed to the common vision and mission of the program. As I grew professionally during this time, the commitment and support given to me by my leaders was rewarding as it validated that my organization was indeed working on world class care that not only involved its patients but also their employees. .

Summary

Effective communication among interprofessional teams using a standardized format is significant in reducing the risk of errors and assists in shared decision-making among the interprofessional teams. In the need to provide evidence-based nursing to drive quality care, EBP is best received by the staff if it is presented in a cause-and-effect process. Because quantitative research is objective in nature, it allows for factual presentation of the evidence and is a logical, objective process by which a researcher analyzes the cause-and-effect of relationships and uses data or numbers to measure the

outcomes of a theory. On the other hand, qualitative research is subjective and based on the researchers understanding of the theory in question. Qualitative research relies on a shared vision or interpretation of the information (Gray, Grove, & Sutherland, 2017). The theory practice gap for communication among interprofessional teams required a multi-disciplinary approach and the evaluation of both quantitative and qualitative data throughout the systematic review. Inferential statistics is making judgments on the possibility that the conclusions drawn from a sample of population under study can be used to make general assumptions (Gray et al., 2017; Polit, 2010). Inferential statistics also examine the relationship between variables and supported the evidence-based concept that improved standardized communication skills are effective in producing high quality care. The use of a systematic approach is also effective for applying Donabedian's model of structure-process-outcome as the lack of a standardized process increases the risk poor patient outcomes. The theory of planned behavior, which focuses on motivation, perceived attitudes, and behavioral control is also applicable in promoting the benefits of standardized communication among interprofessional teams during interdisciplinary rounds.

Effective leadership is very significant and of a critical nature for the success of any organization (Spinelli, 2006). To disseminate evidence-based information into practice requires leaders that are capable of bridging the gap between the evidence, and resistance to change. A theory of change is seen as the foundation that is used as a forerunner for an intervention, and leads to the organizations mission or outcomes (Dhillon & Vaca, 2018), and are typically used at the organizational level. Leaders are

needed to move change forward by engaging the employees in the change process, and the translation of evidence into practice.

Inter-professional communication is a very complex phenomenon. There are many different variables that affect the health care team and how they interact with each other. Our communication skills are also influenced by our personality traits. Trait theory which is also known as dispositional theory is a method of assessing human personality and behavior. The theory of trait can be used in the practice problem of inter-professional issues surrounding communication with regards to care coordination for patients with co-morbidities that requires many consultants. The relationship between theory and practice as described in this article by the authors (Kovach et al., 2010) stated that the personality traits of conscientiousness and emotional stability predict job performance for multiple occupations. Keeping this in mind it is feasible to see that personality traits are a strong factor in job performance and satisfaction. The effectiveness of collaboration among team is seen in shared decision-making during care planning. Effective communication that is structured in nature also improves trust between team members, job satisfaction and reduces negative patient outcomes. Each role in the inter-professional team has their own unique strengths that they bring to holistically take care of the patient. In an interdisciplinary team they are seen as more cohesive in their role and the families perceive them to be more patient and family centered. Systematic reviews offered suggestions on the importance of standardizing the transition of care which allows for healthcare team members to pass information among themselves that is relevant in decreasing miscommunication (Lean et al., 2018). Addressing physician and other team

member behaviors that creates a hostile work environment builds a collaborative approach to decision-making (Helmchen et al., 2016; Camargo et al., 2012). Regulatory bodies have addressed policies on communication standards (Gallagher et al., 2016). The likely benefits to addressing poor communication among inter-professional teams of nurse-physicians are the reduction of medical errors, increased patient outcomes, and increased nurse satisfaction.

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Appendix A: Search Terms

Key words	Major authors	Inclusion criteria	Exclusion criteria
Implementation of a structured rounding tools for interprofessionals	Adams, H, A.	Medical residents Male and female interprofessional team 18-99 years; patients 13-18 years	Nursing students
Connection, Collaboration among healthcare professionals, Complex adaptive systems	Bucknall, T, Hitch, D	Complexity theory, CAS concept, Knowledge translation theory, Social network analysis, Process models, determinant frameworks, classic theories, implementation theories and evaluation framework	
Interdisciplinary communication and healthcare professionals, Organizational structure, communication, teamwork	Clapper, T. C.	Teams, Leaders, Advocacy tools – stop the line, check back, two challenge rule	
Communication, dis-empowering relationships,	Daiski, I.	Hospital staff nurses - male and female	
Communication and training, communication and skills	Deveugele, M.	Healthcare students	
Perceptions and communication	House, S., Havens.D.	Operating room, emergency department, intensive care, neonatal intensive care, obstetrics gynecology, oncology units and medical-surgical units	No analysis of RN-MD collaboration (n=7). Analyzed medical student's attitudes toward RN-MD collaboration (n=2). Intervention study to improve RN-MD rounds (n=2).
Communication and collaboration	Granheim, B.M., Shaw, J.M., Mansah, M.	Undergraduate nurses, simulation, peer reviewed articles, schools of nursing	.Lack of undergraduate nursing students, lack of simulation or IPL online simulation
Collaboration, shared decision-making, communication	Matziou, V., Vlahioti, E., Perdikaris, P., Matziou, T., Megapanou, E., Petsios, K	Nurses and physicians, voluntary participants, nurse-physician ration 1:1	
	Parikh, R. B.		
Nurse-physician communication	Tan, T. C., Zhou, H., & Kelly, M	Fully trained MDs regardless of rank, Fully trained RNs	Nursing and Medical students. Communications with other health care personnel were not included in the study. Posters, conference, editorial on communication. Limited to English studies only.
Communication, IDR, structured communication	Townsend-Gervis, M., Cornell, P., Vardaman, J.M.	Staff nurses, physicians, medical-surgical unit, dieticians, pharmacists, social workers, case managers	
Structured Communication	Turner, C. J., Hass, B., Lee, C., Brar, S.,Detsky, M. E., Munshi, L	ICU MD, nurses, allied health professionals, and MD on the surgical team	

Appendix B: Analysis of Literature

Citation	Conceptual framework/ theory	Main finding	Research method	Strengths of study	Weaknesses	Level of evidence
Adams, H. A. (2018). Implementation of a structured rounding tool for interprofessional care team rounds to improve communication and collaboration in patient care. *Pediatric Nursing, 44*(5), 229-246. Retrieved from https://www.pediatricnursing.net/index.html	Concept on communication	Improving communication with a structured tool improves patient outcome	Survey	Findings showed a correlation of structured communication improves patient outcome. Replication of the study with a larger sample size supports the use of structured communication.	Convenience sampling, small sample size, small inpatient pediatric unit, and inconsistency in the completion of pre- and post-surveys by pediatric medical residents, which led to limitation of the analysis of the data. Study did not examine patient satisfaction interprofessio-nal rounding benefits	Level C
Bucknall, T., & Hitch, D. (2018). Connections, communication and collaboration in healthcare's complex adaptive systems: Comment on 'using complexity and network concepts to inform healthcare knowledge translation.' *International Journal of Health Policy and Management, 7*(6), 556. https://doi.org/10.15171/IJHPM.2017.138	Complexity Theory	Priorities for future research needed in the relationship between meso, and macro factors regarding collaboration. More qualitative research is needed to understand the complex relationship that occurs with human interaction.	Literature review	Health care organizations need to examine their organizational structure and examine cultural divides between disciplines that affects collaboration and communication.	The majority of the Factors affecting collaboration and communication was found within the micro systems	Level E Review
Clapper, T. C. (2018). TeamSTEPPS is an effective tool to level the hierarchy in healthcare communication by empowering all stakeholders. *Journal of Communication in Healthcare*, *11*(4), 241-244. Retrieved from https://doi.org/10.1080/17538068.2018.1561806	Communication	The culture of the units influences nurse-physician collaboration and the culture is affected by the frequency of nurse-physician interactions. Perception of shared decision-making influenced how communication was actualized. Hierarchy needed in some clinical situations	Review	Similar findings noted in previous study which supported that effective communication is still needed.	Lack of adequate intervention studies to assess solutions to RN-MD communication and collaboration.	Level E Expert opinions

(table continues)

Citation	Conceptual framework/ theory	Main finding	Research method	Strengths of study	Weaknesses	Level of evidence
Daiski, I. (2004). Changing nurses' dis-empowering relationship patterns. *Journal of Advanced Nursing*, *48*(1), 43–50.	Hierarchy difference	Nurses perceived to be an oppressed group. Hierarchy exist between groups – RN-MD, RN-Murse manager, Bullying facilitates and reinforces domination from one group over another	Interview with open ended questions and thematically analyzed.	Male participants showed no gender bias for the nursing profession	All participant were volunteers and all educated beyond the basic requirements	Level D Descripti ve and Explorat ory
Deveugele, M. (2015). Communication training: Skills and beyond. *Patient Education & Counseling*, *98*(10), 1287–1291. https://doi.org/10.1016/j.pec.2015.08.011	Communica-tion skills	Healthcare personnel need a toolkit on communication. Core medical training requires communica-tion skills	Reflective literature review	.Historical prospective view given. Kirkpatrick assessment needs discussed	Lack of consensus on definition of core skills	Level D
House, S., Havens, D. (2017). Nurses' and physicians' perceptions of nurse-physician collaboration. The Journal of Nursing Administration. 47(3), 161-171. Retrieved from https://doi.org/10.1097/NNA.0000000000000460	Ineffective collaboration; communication, shared decision-making, teamwork	The culture of the units influences nurse-physician collaboration and effective communication and the culture is affected by the frequency of nurse-physician interactions. Perceptions of shared decision-making influenced how collaobration and communication was actualized.	Descriptive randomized survey	Similar findings noted in previous study which supported that effective communication and collaboration are still needed.	Study conducted on one unit and one hospital therefore the results should not be generalized. Exclusions of certain studies due to the search mechanism used leading to selection bias. Use of convenience sample that was small. Lack of adequate intervention studies to assess RN-MD communication.	Level C Systemat ic review

(table continues)

Citation	Conceptual framework/ theory	Main finding	Research method	Strengths of study	Weaknesses	Level of evidence
Granheim, B. M., Shaw, J.M., Mansah, M. (2018). The use of inter-professional learning and simulation in undergraduate nursing programs to address inter-professional communication and collaboration: An integrated review of the literature. Nurse Education Today, 62, 118-127. https://doi.org/10.1016/j.nedt.2017.12.021	Interprofessional communication	Inter-professional learning (IPL) was advantageous in communication and collaboration in undergraduate nursing programs. Student clinical confidence improved with inter-professional learning and simulation. IPL and simulation is not standard in nursing schools.	Peer review articles of quantitative and qualitative literature. Had pre-post study design for the simulation with use of surveys.	IPL is seen as a means of addressing communication issues in the health field.	Search engine used predominantly had articles after 2013. A wide range of literature was used based on the search process, but mainly in English or online publishing.	Level C Integrative study
Matziou, V., T., Vlahioti, E., Perdikaris, P., Matziou, T., Megapanou, E., Petsios, K. (2014). Physician and nursing perceptions concerning inter-professional communication and collaboration. 6, 526-533.	Communication and collaboration	Power relationships exist between roles that can lead to poor collaboration and communication.	Descriptive study using a convenience sample of physicians and nurses with the use of questionnaire.	Nurses with higher degrees are more likely to be better at collaboration and communication. Communication barriers still exist due to nurses feeling devalued and efforts need to be made to overcome this.	Limitation of the sample size. The sample itself lacked the involvement of other health professionals.	Level C Descrip-tive
Tan, T. C., Zhou, H., & Kelly, M. (2018). Nurse-physician communication: An integrated review. *Journal of Clinical Nursing*, *26*(23-24), 3974-3989. https://doi.org10.1111/jocn.13832	Conceptual model	Lack of interprofessional communication skills. Differing training backgrounds affects communication practices for RN-MD communication. Crossing of RN-MD will assist in better communication for the interprofessional team. Organizational and cultural changes are needed in regards to RN-MD communication	Integrative Review that combined a variety of research design-qualitative and quantitative	Peer reviewed, RN-MD communication in all settings were included in the review, two authors independently compared the data	Majority of the interventional studies on RN-MD communication were small in size so cannot be generalized	Level A

(table continues)

Citation	Conceptual framework/ theory	Main finding	Research method	Strengths of study	Weaknesses	Level of evidence
Townsend-Gervis, M., Paul, C., & James M., V. (2014). Interdisciplinary rounds and structured communication Reduce readmissions and improve some patient outcomes. *Western Journal of Nursing Research*, (7), 917. https://doi.org/10.1177/0193945914527521	Structured Communication	Structured communication increases nurses situation awareness	Repeated measures design Observation	SBAR and interdisciplinary rounds shown to be effective processes in addressing the communication gap	Limitation of the study was that it was conducted at a single site and no control was used. Longitudinal study that led to variation of the staff over time due to turnover	Level C
Turner, C. J.,Haas, B., Lee, C., Brar, S., Detsky, M. E., & Munshi, L. (2018). Improving communication between surgery and critical care teams: Beyond the handover. American *Journal of Critical Care, 27*(5), 392–397. https://doi.org/10.4037/ajcc2018114	Structured communication	Miscommunication between treating teams cause patient harm. A handover checklist and a 5-item communication tool improved communication.	Mixed methods pre and post intervention survey	Information supported the JC recommendation for structured handoff of patients between practitioners	Not randomized, low response rate (51% overall), lack of objective measurement. Interventions and evaluation limited to the general surgery team.	Level C

Appendix C: Study Selection Using PRISMA