Evaluation of Communication & Teamwork Implementing TeamSTEPPS for a Medical-Surgical Unit

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Abstract

An assessment of a medical-surgical unit established that there were poor communication and teamwork practices. Consequently, an evidence-based practice change was implemented in which TeamSTEPPS 2.0 was utilized to address these weaknesses. Twelve registered nurses were selected through convenience sampling to partake in the project. The nurses completed two questionnaires, the TeamSTEPPS Attitude Questionnaire (T-TAQ) and the TeamSTEPPS Perception Questionnaire (T- TPQ), before and after participating in the program. The implementation of the program encompassed creating the project team to oversee the execution, providing adequate resources, developing budgets and schedules, identifying instructors to teach the TeamSTEPPS program, and evaluating outcomes in eight to ten weeks. The project was made possible through the support of the various stakeholders. Based on the results, the implementation of the TeamSTEPPS program improved perceptions towards communication and teamwork within the unit. The project established that TeamSTEPPS improved nurses' perceptions and attitudes towards teamwork and communication. In addition to recommending TeamSTEPPS, this manuscript provides strategies that could be utilized to sustain the initiative.

Keywords: Communication and teamwork, TeamSTEPPS utilized in organizations, TeamSTEPPS, perceptions in communication.

Dedication

First, I would like to acknowledge the wisdom of my mother who told me education would open up the doors to my life. My nursing journey has led to my content with a satisfying life-long career for which I am very grateful. There were many challenges that were set forth in front of me to make this project happen. My strongest longevity support is my husband of 33 years. I would not have been able to complete this project without the support and motivation from my husband James. Without his loving support the sustainability to complete this terminal degree in nursing would be in vain. I would like to thank my children for their encouragement to continue my dream. I dedicate this Doctor of Nursing Practice degree to my son Marcus and my mother Juanita who have passed away, but I know was strong inspirational lights to get me through the tears and the hard days I had to overcome and surpass to complete this Doctorate of Nursing degree.

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Executive Summary

Purpose: The purpose of this DNP Implementation Project was to examine whether the implementation of TeamSTEPPS 2.0 could improve teamwork and communication within a medical-surgical unit.

Background and Significance: It was established that there was poor communication and teamwork on the medical-surgical unit. The lack of effective communication and teamwork adversely affected the work environment and patient outcomes. It was imperative to implement the TeamSTEPPS program to address these weaknesses.

Methods: A quantitative project was implemented in which twelve registered nurses were selected through convenience sampling. Before taking part in the project, the registered nurses completed two questionnaires, TeamSTEPPS Attitude Questionnaire (T-TAQ) TeamSTEPPS perception Questionnaire (T-TPQ). After the project concluded, the nurses completed the same questionnaires. The Wilcoxin signed rank test was used to compare the pre- and post-implementation questionnaires.

Findings: Based on the results, the implementation of the TeamSTEPPS program improved perceptions towards communication and teamwork within the medical surgical unit.

Conclusion: Medical-surgical units can utilize TeamSTEPPS to improve teamwork and communication within their nursing healthcare teams.

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CHAPTER 1: INTRODUCTION

Teamwork and effective communication are predictors of job satisfaction, high productivity, and strong organizational cultures. According to the Institute for Healthcare Improvement, (2017), "building a foundation of good teamwork and communication can help transform individual patient safety projects into an overall system of safety" (pg. 1). This Doctorate of Nursing Practice (DNP) project envisioned to implement a TeamSTEPPS 2.0-based project to improve teamwork and communication among the medical-surgical registered nurses. Implementing TeamSTEPPS has been demonstrated to increase team awareness, clarify team roles, resolve conflicts, improve information sharing, and eliminate barriers to quality and safety (Agency for Healthcare Research and Quality, 2019). The Joint Commission conducted a study to determine core causes for all reported sentinel events between 1995 and 2005. Sixty-eight percent (68%)of adverse patient outcomes are caused by poor communication (Gausvik, Lautar, Miller, Pallerla & Schlaudecker, 2015). The annual cost of medical errors in hospitals is approximately $17-29 billion dollars (IHI, 2017). In this DNP Project, medical surgical registered nurses at a large hospital medical center were exhibiting low levels of collaboration and ineffective communication hence the need to implement an intervention. Essentially, teams that communicate effectively and collaborate with each other reduce the frequency and risks of human error by communicating and collaborating with effective teamwork (Gausvik, Lautar, Miller, Pallerla, & Schlaudecker (2015).

Problem Statement

The practice issue identified was lack of teamwork and communication among the medical surgical nurses (K. Rupp, personal communication, January 20, 2019). This issue had been apprised to the executive leaders of the organization as an organizational problem that was

in need of correcting. The medical- surgical nurses explicitly expressed their frustration regarding the inability to work as a functional, capable team. Teamwork on the unit was almost nonexistent. Besides limiting opportunities for collaboration, the management had not provided any incentives for employees to work as a team.

According to the director of the medical surgical unit, "the problem had been attributed partly to the highly competitive environment and the rigid hierarchical organizational structure that had been cultivated" (K. Rupp, personal communication, January 20, 2019). Although some groups were evident in the organization, those groups were mainly *ad hoc* and often involved friends coming together to interact.

The communication practices involved the management telling the nurses what to do without providing the nurses an opportunity for feedback (Vertino, 2014). According to the director of the medical surgical unit, "over the past year, the administration had not asked staff members, on any occasion, to give their feedback regarding organizational plans" (K. Rupp, personal and communication, January 20, 2019). As a result, it is proposed that combinations of optimal work environments and a collaborative inter-professional work relationship between the nurses and physicians will improve patient outcomes.

Objectives and Aims

The aim of the proposed DNP project was to implement TeamSTEPPS as a pilot among 12 medical-surgical registered nurses to promote effective communication and teamwork to improve patient outcomes in the medical-surgical unit. TeamSTEPPS 2.0 is an evidence-based practice teamwork program that contained seven modules, which included team structure, communication, situation monitoring, leading teams, and mutual support (Vertino, 2014). Essentially, communication is at ease with a cohesive team. Thus, it was hoped that

implementing the TeamSTEPPS program would improve the level of teamwork and enhance communication. To achieve the aim identified, the following objectives served to guide the DNP scholar during the project:

- Evaluate teamwork and communication in the registered medical-surgical nurses
- Improve nurse perception of teamwork and communication
- Improve communication and teamwork among the nursing staff

Significance of the Practice Problem

The problem of lacking effective communication and teamwork was critical since it adversely affected the nursing staff and inhibited the ability of the organization to offer patient-centered care (Körner et.al., 2015). Teamwork entailed working collaboratively within the group to attain a common goal. In the contemporary health care environment, nurses are expected to work as a team in the course of their daily activities (Körner et al., 2015). TeamsSTEPPS teaches leadership skills, adaptability, mutual trust and how to use closes loop communication (TeamSTEPPS, 2017). According to Zaccagnini and

White, (2014), "an effective team must develop mutual trust, listen attentively, and value the unique viewpoints of others on the team" (p.13). As a result, there was need for coordinated care, which could only be attained through effective teamwork and inter-professional collaboration (Salmond & Echevarria, 2017). In addition to collaborative care planning and execution, nurses are also expected to involve themselves in evidence-based practice activities, which require collaboration and knowledge exchange.

Poor teamwork practices in an organization adversely affect the organization, patients, and staff members (Mao & Woolley, 2016). The organizational perspective and ineffective teamwork increased hospitalization costs and time (Salmond & Echevarria, 2017). Since care

was not provided efficiently and effectively, the organization was likely to incur additional costs and hospital stays that were likely to be longer. The organization was also likely to experience inefficient utilization of health care services. Patients were affected as the care provided did not meet their expectations (Mao & Woolley, 2016). Therefore, in addition to poor clinical outcomes, patients are likely to feel dissatisfied. The increased possibility of medical errors subjected the patients to a myriad of safety issues (Mao & Woolley, 2016). Staff members, who have complained of poor teamwork, were also affected. Besides facing challenges trying to provide holistic and coordinated care to patients, nurses were feeling dissatisfied and forced to seek employment opportunities elsewhere (Mao & Woolley, 2016).

Communication means conveying information through language and other symbols. The main communication types are verbal, non-verbal, and written communication. According to Vermeir et al. (2017), "communication allows for the dissemination of information and instruction, promotes positive interpersonal relationships, enhances decision-making, minimizes conflicts, and promotes strong organizational cultures" (p.1). Often, organizations tend to prioritize top-down communication without considering the value of employee feedback. One of the reasons for this is the organizational structure. Organizations with highly hierarchical structures are not able to engage staff members regularly. Horizontal communication, which is among staff members at the same level, is key as it promotes problem-solving and decision-making. Essentially, effective communication is imperative as it allows staff members to drive the organizational strategy, improves service quality, fosters innovation, and enhances patient-centeredness (Mao & Woolley, 2016).

Effective communication between the patients and the nurses was imperative in improving outcomes of quality nursing care. In addition to scientific knowledge and technical

skills, the nurses needed to possess good interpersonal and intellectual skills. Improving communication is essential and linked with improving patient safety, reduction in clinical errors, educating patients, families and communities (Kourkouta & Papathanasiou, 2014). Therefore, while the communication between nurses and peers/management is important, every nurse should be an effective communicator while working with patients and families. Having effective communication skills allows the nurses to create transpersonal caring relationships with patients. (Mao & Woolley, 2016). Most importantly, it is through these relationships that a patient can be open during the health assessments and take part in self-care activities. Overall, the poor teamwork and communication practices were significant challenges that were addressed.

Synthesis of the Literature

The impact of effective teamwork and communication in health care settings has been examined considerably in the research literature. Besides assessing the dimensions of teamwork and communication, studies have evaluated their potential benefits. In this review part of the paper, literature relating to communication and teamwork is examined. The keywords were "communication and teamwork," "TeamSTEPPS utilized in organizations", "TeamSTEPPS," and "perceptions in communication." The literature search included keywords and phrases entered into library databases such as ProQuest, EMBASE, CINAHL, PubMed and Medline. Searches of public Internet websites, research and statistics textbooks, and professional organization websites produced additional resources. The search resulted in more than 70 journal articles from which 25 were chosen. Those selected were quantitative peer-reviewed ranging in time from 2014 to 2019, and closely aligned with the practice problem, ineffective team communication and collaboration. The inclusion criteria was as follows: articles had to be included (1) published articles after 2014 to 2019, (2) written in English language, (3) full-text,

(4) scholarly and peer-reviewed. The synthesized articles that were excluded were (1) not written in English, (2) articles published before 2014. Findings from this synthesis of literature can help in determining the suitability of TeamSTEPPS (2019), to the practice issue as well as the best practices for implementation (Appendix B).

The impact of effective teamwork and communication in health care settings has been examined considerably in research literature. Besides assessing the dimensions of teamwork and communication, studies have evaluated their potential benefits. In this review part of the paper, literature relating to communication and teamwork was examined. In addition, TeamSTEPPS, which is the proposed practice. In the Chamberlain DNP program, one requirement of the DNP project is that the intervention is not education. While education usually supports the evidence-based practice change, education cannot be the intervention. The evaluation focused on two aspects: the attitudes and perceptions of the nurses and the effectiveness of TeamSTEPPS. Findings from this synthesis of literature assisted in determining the suitability of TeamSTEPPS to the practice issue as well as the best practices for implementation (Appendix A).

Teamwork in Health Care

Over the recent past, research literature has consistently emphasized the importance of teamwork in health care settings. The need for safe and quality patient-centered care focuses on efforts to increase cost containment. With increased incidences of chronic illnesses, the shifting of demographics, and causative factors emerged behind the initiative to increase interdisciplinary and multidisciplinary collaboration in healthcare (Körner et al., 2017). Based on Körner et al. (2017), teamwork refers to the collaborative interaction among health care personnel to attain a collective goal or solve a given problem. Körner et al. (2017) also identified several dimensions that characterize effective teams as encompassing clear goals, developing shared commitment

and team identity, creating clear roles and responsibilities, enhancing interdependence among team members, and integrating diverse work practices. Other critical dimensions encompass effective communication, developing joint protocols, understanding each member's roles, participating in training and work practices, and holding regular meetings. Based on these best practices, organizations have continually tried to foster teamwork within their workplaces.

The relationship between teamwork, and organizational, patient, and staff outcomes has been examined significantly. In one study, Wen and Schulman (2014) conducted a systematic review of literature to establish whether team-based care enhanced patient satisfaction. Based on their analysis, team-based care had a positive effect on patient satisfaction as compared to the usual care. The findings also suggested that collaboration improved the likelihood of patients accepting treatment and enhanced clinical outcomes. Concerning the nursing population, teamwork and collaboration seemed to enhance job satisfaction, well-being, and role-clarity. In a study conducted in medical-surgical unit, Marguet and Ogaz (2019) set out to examine the effect of a teamwork intervention on nurses' perceptions of teamwork and missed nursing care. In the quasi-experimental study, the researchers found that a teamwork intervention did improve staff perception of patient care and teamwork, albeit to a small degree (Marguet & Ogaz, 2019). Nevertheless, the researchers recommended the importance of teamwork interventions in health care settings.

Effective Communication in Health Care

Like teamwork, there is a wealth of scholarly evidence that suggests a positive relationship between effective communication and positive outcomes for patients and health care teams (Howick et al., 2018). Communication is perceived as a transactional process aimed at creating meaning. It is imperative to understand that communication involves several essential

components: the message, the sender, the receiver, the medium, and noise. In a nurse-patient interaction, the nurse and the patient must [adopt the roles of senders and receivers. The message that one sends can have a different meaning to the recipient. Due to the possibility of misinterpretation, the nurses and other providers must cultivate effective communication to ensure that the sender and receiver share a collective meaning. In addition to conversing with patients and their families, nurses are expected to communicate effectively with their peers, management, and other professionals in their workplaces. In multidisciplinary settings, effective communication is critical.

According to Howick et al. (2018), "one benefit of effective communication between providers and patients is that it enhances diagnostic accuracy" (p. 242). During a patient assessment, the quality of the diagnosis depends mostly on the information that the patient or caregiver provides during the historical or subjective data collection. Therefore, when the provider can utilize communication effectively, the process of collecting the required information becomes more comfortable. Second, effective communication can enhance patient-centered care (Howick et al., 2018). The concept of patient-centered care is based on the view that care must be offered in a way that aligns with the patient's expectations, beliefs, and wants. Consequently, communication allows the provider to understand the patient; the likelihood of providing patient-centered services is also increased. Third, effective communication has the potential of improving clinical outcomes such as safety and treatment adherence (Howick et al., 2018). Furthermore, effective communication can minimize malpractice claims (Howick et al., 2018). Mistakes are minimized, the risk of legal ramifications is reduced.

Studies also indicate that staff members and the organization benefit from effective communication practices. Gausvik, Lautar, Miller, Pallerla, and Schlaudecker (2015) studied

how structured nursing communication affects safety, efficiency, care planning, job satisfaction, and teamwork among interdisciplinary acute care teams. They pointed out that prior research evidence suggests that efficient, accurate, and timely communication enhances job satisfaction among health care staff (Gausvik et al., 2015). As a result, their study assessed the effectiveness of patient and family-centered structured interdisciplinary bedside rounds (SIBR) on the provision of care to acute elderly patients in a community hospital (Gausvik et al., 2015). They utilized a mixed methods approach to survey the perceptions of communication, teamwork, safety, daily care plans, job satisfaction, and efficiency (Gausvik et al., 2015). According to the findings, collaboration-based interdisciplinary bedside rounds improved teamwork, team and family communication, job satisfaction, safety, efficiency, understanding of care plans, and conflict management (Gausvik et al., 2015). More importantly, the researchers established that effective communication improved nurse job satisfaction and retention (Gausvik et al., 2015). They also found that effective communication is imperative to the creation of a safe hospital environment that supports quality care (Gausvik et al., 2015). They concluded that team communication improves patient care quality and nurse job satisfaction (Gausvik et al., 2015). Effective communication seems to be essential to health care organizations, patients, and nurses.

TeamSTEPPS 2.0

Team Strategies and Tools to Enhance Performance and Patient Safety (TeamSTEPPS) 2.0 is an evidence-based framework utilized to optimize team performance in health care settings (Cooke, 2016). According to Cooke (2016), “TeamSTEPPS was developed by the Agency for Healthcare Research and Quality (AHRQ) and the Department of Defense as a way of improving quality, efficiency, and safety in health care” (p. 37). Cooke (2016) reported that TeamSTEPPS was created based on the performance, knowledge, and attitudes of teamwork competencies

derived from scholarly literature. The framework is composed of five key dimensions. The first one is team structure, which focuses on the aspects of a multi-team system (MTS) that should work in unison to ensure safety and quality of services offered (Lee et al., 2017). Within an MTS, the most essential participant is the patient. However, MTSs are also composed of a core, coordinating, and contingency teams. Whereas the core team is comprised of leaders and members involved in the provision of direct care, the coordinating team oversees operations and functions while contingency teams are formed to manage a specific event.

The second dimension is communication, which focuses on improving the processes through which information is exchanged among members of a team. Under communication, the framework proposes several techniques such as SBAR, Call-Out, Handoff, I PASS THE BATON, and Check-Back aimed at promoting communication. The third content area is leadership and focuses on developing leadership within organizations. To promote leadership, the framework introduces the teams to the features of effective team leaders, team events, and the brief and debrief checklists (Lee et al., 2017). The checklists were helpful in this project. Fourth, the framework examines situational monitoring, processes involved, cross-monitoring, and the STEP and I'M SAFE techniques. Last, TeamSTEPPS 2.0 exposes the learners to mutual support, which is critical to team functioning. The participants, in this area explored feedback, task assistance, two-challenge rule, advocacy and assertion, DESC Script, and Concerned Uncomfortable Safety (CUS).

One of the areas that research literature has explored relates to the implementation of the TeamSTEPPS 2.0 framework. Like any other change initiative, effective implementation directly affects the outcomes.

Effectiveness of TeamSTEPPS 2.0

Before choosing TeamSTEPPS as a change tool to improve communication and teamwork, it was critical to assess whether it was valid, based on available research evidence. Sweigart et al. (2016), conducted a training program in which they used the TeamSTEPPS model as an intervention to address communication and teamwork challenges. According to the findings, the participants demonstrated improved attitudes towards leadership, mutual support, situation monitoring, and communication (Sweigart et al., 2016). As a result, they concluded that TeamSTEPPS has the potential of enhancing teamwork within organizations (Sweigart et al., 2016). In one study, Cooke (2016) determined the effect of an educational intervention based on the TeamSTEPPS model on the attitudes and knowledge of health care risk managers on teamwork and communication. The researcher utilized the pre- and post-course approach to establish effectiveness. Based on the findings, teamwork education based on the model resulted in improved attitudes and enhanced knowledge (Cooke, 2016). However, the author pointed out that education only improved situation monitoring and team structure, which are two of the five dimensions of teamwork (Cooke, 2016). Attitudes towards the other elements – mutual support, leadership, and communication – did not change significantly. Consequently, TeamSTEPPS has the potential of improving teamwork within health care environments; however, the impact of the model on communication was insignificant. Nevertheless, the article does support the idea that TeamSTEPPS is an effective educational intervention.

Lee et al. (2017), in their study, attempted to explore whether the reinforcement of TeamSTEPPS principles could help in sustaining teamwork among orthopedic surgery teams. Their study was particularly important as they found out, from their review of literature, that teamwork training often results in positive teamwork behaviors in the short-term, but the improvements are not usually sustained (Lee et al., 2017). Consequently, their objective was to

determine whether the utilization of TeamSTEPPS results in sustained teamwork improvements (Lee et al., 2017). The study was conducted seven months after a training intervention based on TeamSTEPPS had been carried out. According to the findings, the utilization of TeamSTEPPS resulted in sustained leadership and communication behaviors (Lee et al., 2017). However, the improvement was not similar among all the nursing teams (Lee et al., 2017). Still, the study demonstrates that not only does TeamSTEPPS improve teamwork and communication, but it also sustains these positive attributes over the long-term.

Peters et al. (2018), also conducted a study to evaluate the effectiveness of the TeamSTEPPS framework. The study was based at a level 1 trauma center. Approximately 70 to 80% of errors in the ER occur as a result of poor teamwork and communication (Peters et al. (2018). As a result, a training program to improve collaboration and teamwork could help not only to improve patient outcomes and minimize errors but also enhance nursing job satisfaction. Therefore, Peters et al. (2018) conducted a study to establish the utilization of TeamSTEPPS in the facility and the effect of the usage on staff and patient outcomes. Based on the findings, TeamSTEPPS was effective in improving collaboration and teamwork. Additionally, the organization noted an increase in staff self-confidence and knowledge in clinical decision-making, team performance, quality of care, and patient outcomes. From this study, it could be concluded that TeamSTEPPS can be helpful in stressful and demanding health care environments. Ward et al. (2015) explored the implementation of TeamSTEPPS in community hospitals. The idea of the study was to examine implementation approaches in these settings and compare them with the best practices (Ward et al., 2015). Based on their findings, the implementation of TeamSTEPPS in community hospitals differs from best practices. Some of the disparities include poor selection and training of the trainers; inability to sustain lessons

through on-the-job practice and application; and failing to emphasize active learning (Ward et al., 2015). As a result, the researchers recommended an effective selection of trainers, active learning, and application of the lessons in practice as some of the best practices for implementing TeamSTEPPS (Ward et al., 2015).

Ward et al. (2017) suggested the utilization of implementation models such as Promoting Action on Research Implementation in Health Services (PARIHS) when executing TeamSTEPPS. The PARIHS model asserts that successful implementation of a change initiative requires evidence, context, and facilitation (Ward et al., 2017). Whereas evidence includes research information and patient data, context refers to the culture, leadership, and evaluation practices in an organization. On its part, facilitation encompasses the skills and attributes of project leaders and coordinators. Overall, according to Ward et al. (2017), the success of a TeamSTEPPS program relies on the use of a robust implementation model.

The effectiveness of TeamSTEPPS has also been evaluated in emergency departments. Essentially, emergency departments are demanding and stressful environments. Teamwork in the Emergency Room (ER) improves staff roles which are directly linked with improving patient care that is safe, reduction in clinical errors, and reduction in waiting times (Obenrader, Broom, Yap, & Jamison, 2019). Teamwork is also promoted using effective communication practices. In their research, Obenrader et al. (2019) explored whether the implementation of TeamSTEPPS could help in changing team member perceptions in an emergency department. After the implementation of the model, survey questionnaires were administered to establish its effectiveness. The results indicate that TeamSTEPPS training improved the perceptions of communication and teamwork within the unit. More importantly, the level of communication and teamwork also enhanced. Further, in another study, Fischer et al. (2015) examined the

implementation of TeamSTEPPS at a military trauma center in San Antonio. They collected data between December 2013 and March 2014. According to the findings, the compliance rate for the TeamSTEPPS initiative was 75.1%, which is considerably high (Fischer et al., 2015). Additionally, as the implementation of the initiative progressed, a decrease in concerns was noted. Some of those concerns included personnel, supply, instrument-related, case scheduling, and preference card issues (Fischer et al., 2015). Therefore, the researchers concluded that TeamSTEPPS can be implemented with ease in casualty care settings equivalent to the Intensive Care Unit (ICU). The findings of this study suggest that it is considerably easy to implement TeamSTEPPS. The researchers also suggested the incorporation of the model into the culture and organizational policy of the organization to sustain the benefits observed.

In the final study, Siddons and Potter (2016) assessed the impact of the implementation of TeamSTEPPS on patient and staff outcomes in primary care environments. Essentially, primary care is an important precondition for any effective health care system as it reduces illness, helps in understanding health problems at an early stage, promotes health, and enhances the cost-effectiveness of the system. However, for primary care to be strong, collaboration and teamwork are essential. In the research, Siddons and Potter (2016) found that the implementation of a customized TeamSTEPPS program improved partnerships, which resulted in improved staff perceptions of teamwork. The initiative also improved patient care quality (Siddons & Potter, 2016). This study demonstrates an affirmative link between TeamSTEPPS and improved patient care quality.

Practice Recommendations

The synthesis of literature disclosed several recommendations. To begin, available research seems to support the idea that teamwork is imperative in health care organizations, and

it is easy to see why (Sweigart et al., 2016). Teamwork entailed working together to achieve common goals or solve a given problem. In a highly specialized health care system along with increasing complexity of interventions, collaboration becomes an essential avenue through which health can be promoted. As a result, nurses often find themselves in situations where they must work with either their peers or professionals from other disciplines. Through teamwork, patients can receive care that meets their expectations. Furthermore, research shows that teamwork reduces medical errors hence improving the safety of the services offered (Salmond & Echevarria, 2017). More importantly, the benefits of teamwork also extend to the staff by increasing satisfaction and organizational culture. Broadly speaking, literature does emphasize the need for health organizations to prioritize teamwork (Cooke, 2016).

Concerning communication, research literature also asserts that effectiveness is vital in health care (Cooke, 2016). One of the advantages identified is diagnostic accuracy (Howick et.al, 2018). When the nurse can communicate effectively with the patient and create a transpersonal relationship, the likelihood of the patient being open increases. Research also suggests that effective communication allows the provision of patient-centered care (Wen & Schulman, 2014). Effective communication improves clinical outcomes such as safety and treatment adherence and minimizes malpractice claims (Howick et al., 2018). Improved communication practices within organizations also improve job satisfaction among nurses as nurses can collaborate and provide feedback (Gausvik et al., 2015). Good communication practices have been shown to enhance team processes. Lastly, research also suggests that communication enhances cost-effectiveness. Based on this information, it could be concluded that health care organizations formulate to prioritize effective communication (Lee et al., 2017).

The available research literature also explains the TeamSTEPPS 2.0 extensively. Overall, TeamSTEPPS is an evidence-based framework utilized to optimize team performance in health care settings (Cooke, 2019). It focuses on five key areas that are believed to influence team performance, which includes team structure, leadership, situation monitoring, communication, and mutual support (AHRQ, 2017). However, besides teamwork, TeamSTEPPS can also improve communication practices in an organization. Some studies have also been done to establish the ease of implementing TeamSTEPPS (Gausvik et al., 2015). Based on the analysis conducted, all studies suggest that an organization can implement TeamSTEPPS easily in different settings (Ward et al., 2015). It is important to address risks that might inhibit the execution process. Like any other project, barriers to implementation such as resistance to change and inadequate funding will be encountered. One study suggested the utilization of an implementation framework to minimize risks (Siddons and Potter, 2016). Ideally, Evidence Based Practice (EBP) implementation frameworks leverage best practices to reduce risks and enhance success (Siddons and Potter, 2016).

Regarding the efficacy of TeamSTEPPS in promoting teamwork and collaboration, overwhelming evidence suggests that the model is effective. All of the studies examined showed that the adoption of TeamSTEPPS does improve teamwork because the subject areas contained in the model are related to the concept of teamwork. The studies also demonstrated that TeamSTEPPS enhanced attitudes towards teamwork and the five dimensions of leadership, communication, situation monitoring, and mutual support (Lee et al., 2017). The improvement in attitudes, knowledge, and performance of teamwork was also shown to improve patient outcomes. In most of the studies, patient satisfaction increased while the prevalence of medical errors decreased. As a result, the studies concluded that TeamSTEPPS improves clinical

outcomes. The studies demonstrated enhanced staff satisfaction. Because of the improved teamwork and communication, it was expected that staff members were likely to be content in their roles and workplaces. However, one study by Cooke (2016) failed to demonstrate a link between the implementation of TeamSTEPPS and effective communication (Cooke, 2016). Nonetheless, the evidence contained in the other studies is compelling enough to justify the implementation of TeamSTEPPS. Overall, the chosen approach was selected because of two reasons. The first is that communication and teamwork inefficiencies are real issues in the workplace setting chosen. The second TeamSTEPPS 2.0 is a model that had been proven empirically to address these two issues. The study demonstrated that hat the adoption of the model improved teamwork and communication within the medical-surgical unit (Marguet and Ogaz, 2019).

Evidence Based Intervention: Chosen Option

The chosen program intervention implemented was the evidence-based project utilizing TeamSTEPPS 2.0. The medical-surgical nurses had complained of low levels of teamwork and poor communication practices. Considering the benefits of communication and teamwork in organizational settings such as improved patient satisfaction, better clinical outcomes, higher care quality and safety, and enhanced staff satisfaction, it was essential that an effective intervention was in need of implementing. In this DNP project, the chosen intervention nurse participants underwent a training program in which they were taught teamwork and communication using the TeamSTEPPS model selected (AHRQ, 2017). The effectiveness of the intervention was established by conducting pre and post-implementation surveys and calculating the variance using ANOVA (AHRQ, 2017).

CHAPTER 2: THEORETICAL FRAMEWORK

Theoretical Framework

The theoretical framework that formed the basis of this DNP implementation project is Jean Watson's Theory of Human Caring, which views nursing in terms of its humanistic properties. The theory perceives caring based on the values of concern for others, kindness, respect, and spirituality (Ozan & Okumuş, 2017). In the theory, Watson asserted that caring, which is at the center of nursing practice, is a human to human process that is characterized by interpersonal relationships. She also identified three major components of human caring, which are carative factors, the caring moment or occasion, and transpersonal caring relationships (Ozan & Okumuş, 2017). The theory is based on several assumptions that include the idea that caring can only be practiced and demonstrated interpersonally; carative factors promote the satisfaction of specific human needs; caring promotes health and development; effective caring is centered on the patient; a consideration of the caring environment is key; and caring supported curing.

Jean Watson developed ten carative factors upon which the science of caring is premised: 1) creation of humanistic-altruistic system of values; 2) installation of faith-hope; 3) cultivation of sensitivity to one's self and to others; 4) formation of a helping-trust relationship; 5) promotion and acceptance of the expression of positive and negative feelings; 6) systematic utilization of the scientific problem-solving approach in decision-making; 7) promotion of interpersonal teaching and learning; 8) provision of a supportive, protective, and corrective physical, mental, spiritual, and sociocultural environment; 9) gratification of human needs; and 10) permission of existential-phenomenological forces (Pajnkihar, Štiglic, & Vrbnjak, 2017). Overall, the ten carative factors represent a human altruistic system of values that define effective care.

Transpersonal caring relationship, which is the second component of the theory, focuses on the relationship that the nurse creates with the patient. According to Clark (2016), "transpersonal defines an intersubjective relationship between human beings that goes further than the objective assessments to include showing genuine concern for another person" (p.21). It encompasses mutuality between the nurse and the patient (Clark, 2016). The objective of this kind of relationship is to protect, preserve, and promote wholeness, human dignity, and inner harmony (Clark, 2016). Lastly, the caring moment or occasion represented the point at which the provider and the patient come together in a manner that an opportunity for caring is obtained.

Watson defined the four metaparadigms of nursing. She conceptualized the patient as a valued person deserving of assistance, respect, and nurturing (Ozan & Okumuş, 2017). Watson also defined a human being as a functioning integrated self. Regarding health, Watson argued that health encompasses many factors, including absence of illness, maintenance of day-to-day functioning, and high-level mental, physical, and social functioning (Clark, 2016). She also perceived the society/environment in terms of the presence of caring attitudes (Clark, 2016). Finally, she conceptualized nursing as a science focused on promoting and restoring health, preventing illnesses, and caring for the sick (Clark, 2016). Jean Watson's Human Caring goes hand in hand with implementing TeamSTEPPS because the focus is on 'Team'. A Medical Surgical 'Team' with effective communication and teamwork will be able to deliver safe and effective patient care (Plonien & Williams, 2015). "Care is crucial for human development, and is first and foremost aimed at physical needs" (Clark, 2016). Care ethics stem from the idea that care is basic to human existence. According to Lachman, (2015), "Caring weaves people into a network of relationships" (p.114). The medical surgical 'Team' will be able to optimize the use of information, people, and resources to achieve the best clinical outcomes for the patients. The

medical surgical 'Team' will have an increased awareness and clarity of team roles and responsibilities. They will know how to resolve conflicts and improve information sharing. They will be able to eliminate any barriers to quality and safety (AHRQ, 2015). Teamwork is suggested as an essential factor in creating the value of care, improving health practices, patient outcomes, and patient well-being (Frykman, Hasson, Athlin, & Schwarz, 2014). To implement Watson's Theory of Human Caring, one is expected to create a caring relationship with the client, adopt a holistic perspective, treat patients well, accept the patient regardless of the situation, promote health, and spend adequate time with him or her (Ozan & Okumuş, 2017).

The theory of human caring is relevant to this project due to various reasons. In the first part of the theory, it recognized the fact that nurses want to provide satisfying care, which is a key reason many of the nurses joined the profession (Ozan & Okumus, 2017). Second, the theory can help in the provision of quality care (Ozan & Okumuş, 2017). Third, the theory emphasizes the need for nurses to adopt an active role in the client's curing and healing process (Ozan & Okumuş, 2017). Furthermore, the theory is patient-centered and recognized the effect of the community, family, and culture on outcomes (Clark, 2016). The theory of human caring also provides an explanation as to why the TeamSTEPPS 2.0 intervention focused on improving staff attitudes towards communication and teamwork and how it improved patient and nursing outcomes.

Change Model

The change framework that relied upon in this program was the Plan-Do-Study-Act (PDSA) model. According to Taylor et al. (2014) the PDSA model is a cyclic framework, composed of four steps, that was utilized in evaluating programs. The first step of the PDSA Model was planning. Here, the leader was managing a project and expected to develop plans for

the implementation of the initiative as well as the method of data collection (Taylor et al., 2014). In the planning phase of the PDSA Model this phase focuses on answering the question as to what is going to be done?" (Taylor et al., 2014). In this case, the planning phase describes the TeamSTEPPS 2.0 intervention that was going to be implemented to improve staff attitudes towards teamwork and communication in the workplace. In this initial phase, it was important to develop a team that explored and defined the objectives, marked justifiable predictions, and created conditions explicit. For example, it could be hypothesized that the execution of the TeamSTEPPS program would improve staff perceptions, towards teamwork and communication. Finally, the plan developed would attempt to answer the what, where, when, why, who, and how questions (Taylor et al., 2014). Having a comprehensive plan allowed for the effective evaluation of an initiative.

The second step, which was titled doing, involved implementing the initiative while collecting the relevant data. In this phase, it was imperative to carry out different tests and document issues and other (Appendix I) observations (Taylor et al., 2014). In the project, the doing phase encompassed several aspects. The first aspect was the collection of the pre-implementation data by administering the survey questionnaire. Second, the intervention was executed while the project team collected data through observation. Since the intervention was an educational one, the instructors were expected to observe any factors that might affect the overall outcomes. The final step would be to conduct a post-implementation survey. Overall, the doing phase of the PDSA cycle focused on carrying out the activity while collecting the required data (Taylor et al., 2014).

The third phase, which followed the collection of data, was referred to as studying. As the name suggests, this step focused on analyzing and synthesizing the data collected with a view of

identifying patterns, trends, or observations (Appendix I) that are pertinent to the program objectives (Taylor et al., 2014). The analysis was performed using a quantitative approach. However, for most interventions, quantitative approaches are preferred as the findings obtained are more objective and generalizable. In this phase, the project team was expected to compare the data with the predicted outcomes or hypothesis. Thus, it was hypothesized that the TeamSTEPPS (2019) intervention would improve teamwork and communication perceptions, then the project implementation phase would compare the pre- and post-implementation data to demonstrate the potential change. The implementation phase also requires the project team to explore whether different conditions produced dissimilar results (Taylor et al., 2014). Finally, the phase asserted the need for the project team to summarize what was learned (Crowfoot & Prasad, 2017).

The final phase encompassed acting on the results obtained from the project. The kind of findings established should dictate whether to adopt, abandon, or adapt the intervention (Coury et al., 2017). Adopting denotes embracing the intervention (Taylor et al., 2014). On the other hand, adapting implies customizing the intervention to suit the uniqueness of the setting (Taylor et al., 2014). For example, the TeamSTEPPS model could be adapted the way it is or adapted to better suit the needs and wants of the organization. It is also possible that the intervention could be abandoned if it does not meet the goals of the organization. The acting phase entailed building knowledge that can be utilized in the subsequent PDSA cycles (Coury et al., 2017). The following section summarizes the utilization of the PDSA model in relation to the proposed intervention.

Plan

The objectives of the TeamSTEPPS 2.0 model were defined based on the overall goal of improving communication and teamwork within the unit. In addition, the hypothesis that the implementation of the TeamSTEPPS (2019) would improve perceptions of teamwork and communication in the unit was developed. Furthermore, the plan of carrying out the intervention was established.

Do

In week three the pre-implementation survey was conducted followed by the execution of the intervention in this phase. Essentially, the execution involved instructing the target population by using the TeamSTEPPS framework. As the project closed, a post-implementation survey was conducted. More importantly, during the execution, problems, observations, (Appendix I) and data were documented.

Study

The data collected from the previous step was analyzed and synthesized. The idea was to establish whether the intervention had a positive impact on teamwork and communication perceptions within the unit. In addition, the analysis included an examination of the effect of other factors on the outcomes realized. Last, a summary of what was learned was developed.

Act

In this final step, a decision was made to adopt, adapt, or abandon the TeamSTEPPS intervention. On the contrary, if the program had a negative or insignificant effect, it would have been discarded. Knowledge acquired from this program was documented for use in future initiatives.

CHAPTER 3: PROJECT DESIGN AND METHODS

In this implementation project, the perceptions, attitudes, and competencies of registered nurses on a medical-surgical unit were compared before and after an 8-week TeamSTEPPS training program. The overall aim of the project was to improve the nurses' attitudes and perceptions towards teamwork and communication.

Organizational Need

The organizational need was established based on a meeting conducted with the director of education and simulation development at the large Hospital Medical Center in the western United States. Based on the conversation, the organization's medical surgical department had no staffing and safety issues (K. Rupp, personal communication, January 20, 2019). The department had implemented procedures to minimize sentinel events and practice issues. In addition, the relationship between the management and staff members was good (K. Rupp, personal communication, January 20, 2019). However, the department was experiencing challenges relating to communication and teamwork within the department. According to the director, "many staff members were dissatisfied with the communication and teamwork practices in the department" (K. Rupp, personal communication, January 20, 2019).

Organizational Support

Organizational support was obtained after presenting the idea to the management. During the presentation, an effort was made to demonstrate the potential benefits of the initiative to the organization, patients, and staff members. Nursing administration provided full support for the project. The facility's Institutional Review Board determined that the project would receive exempt status, as it did not meet the 'Common Rule' definition for human subject research. I received an organizational support letter and practicum site IRB approval.

Project Stakeholders

Stakeholders that were involved in this program included registered nurses (RNs) who received the training, the leadership of the medical surgical department, the director of education and simulation development, the overall leadership of the organization, and suppliers of the educational materials. The enhancement of the project's success needed sufficient engagement of key stakeholders in the organization (O'Rourke, Higuchi, and Hogg, 2016).

Barriers and Facilitators

One key facilitator for the implementation of the project was adequate staffing, which allowed for the development of staffing schedules without adversely affecting care delivery (K. Rupp, personal communication, January 20,2019). Another facilitator was the organizational culture that supports evidence-based practice. An organization must have strong organizational culture to support the implementation of EBP initiatives (Bennett,2017). The facilitators were leveraged to ensure seamless execution of the project. Potential barriers to change included power struggles, poor workforce planning, and adequate buy-in. To address these barriers, the program was communicated adequately, staff members were involved in decision-making, and effective planning of the workforce was done. Based on Truglio-Londrigan and Slyer (2018), shared decision-making creates a sense of ownership among staff members hence minimizing resistance to change.

Project Schedule

The project was completed within ten weeks. A Gantt chart illustrating the schedules and activities was provided in Appendix C.

Resources Needed

The resources required included a venue, trainers, training manuals, and other training equipment and tools. Financial backing was granted by the executive team at the facility. The development of a team of internal TeamSTEPPS trainers in the medical surgical unit was accomplished over six months. The internal trainers instructed the evidence-based practice TeamSTEPPS program to all of the medical surgical unit. Table 1 summarizes the budget table for the initiative.

Project Manager Role

I was the project manager for this DNP scholarly project. Several duties were performed. The first one entailed planning for the program by developing the schedules and budgets. The planning also encompassed developing objectives and the system for evaluating outcomes. Second, the manager was required to manage communications during the implementation of the initiative (Kodama & Fukahori, 2017). Specifically, the project manager was expected to present progress reports and develop the final project report. Third, the project team manager fostered teamwork during the implementation. Furthermore, the manager was required to manage any risks that may have become apparent. Last, the manager's role encompassed managing the initiative to ensure compliance with best practices.

Plans for Sustainability

It is imperative to sustain a project or its benefits over the long-term. In this program, one sustainability strategy was to develop future communications and teamwork training programs based on the TeamSTEPPS 2.0 approach. The training of a program is one of the most effective strategies for sustaining change (Silver et al., 2016). Another strategy was the utilization of

mentoring. Last, the teamwork and communication practices were included in the organizational procedures and regulations.

Project Vision, Mission, and Objectives

The vision of the project is to create a medical-surgical unit in which nurses appreciate teamwork and actively engage in team-related activities. The mission entails utilizing the TeamSTEPPS framework to advance nurses' attitudes and perceptions towards teamwork. Whereas the vision communicates where the organization wishes to be or what it wants to attain, the mission details the process of how to get there. Therefore, in this evidence-based implementation project, the vision encompasses the creation of a culture that not only values teamwork but also actively pursues it. In contrast, the mission involves using the TeamSTEPPS model to promote teamwork attitudes and perceptions among the nursing staff (TeamSTEPPS, 2017). The objectives of the project are to assess nurses on their teamwork competencies, to implement a TeamSTEPPS initiative to improve nurses' perceptions and attitudes towards teamwork and to collect pre- and post-implementation survey data to establish the effectiveness of the initiative (TeamSTEPPS, 2017).

The project's mission and vision statement are in line with the mission and vision of the organization. The vision of the organization is to become a leader in the provision of quality care, education, training, and the development of new methods for preventing and treating complicated health care challenges (Organizational leadership, personal communication, 2019, 2019). The mission emphasizes the commitment to the furtherance of the healing ministry of Jesus Christ by dedicating resources to delivering quality, compassionate, and affordable care, advocating for patients and partnering with the community to promote the quality of life (Organizational leadership, personal communication, 2019). The mission and vision of the

project align with those of the organization since both are geared towards improving the quality of care and empowering health care providers. In this project, the improvement of teamwork perceptions and attitudes is hoped to improve service quality and safety while advancing the interests of nurses.

The short-term objectives of the project include implementing the TeamSTEPPS framework and using it to improve staff members' perceptions and attitudes towards teamwork. Over the long-term, the project intends to institutionalize the TeamSTEPPS model so that it can be used to orient new staff members in the organization (TeamSTEPPS, 2017). More importantly, it is hoped that positive perceptions regarding teamwork obtained through the program will persist through the adoption of sustainability programs (Lee et al., 2017). However, there are no risks involved in providing training to the organization. There are more risks associated with not providing TeamSTEPPS training. The impact of not implementing this program is a loss of potential gains with regard to patient safety. Secondary missed opportunities if TeamSTEPPS is not implemented may include poor workplace relationships within the department, and a reduction in job satisfaction for nursing and ultimately turnover. There may also be a missed opportunity to impact patient satisfaction if TeamSTEPPS is not implemented. The risks and unintended consequences of the project may include high operational costs and a change of focus from patient care to teamwork. However, when the project is properly managed, planning the process before the start of gathering the requirements, the risks are less likely to appear.

PICOT Question

The following PICOT question served as the basis for the DNP project: For medical-surgical nurses in a large hospital medical center, how will the implementation of TeamSTEPPS

impact perceptions and attitudes towards teamwork and communication, compared to current practice, in 8-10 weeks?

Population

The population for the project was composed of medical-surgical nurses. Twelve individuals were selected to take part in the project as participants. All twelve nurse participants completed the project. The process of recruiting the participants was face-to-face and it entailed approaching nurses, both during the night and day shifts but not on weekends, on the medical-surgical unit. The nurses were approached when they appeared not be involved with a patient to disrupt the normal operations of the unit. When approaching the nurses, I used an implied consent Chamberlain University cover letter that had the DNP student project leader's name and the name of the project. Selected nurses were from the medical-surgical unit and not any other specialty department. As a final step in the recruitment process, the DNP student project leader left an email and cell phone number as points of contact for the nurses who were interested in participating in the project.

The selection of participants and their involvement did not require informed consent. Nevertheless; participation in the project was voluntary. In fact, participation in the project implied consent when the participants agreed to complete the questionnaires. The primary characteristics that the participants shared related to the level of education and their employment as medical-surgical nurses in the selected unit. The inclusion criteria included registered nurses with a BSN or a higher level of education and only staff of the facility. No float, travel or PRN nurses were included. The exclusion criteria excluded nurses with Associates Degree in Nursing (ADN) and nurses working with another unit besides the medical-surgical unit. The recruitment process did not consider age, sex, or years of experience. The demographic elements were not

relevant to the projects target sample. However, since the level of education is likely to influence participants' responses, it was decided that the participants should have a certain level of educational qualification (BSN or higher degree of education).

Intervention

The proposed intervention encompassed implementing a TeamSTEPPS 2.0 educational program to improve teamwork and communication. The practice change included educating and implementing Situation Background Assessment Recommendation (SBAR), I am Concerned, I am Uncomfortable, This is a Safety Issue (CUS) combined with the Two-Challenge rule, Brief, Huddle, and Debrief. Data consisted of pre and post staff knowledge of SBAR, CUS, Two-Challenge rule, Brief, Huddle, and Debrief, teamwork, and communication (TeamSTEPPS, 2017). Staff was prepared to implement TeamSTEPPS after each staff member attended a training session.

TeamSTEPPS 2.0 is an evidence-based set of teamwork tools, aimed at optimizing patient outcomes by improving communication and teamwork skills among health care professionals (AHRQ, 2017). Available scholarly evidence demonstrates that this intervention improvesteamwork. Sweigart et al. (2016), found that TeamSTEPPS improved research participants' attitudes towards leadership, communication, situation monitoring, and mutual support, all of which are dimensions of teamwork. In another study, Cooke (2016) found that TeamSTEPPS possesses the potential of enhancing teamwork in health care settings. This project also examined how staff members have to embrace behavior change to have effective teamwork. Lee et al. (2017) found that TeamSTEPPS sustains teamwork over the long-term in an organization.

Comparison

Initially, the organization was using SBAR for nurse - nurse handoff and provider notification. (SBAR) stands for Situation, Background, Assessment, Recommendation. SBAR is a technique that can be used to facilitate prompt and appropriate communication. According to Körner et al. (2015), "the perceived lack of effective communication and teamwork is critical since it adversely affects the nursing staff and inhibits the ability of the organization to offer patient-centered care" (p.1). There was room for improvement due to perceived lack of teamwork and communication within the unit. Additionally, there was evidence-based literature to support implementing TeamSTEPPS to improve communication and teamwork on the medical-surgical unit. Having effective teamwork leads to improved team behaviors, improved staff attitudes, reduction of errors, and improved communication (Jones, Podila, & Powers, 2015). The comparison to the proposed intervention was important concepts for the medical-surgical nurses to develop and the DNP project was a much-needed initiative.

Outcome

The outcome of interest related to the improvement or lack of improvement in terms of the nurses' perceptions and attitudes towards teamwork. To collect data, self-reported questionnaires were used to measure the nurses' knowledge of TeamSTEPPS based upon the education session, immediately prior to and after each session. The pre and posttest questionnaire was developed by AHRQ and utilized the Likert scale rating system with the following options; 1 = strongly agree, 2 = agree, 3 = neutral, 4 = disagree and 5 = strongly disagree. The tools measure knowledge about teamwork and communication. The questionnaire was based on three tools: the 30 questions found on the Teamwork Attitude Questionnaire (T-TAQ), 35 on the TeamSTEPPS Teamwork Perception Questionnaire (T- TPQ) and 23 questions

on the Team Performance Observational Tool. The nursing participants were required to place the completed pre- and post-implementation questionnaires and seal them in envelopes to ensure the questionnaires remained anonymous. Baker et al., (2017) evaluated T-TAQ and found that it is reliable and valid. Similarly, Castner (2015) examined T- TPQ and The Team Performance Observational Tool and established that it contained reliability and consistency. The questionnaires were administered using a pen and paper. Each participant took thirty minutes to complete both questionnaires. The TeamSTEPPS Team Performance Observational Tool was completed by the director of the medical-surgical unit and director of Education pre and post surveys (Appendix E). Demographic data was not collected as it does not relate to the PICOT question.

Time frame

The implementation phase of the project was conducted and completed within a period of ten weeks.

Feasibility

The project was feasible and completed within the ten-week timeframe. Through the creation of the required budgets and schedules, the TeamSTEPPS program was executed with ease. The key aspects of the implementation encompassed identifying trainers and developing a timetable to guide the educational program. It was possible to complete the training within the allotted time. The sessions required the program to be completed at a maximum of 2 hours of time. Flexibility was built into the project to ensure that the project team could alter schedules to ensure that all the tasks were completed within the required period. Like other projects, the implementation of the TEAMSTEPPS initiative was faced with barriers such as lack of support, staff resistance, and funding challenges. To address these issues, it was important to engage all

the internal stakeholders and ensure that the concerns they had were adequately addressed (White, Butterworth, & Wells, 2017). Last, participants were continually encouraged to ensure the project tasks were completed in time, and the enhance completion motivation.

Sample and Setting

The project encompassed using the TeamSTEPPS framework to improve perceptions and attitudes towards teamwork within the medical-surgical unit. The twelve samples selected to partake in the project were medical-surgical nurses. In total, twelve nurses were chosen through a convenience sampling technique to take part in the training sessions. The setting for this project was a medical-surgical unit in a large hospital medical center in the western United States. The unit has fifty beds, including six private rooms, which were used to care for patients with a higher acuity of medical-surgical needs. The nursing staff was composed of registered nurses, certified nurse aides, physicians, and other health professionals to develop and implement individualized patient care. The typical client assigned to the medical-surgical unit was an acutely-ill or elderly patient recovering from a surgery or suffering from diverse medical issues.

The vision and mission of the unit were aligned with those of the organization. The vision was to become a leader in the provision of quality care, education, and training (Organizational leadership, personal communication, 2019). The mission stressed a commitment to the furtherance of the healing ministry of Jesus Christ (Organizational leadership, personal communication, 2019). The organizational structure unit was headed by a director, supported by various managers and executive leadership. The shared governance structure had been flattened enough to reduce bureaucracy and enhance staff engagement. As a result, it was easy for the management to obtain feedback during its communication processes. A strong organizational culture developed in the unit. Specifically, staff members had developed friendships and

exhibited respect for each other. The organization did not have staffing issues. However, a key weakness associated with the culture of the medical-surgical unit was poor teamwork and collaboration. The objective of this project was to address this problem.

Implementation Plan/Procedures

The implementation process involved several critical steps. The initial step entailed defining the project and planning. In this phase, it is important to define the scope and the objectives of the program and develop the budget, schedule, and communication and risk management plans. The scope of the proposed project encompassed delivering a TeamSTEPPS educational program to improve teamwork and communication in a medical-surgical unit. Therefore, the plans and schedules developed should focus on the intervention being implemented. After the planning phase, the next initiative encompassed communicating the program to the key internal stakeholders who include the medical-surgical nurses, the nursing management, nursing executives, and the support staff. The goal of the communication is to inform and convince the stakeholders that the planned project is imperative. It is important as it gives an opportunity for internal stakeholders to adopt roles in the implementation process.

Once key individuals understood what the project is all about, the subsequent process involved creating the project team. The team, was headed by a project leader, was required to oversee the implementation process, communicate progress, and address any issues that might emerge. With a team in place, the following step was choosing the program participants. Essentially, the project encompassed delivering an instructional intervention to medical-surgical nurses. Besides choosing the DNP project participants, it is important to obtain the materials required to carry out the project. Since the project focused on TeamSTEPPS that education was a necessary part of the project implementation. The education focused on teamwork,

communication and strategies that were implemented, thus the results of the nursing staff demonstrated behavioral changes to the implementation. The team was expected to administer pre-implementation questionnaires that were derived from the instruments identified (Appendix D & E). Materials such as manuals, pamphlets, and online multimedia content was procured. The rationale behind the collection of this data is to establish the initial perceptions and attitudes of nurses towards teamwork and communication on the medical-surgical unit. Thereafter, the education intervention started. Here, selected instructors were expected to utilize the TeamSTEPPS model to teach teamwork and communication (TeamSTEPPS, 2019). The teaching strategies utilized were varied to enhance knowledge acquisition and retention. Similarly, both formative and summative assessments were applied to determine the level of understanding realized.

When the educational intervention was complete, the participating nurses were expected to answer the post-intervention questionnaires. It is vital to note that this is the same questionnaire that was administered before the intervention. After administering the post questionnaire, the data obtained was cleaned by removing incomplete questionnaires and those that had errors. This process paved the way for the data analysis process. Here, various quantitative analyses were performed to establish variance between the pre- and post-implementation scores. By doing so, I was attempting to establish whether the intervention resulted in improved teamwork, communication, attitudes and perceptions.

In the final closing phase, I compiled the findings and write a report containing the recommendations. Based on these recommendations, the organization can decide to adopt TeamSTEPPS as part of its learning and development program. I advised the organization regarding strategies that might be used to sustain the program. The report included lessons that

could be used to sustain future programs. The idea is to take advantage of the lessons learned and to avoid mistakes committed in future initiatives.

Data Collection Procedures

The type of data that was produced by the instruments selected was Ordinal summary statistics mainly because the instruments use rating scales. The TeamSTEPPS Teamwork Perceptions Questionnaire (T-TPQ) questionnaire, for example, asks respondents to answer a set of questions by choosing one answer among strongly agree, agree, neutral, disagree, and strongly disagree. Likewise, the Teamwork Attitudes Questionnaire (T-TAQ) uses the same scale to record participants' answers. The Team Performance Observation Tool (T-POT) was used in evaluating participants also using a rating scale with five levels – very poor, poor, acceptable, good, and excellent. Although, ordinal data tends to have a meaningful order, the intervals between the values might differ (Jakobsson, 2004).

Extraneous variables, which are a real concern in implementation projects, are factors that influence the dependent and not the independent variable. In other words, these are variables that affect the outcome of a project although they are not the variables of interest (Motulsky, 2016). Therefore, it is important to control them to establish whether it is the intervention that is causing the change observed. To control extraneous variables in the proposed project, three strategies would be used. To begin with, for the population to partake in the project, it will be limited to nurses within the medical-surgical unit. Limiting the population helps to control extraneous variables by standardizing the participants' backgrounds (Skelly, Dettori, & Brodt, 2012). Second, participants were required to complete a baseline measure, in the form of pre-implementation survey, before the intervention. Lastly, conditions will be standardized by, for

example, asking the participants to study the TeamSTEPPS program only for the duration of the project.

To examine the data collected, the pre- and post-intervention data will be described using medians and interquartile ranges. To do so, the Wilcoxon test will be computed. The Wilcoxon signed-rank test is the nonparametric test equivalent to the dependent t-test (Kim, 2015). As the Wilcoxon signed-rank test does not assume normality in the data. Data collection was anonymous therefore the paired *t*-test was not utilized. The paired *t*-test is used to compare two sets of scores that come from the same participants.

The plan for implementation and evaluation will involve some steps. In the second week, the participants were selected, and the pre-implementation questionnaire administered. Weeks three through eight, the TeamSTEPPS program commenced. In TeamSTEPPS training sessions, the participants were taught about teamwork and its dimensions. In the eight week, the training program was complete. Thereafter, towards the end of that week, the post-implementation data was collected. In week nine the data was analyzed. Week ten was finalizing the project and reporting. The result of the data was aggregated in a written report and submitted to the executive nursing management leaders of the organization. The organizational leaders made the decision to sustain the practice change and the associated actions to pave the way for sustaining the practice change across the organization.

Recruitment and Selection

The recruitment occurred during night and day shifts but not on the weekends. To do so, I approached nurses at the times when they were not busy to avoid interfering with their workflow. During this face-to-face interaction, I explained the project and handed over the Chamberlain

approved cover letter to the nurse. Besides an overview of the project, the cover letter had the project leaders contact information to enable interested participants to call or send an email. The inclusion criteria involved registered nurses (RNs) with a Baccalaureate Science of Nursing (BSN) degree or higher. Concerning the exclusion, participants could not be in possession of an Associated Degree (ADN) or work for another department other than the medical-surgical unit. The approach to be implemented in the project entailed administering two questionnaires and compare pre- and post-implementation scores. This approach was preferred as it required less time, ease of implementing, was objective, and allowed the comparison of two groups of data. Furthermore, the findings of the project would be generalized to other settings. Regarding timelines, the pre-implementation data was implemented three weeks before collecting the post-implementation data in week six after the completion of the intervention.

Data Analysis Plan

The evaluation of the proposed change project entailed comparing teamwork perceptions and attitudes before and after the implementation of the TeamSTEPPS program. The data collected was analyzed using the Wilcoxon test. The Wilcoxon test is also referred to as the Rank Sum test, was used to compare two paired groups. Essentially, it computed the difference between pair sets and examined those differences. Each participant's pre-implementation scores were compared to the post-implementation scores using the Wilcoxon test to determine the effectiveness of the intervention.

Instrumentation

Two instruments were used in the project: the team attitude questionnaire (T-TAQ) in Appendix D and the team perception questionnaire (T-TPQ) in Appendix E. To start with, T-TAQ was the chosen tool used to collect participants' attitudes towards teamwork. The tool

contained thirty items and one open-ended question in which the respondent provided additional comments. The thirty questions were grouped into five categories: team structure, leadership, situation monitoring, mutual support, and communication. There were six items under each category. T-TAQ utilized a 5-level scale: strongly agree, agree, neutral, disagree, and strongly disagree. When scoring, strongly agree, agree, neutral, disagree, and strongly disagree represented the values 5, 4, 3, 2, and 1, respectively. Therefore, the highest total score a participant could have at 150 while the minimum was 30. By assigning values to those responses, conducting statistical analyses became easy.

On its part, the team perception questionnaire (T-TPQ) was used to collect data regarding participant's perceptions towards teamwork. Like T-TAQ, a respondent was expected to respond to the items (questions) by choosing from strongly agree, agree, neutral, disagree, and strongly disagree. However, in contrast to T-TAQ, T-TPQ did not have an open-ended question. In addition, it had thirty-five items instead of thirty. The thirty-five items were also grouped into five categories: communication, mutual support, situation monitoring, team structure, and leadership. Since the items were spread equally, each category had seven items. During scoring, the five levels were assigned the values 1 (strongly disagree) to 5 (strongly agree). Consequently, the highest score a participant could attain was 175 while the minimum was 35. The two instruments, T-TAQ and T-TPQ, were used with permission (Appendix D and E). questionnaires. A significance level of $p < .05$ was established for this project. Ordinal data was collected from the TeamSTEPPS the surveys. The TeamSTEPPS Teamwork Perceptions Questionnaire (T-TPQ) questionnaire, for example, asks respondents to answer a set of questions by choosing one answer among strongly agree, agree, neutral, disagree, and strongly disagree

(Elfil & Negida, 2017). Likewise, the Teamwork Attitudes Questionnaire (T-TAQ) uses the same scale to record participants' answers. The Team Performance Observation Tool (T-POT) will be used in evaluating participants also using a rating scale with five levels – very poor, poor, acceptable, good, and excellent. Although, ordinal data tends to have a meaningful order, the intervals between the values might differ (Jakobsson, 2004). Data analysis was conducted using Statistical Package for Social Sciences Version 22.0 (SPSS) software (SPSS Statistics 22.0).

Instrument Reliability and Validity

The T-TPQ and the T-TAQ have been tested for reliability and validity. Baker et al. (2010) conducted a study to examine T-TAQ to establish whether it is reliable and valid. The pilot test version of the instrument was administered to 495 respondents derived from different health care institutions (Baker et al., 2010). Based on classical item statistics, thirty items were selected for inclusion as they exhibited high levels of validity and reliability (Baker et al., 2010). It is the thirty items that made up the current T-TAQ instrument. Therefore, Baker et al. (2010) concluded that T-TAQ is reliable and valid.

Castner (2012) examined T- TPQ and established that it contained reliability and consistency. In the study, the researcher administered the questionnaire to 456 bedside nurses. The findings showed internal consistency reliability of .83-.94 and overall reliability of .93 (Castner, 2012). The study also confirmed a hierarchical relationship 3-factor sub-scale structure, which explained 64% of the variance and acceptable factor loadings. The analysis included a secondary 5-factor structure that indicated conceptually and statistically coherent skills and behavior sub-scales (Castner, 2012). I confirmed discriminant validity with control over practice and self-esteem as stated in Castner's article (Castner, 2012). Overall, I found that T-TPQ was a reliable and valid tool that can be used to assess hierarchical teamwork relationships and teamwork behaviors and skills.

Ethics and Human Subjects Protection

This project received approval from the organization's Institutional Review Board in May 2019. Although the proposed project was exempt at the practicum site, informed consent was requested before approval of any participation in the project. Participation in the project was voluntary. To ensure this, it was necessary to disclose information about the project. The disclosure included the aims and procedures involved in the project and the potential adverse consequences that participants might face. In the project, the potential negative effects were minimal. Essentially, it is necessary to ensure that the potential participants had the capacity to make decisions regarding whether to partake in the project or not (Hall, Prochazka, & Fink, 2012). No identifiable information or items were used in the project. The NIH certification (National Institute of Health) was completed in February 2018 (Appendix M). Elements of the NIH training included ethical and regulatory principles of research, obtaining informed consent and protecting the privacy and confidentiality of the participants was essential. During the recruitment phase, participants were informed in details about the project. They were then left to decide to participate in the project. In the implementation of project activities, it was important to secure the privacy and confidentiality of the data obtained from the participants. To this end, no identifiable information was used to identify the participants. In addition, the data obtained was used for the projects implementation purposes only. More importantly, the data was not disclosed either intentionally or unintentionally to third parties without the express approval of the participants. To ensure confidentiality and privacy in this project, electronic data was stored on a password-protected and encrypted USB drive. The password was only known to me. Paper-based data was stored in a locked filing cabinet. Besides storing the information securely, the completed questionnaires underwent a process of de-identification in which personal information

or information that could be used to identify the participant was removed. Once seven years' elapse, the physical records will be destroyed. Additionally, a computer program will be used to erase the drive of any remaining unintentional or hidden identifiers.

CHAPTER 4: RESULTS AND DISCUSSION OF DNP PROJECT

A critical step in the implementation of EBP projects was to analyze results to establish the effectiveness of the intervention. In this project, the computation and comparison of the participant's questionnaire responses before and after the implementation of the program were done to determine whether TeamSTEPPS helped to improve communication and teamwork within the unit. This section offers an overview of the methods and procedures followed, summarizes the sample and settings characteristics, and lists the major findings.

Summary of Methods and Procedures

This was a scholarly DNP change of practice project that relied on the methods of natural sciences to produce numerical data that was analyzed through statistical means to lead to the conclusions (Rahman, 2017). Quantitative studies focus on discovering facts about something with the assumption of a fixed reality. The main advantage of quantitative approaches is that they minimize personal judgement (Rahman, 2017). Consequently, they produce evidence that could be utilized to guide changes in nursing and health care environments. Descriptive statistics were used to organize and determine the frequency and percentages of the numerical ratings, the distribution of the survey data, and the sample characteristics (Elfil & Negida, 2017). The descriptive correlation design provided a plan for data collection and correlation analysis to determine a relationship between the medical-surgical nurses' perceptions and attitudes in teamwork and communication. Descriptive statistics identify the frequency, means, and standard deviations of the sample characteristics and provide a detailed representation of the sample data before assessing the findings in relation to the project hypotheses (Elfil & Negida, 2017). Since the project encompassed comparing pre- and post-implementation surveys, it was categorized as

an evidence-based practice change project as nurses' perceptions and attitudes towards teamwork were observed over a ten-week period of time.

The first essential step was to design the implementation of the intervention. As indicated, the project encompassed implementing an educational program based on TeamSTEPPS 2.0 to enhance perceptions and attitudes towards communication and teamwork within a medical-surgical unit. The project team examined the TeamSTEPPS model and developed lesson plans to support its instruction. Since TeamSTEPPS focuses on the dimensions of leadership, communication, leadership, situation monitoring, and mutual support, the lesson plans developed had to include these dimensions as core topics for teaching the selected registered nurses (Cooke, 2016). The creation of the lesson plans also took into account best practices for student-centered learning and instruction. In addition, the project team assembled the required resources to ensure the successful implementation of the project.

As the plan for the intervention developed, I set out to obtain a sample of nurses to take part in the implementation project. The sampling design utilized was the convenience sampling design in which participants are selected based on their availability (Elfil & Negida, 2017). This sampling design is non-probability since there is no randomness in the selection of research participants (Elfil & Negida, 2017). Despite the lack of probability, this approach is advantageous as it is easy to implement and less costly as compared to other approaches. The specific process of implementing the convenience sampling approach entailed approaching nurses during day and night shifts through face-to-face means on weekdays. I made sure to approach nurses who were not busy to avoid disrupting the normal operations of the unit. During the interaction, I provided information about the project and left contact details that an interested nurse could use to get in contact with me. Twelve registered nurses from the medical-surgical

unit volunteered to partake in the project's study. The twelve registered nurses completed the project as well.

After obtaining the sample, the project team administered the pre-implementation survey, which was composed of two questionnaires. The first one was the TeamSTEPPS Teamwork Attitude Questionnaire (T-TAQ), which comprised of thirty Likert-style items and one open-ended question. The thirty items were equally spread across the dimensions of team structure, leadership, situation monitoring, mutual support, and communication, which means that six items evaluated each dimension (Baker, Amodeo, Krokos, Slonim, & Herrera, 2010). The Likert-style items had five responses: strongly disagree, disagree, neutral, agree, and strongly agree (Baker et al., 2010). The respondents filled this questionnaire using paper and pen. The second questionnaire was the TeamSTEPPS Teamwork Perception Questionnaire (T-TPQ) that contained 35 Likert-style items. Similar to T-TAQ, T-TPQ's items were spread across the following dimensions: communication, mutual support, situation monitoring, team structure, and leadership. However, there were seven items for each dimension, and the five-level scoring ranges from strongly disagree to strongly agree.

The two questionnaires differed mainly because T-TAQ measured how staff members approach issues related to teamwork skills (Baker et al., 2010). It also measured the impact of interprofessional education on professionals' knowledge, attitudes, and team skills (Baker et al., 2010). On the contrary, T-TPQ was designed to examine health professionals' perceptions of interprofessional teamwork in their workplaces and group-level team behavior and skills (American Institutes for Research, 2010). The utilization of these questionnaires helped the project team to quantify medical-surgical nurses' attitudes and perceptions towards teamwork before the implementation of the TeamSTEPPS program.

The TeamSTEPPS program was initiated through a preliminary meeting whose members comprised of the project team, research participants, instructors, and the administration. The purpose of the meeting was to provide details about the project, specifically the objectives that aimed to achieve. In addition, the meeting provided an opportunity for the instructors to present lesson plans and timetables. The meeting also laid the foundation for interprofessional collaboration, which is imperative when implementing EBP initiatives. During the meeting, the administration assured the project team of its support, including the provision of the materials and equipment required.

The subsequent eight weeks were dedicated to the implementation of the TeamSTEPPS program. The selected nurses learned content in the areas of team structure, leadership, mutual support, situation monitoring, and communication (American Institutes for Research, 2010). Based on the TeamSTEPPS model, the structure of a team affects processes within the team hence influencing the level of teamwork and collaboration. The availability of effective leadership enables the creation of a vision and commitment towards the common goal (American Institutes for Research, 2010). Mutual support that entails the likelihood of team members supporting each other is key. Team members must have the capability to read situations and respond accordingly. Finally, effective communication supports the sharing of information and ideas (American Institutes for Research, 2010). Communication practices within a team should promote feedback provision.

During the implementation, instructors prioritized the use of various educational strategies to increase knowledge acquisition and retention. Based on Morgan (2014), instructors can increase student success when they use differentiated teaching approaches. Therefore, rather than relying exclusively on lecturing, the instructors utilized strategies such as role-playing,

small groups, and discussions (Morgan, 2014). Differentiating teaching is particularly essential as it ensures that the instruction caters for each learner's unique way of learning. Instructors also used different methods of assessing nurses, including question and answer sessions, discussion posts, multiple choice quizzes, true/false quizzes, portfolios, extended written responses, and peer assessments. In addition to differentiating instruction and assessment, the instructors embraced the student-centered learning approach in which the participants were at the center of the learning process. Consequently, the instructors became facilitators (Morgan, 2014). Placing the learner at the center of the learning process improves knowledge acquisition and retention in addition to making the learning experience satisfying. Due to the adoption of these educational methodologies, the TeamSTEPPS program was implemented effectively and completed in time.

Once the educational segment of the intervention had been completed, the project team administered the two questionnaires (T-TAQ and T-TPQ) again. The objective was to collect data concerning nurses' perspectives and attitudes towards teamwork after going through the program. It was expected that the attitudes and perspectives would improve in line with the evidence in research literature. The filled pre-implementation and post-implementation questionnaires were compared using the Wilcoxon test. I utilized the services of a statistician to compute the variance. Based on classical item statistics, TeamSTEPPS tools exhibit high levels of validity and reliability (Baker et al., 2010). It is the thirty items that made up the current T-TAQ instrument. Therefore, Baker et al. (2010) concluded that T-TAQ is reliable and valid. The project team then conducted a debriefing exercise with the nurses. Debriefing is an essential step in research activities since it provides an opportunity to reflect on the experience and discuss what well and what went wrong (Cant & Cooper, 2011). It is also a chance of identifying improvements for future projects. The formative assessment provided instructional outcomes for

the project initiative. The formative assessment practices were used to check for the project intervention compliance included a variety of informal strategies that were designed for the project trainers to promote the participants thinking and reasoning for demonstrations of professional communication and collaborative cohesiveness amongst the nursing staff (TeamSTEPPS, 2019). The formative assessment aligned with the developmental objectives of the DNP implementation project. It met the varied learning speeds to the participants and the training as appropriate for the current level of the participants in the project (TeamSTEPPS, 2019). In the summative evaluations of the training session the participants were questioned what was learned in the training sessions. Summative assessments are more structured and standardized than formative assessments (Baker et al., 2010). Appendix J references to the TeamSTEPPS performance observational tool that was given to the leaders and in the pre-implementation as well as the post implementation survey (TeamSTEPPS, 2019). This information was collected only as anectodoctal data. The leaders rated improvement to their team. Though the data was not used in the statistical analysis, it was interesting to see how the leaders rated their unit's performance as a team. The participants had to critically think and reflect on the introductory information from the project that had been introduced. This was important to the success and the sustainability to disseminate to the key stakeholders of the organization for the sustainability of the proposal (Lee et al., 2017).

The final steps included reporting the findings to the management of the organization and other stakeholders. Writing a report in EBP change programs is critical as it demonstrates the outcomes of the project. It also helps to document the lessons learned. The project adopted the evidence-based practice change design, which relied on the methods of natural sciences to produce numerical data that was analyzed through statistical means to make conclusions

(Rahman, 2017). Furthermore, the report included recommendations and suggestions for sustaining the project. Some of the strategies preferred for sustaining the project included extending the TeamSTEPPS program to all nurses within the medical-surgical unit. Adopting TeamSTEPPS as a standard tool for promoting teamwork and communication was recommended.

Summary of Sample and Setting Characteristics

The project targeted medical-surgical nurses as the project population. Medical-surgical nursing is one of the largest nursing specialty in the country, and it comprises nurses who practice mainly on hospital units caring for adult patients recovering from a surgery or those who are acutely ill with different diseases and medical conditions. Medical-surgical nurses are regarded as the go-to health professionals in the hospital due to the vast knowledge they possess concerning body systems and disease states. The typical medical-surgical registered nurse serves several patients at a given time, offering services such as educating families, administering medications, admitting new patients, and discharging others while apprising other professionals on the care team to keep them informed and updated.

In addition to being innovative, medical-surgical nurses are expected to be team players and effective communicators. In the current era of interprofessional practice, the medical-surgical nurse is an important team member in the development and implementation of care plans. As a result, the medical-surgical nurse was required to be an effective collaborator, both intra-professionally and inter-professionally. The nurse had to be an effective communicator to be able to function effectively in team settings. Effective communication is also required when interacting with patients and their caregivers and families. It raised concerns when it was established that there were poor communication and teamwork within the medical-surgical

nursing team. Effective teamwork and communication improves the quality of care, reduces the length of stay within the hospital, enhances patient outcomes, increases the quality of the patient experiences, and minimizes nurse turnover (Epstein, 2014). It is for this reason that medical-surgical nurses were selected as the implementation project population for the EBP project.

Subsequent to obtaining approval from the administration, I set out to select nurses to take part in the project based on the inclusion and exclusion criteria developed. According to the inclusion criteria, only registered nurses working in the medical-surgical unit and possessing a Baccalaureate Science of Nursing (BSN) degree or higher were recruited. This means that I only approached nurses with BSNs or higher qualifications in the unit. Based on the exclusion criteria, nurses working in other units and those with associate degrees in nursing (ADNs) were excluded. Demographic factors such as age, ethnicity/race, gender, and nationality were not considered in deciding whether to include an individual in the project or not.

I visited the unit during day and night shifts but not weekends. During these visits, I observed medical-surgical nurses who were not busy helping patients and engaged them about the proposed project. I deliberately approached nurses who were not busy to avoid disrupting the normal service delivery in the unit. The engagement involved informing the nurse about the objectives of the project, project process, anticipated outcomes, role of the participant, and ethical considerations made. I also gave the nurse an opportunity to ask questions and seek clarifications. Towards the end of the interaction, the potential participant was given my contact number and email address. Nurses who were interested in taking part in the project were expected to contact me and consent to the participation.

Twelve registered nurses contacted me agreeing to be participants in the TeamSTEPPS educational intervention to improve teamwork and communication within the unit. The sample

was deemed adequate as it could be used to produce significant findings. The sample size was feasible to work with implementing the project. In line with the student-centered teaching approach, it was imperative for the educationists to keep the sessions small to enhance instructor-student interactions and learner engagement. Since the program was a DNP evidence-based practice change project, the twelve nurses were considered an adequate sample for this DNP evidence-based practice change project. In terms of demographics, eight nurses were female while the remaining four were male. Ten nurses were white, one was Hispanic and the other black. The nurses' ages ranged from 25 to 50, with the average age being 37. All the nurses spoke English, which was necessary for understanding and filling the questionnaires and participating in the lessons. The setting for the project was in a medical-surgical unit at a large hospital medical center in the western United States. An interview was conducted with the director of the unit to establish strengths and weaknesses (K. Rupp, personal communication, January 20, 2019). It was found that the unit had many strengths. One of them was adequate staffing, which was critical for effective nursing care delivery. According to Griffiths et al. (2018), "adequate staffing improves the quality and safety of service offered, lowers staff burnout, increases nurse satisfaction, and lowers turnover" (p.1474). Having adequate staff was essential to the implementation of the TeamSTEPPS program since the twelve nurses could take part in the project without overburdening the remaining nurses (Appendix G).

The unit exhibited an enhanced level of patient safety as there were no sentinel events recorded over the recent past (K. Rupp, personal communication, January 20, 2019). The lack of sentinel events suggested that the organization and staff members prioritized patients. Besides following safety guidelines, staff members occasionally adopted best practices and implemented EBP to enhance the safety of care. The director of the medical-surgical unit also pointed out that

the unit had not witnessed practice issues, which demonstrates adherence to rules and regulations of nursing practice, including ethical codes of conduct. The setting was also ideal for the DNP project since the nursing and executive nursling leadership were willing to support the initiative by providing funding and other resources. Availability of resources was a critical success factor for EBP, and having a setting that could provide them was imperative. Furthermore, the practicum site had modern technology that supported patient care delivery as well as the implementation of the project. For example, simulation and role playing were used to execute the TeamSTEPPS program.

Poor teamwork, poor collaboration, and poor communication were some of the weaknesses identified in the setting (Appendix G). As the nurses were surveyed, they pointed out that teamwork was not evident in the unit. Although ad hoc groups composed of friends were observed, the unit lacked a formalized structure and accompanying practices to support effective teamwork and collaboration. In addition, nurses' perceptions and attitudes towards teamwork were poor (K. Rupp, personal communication, January 20, 2019). A culture of teamwork and collaboration can only be developed when every staff member recognizes that such a culture is imperative to organizational and personal success. The communication practices within the unit were deficient mainly because it was the management conveying instructions to staff members (K. Rupp, personal communication, January 20, 2019). The management did not prioritize obtaining feedback from employees and respond back to employees. Because of these poor communication practices, the level of staff engagement was poor. Consequently, the TeamSTEPPS program was implemented to address the poor communication and teamwork within the medical-surgical unit.

During the planning phase of the project, I created a team to oversee the implementation. It was important to ensure that the team was multidisciplinary to improve decision-making and problem-solving. Having diverse professionals on a team increased the number and quality of solutions presented to solve a problem. After developing the team, the resources required for the implementation were obtained. Instructors chosen to teach the TeamSTEPPS program were identified, trained, and empowered to influence the educational process. The execution of the program started with administering the questionnaires. Thereafter, the participants started to attend TeamSTEPPS educational sessions.

Instructors in the program utilized a variety of teaching strategies to promote learning and knowledge retention. When an instructor utilizes different teaching styles, it allows the student to learn in kinesthic ways that promote a unique learning style for a more optimal outcome of learning (Soper, 2016). Some of the strategies utilized included lecturing, case studies, role-plays, presentations, discussions, and debates. Summative and formative assessments were also incorporated into the program. The differentiation of instructional strategies also made learning sessions interesting and engaging. Besides overseeing the execution of the program, the project team created contingency plans to address the risks that emerged. At the end of the educational program, the participating nurses completed the same questionnaires they had completed earlier. A debriefing session was also held to reflect on the experience and identify lessons for future programs. To evaluate the program, pre- and post-implementation surveys were compared through the Wilcoxin test.

Major Findings

Summary statistics were computed for pre-implementation attitudes (Pretest_Attitudes), post-implementation attitudes (Posttest_Attitudes), pre-implementation perceptions

(Pretest_Perceptions), and post-implementation perceptions (Posttest_Perceptions) in (Table 2). According to the summary statistics, the observations for Posttest_Attitudes had an average of 131.17 (SD = 8.26, Min = 122.00, Max = 146.00). A two-tailed paired samples t-test was conducted to examine whether the mean difference of Pretest_Attitudes and Posttest_Attitudes was significantly different from zero. The observations for Posttest_Perceptions had an average of 150.09 (SD = 12.16, Min = 117.00, Max = 159.00). The observations for Pretest_Attitudes had an average of 109.75 (SD = 41.82, Min = 30.00, Max = 150.00). The observations for Pretest Perceptions had an average of 124.67 (SD = 7.04, Min = 117.00, Max = 141.00).

The result of the two-tailed paired samples *t*-test was not significant based on an alpha value of 0.05, t (12) = -2.03, p = .067, indicating the null hypothesis cannot be rejected. This finding suggests the difference in the mean of Pretest_Attitudes and the mean of Posttest_Attitudes was not significantly different. The test was also conducted to examine whether the mean difference of Pretest_Perceptions and Posttest_Perceptions was significantly different from zero. The result of the two-tailed paired samples *t*-test was significant based on an alpha value of 0.05, t (10) = -8.15, p < .001, indicating the null hypothesis can be rejected. This finding suggests the difference in the mean of Pretest_Perceptions and the mean of Posttest_Perceptions was significantly different. The mean of Pretest_Perceptions was significantly lower than the mean of Posttest_Perceptions. The results indicate that the intervention helped to improve nurses' perceptions towards teamwork.

The two-tailed Wilcoxon signed rank test was used to assess whether there was a significant difference between Pretest_Attitudes and Posttest_Attitudes towards teamwork. According to Conover and Iman (1981), the two-tailed Wilcoxon signed rank test is a non-parametric alternative to the paired samples *t*-test, which lacks distributional characteristics. The

results of the two-tailed Wilcoxon signed rank test were not significant on the basis of an alpha value of 0.05, $V = 18.00$, $z = -1.65$, $p = .099$. Although the median of the Posttest_Attitudes was higher than that of the Pretest_Attitudes, this could be due to random variation. Consequently, it could be concluded that the improvement in the Attitude scores between the pre-test and the post-test cannot be tied to the intervention TeamSTEPPS with reasonable certainty, although it cannot be ruled out altogether either. Although there was some improvement in attitudes, the improvement could have been a result of TeamSTEPPS or could have been a result of pure luck or chance. However, 95% probability that the improvement in perceptions was due to TeamSTEPPS with 67% probability that the improvement of attitudes was due to TeamSTEPPS. Figure 1 illustrates ranked values of Pretest_Attitudes and Posttest_Attitudes based on the two-tailed Wilcoxon signed rank test.

The two-tailed Wilcoxon signed rank test was used to establish whether the TeamSTEPPS program improved nurses' perceptions towards teamwork. After computing the data, the results of the test were significant based on an alpha value of 0.05, $V = 0.00$, $z = -2.80$, $p = .005$. These results indicate that there was an improvement in the nurses' perceptions of teamwork after taking part in the program. They also show that the improvement is not due to random variation but attributable to the intervention. The median of Pretest_Perceptions (Mdn = 123.00) was significantly lower than the median of Posttest_Perceptions (Mdn = 154.00). Figure 2 shows the ranked values of Pretest_Perceptions and Posttest_Perceptions based on the two-tailed Wilcoxon signed rank test.

Overall, the results illustrate that the implementation of TeamSTEPPS 2.0 improves the nurses' perceptions of teamwork. This means that nurses who undergo this program start to perceive teamwork as a positive characteristic of effective workplaces. The positive perception

can lay the foundation for teamwork and collaboration to be adopted and institutionalized within the unit. Although there was a smaller improvement in attitudes, the improvement was not statistically significant. The findings largely supported the evidence provided in the literature review. According to the results, the implementation of TeamSTEPPS improved the nurses' perceptions of teamwork. Additionally, there was an improvement in nurses' attitudes, even though not statistically significant. The evidence available in literature supports the view that TeamSTEPPS improved teamwork and, by extension, communication. The findings aligned with Watson's theory of human caring, which emphasized the need to care, serve, and empower patients and staff members to realize positive outcomes.

CHAPTER 5: IMPLICATIONS IN PRACTICE AND CONCLUSIONS

Implications for Nursing Practice

The project results showed that implementing a TeamSTEPPS program in a medical-surgical unit improved perceptions towards teamwork significantly. It enhanced attitudes towards teamwork, although the enhancement was not statistically significant. These findings had several implications for nursing practice. The findings demonstrated to the nursing leaders that the TeamSTEPPS 2.0 program is an effective tool for enhancing perceptions regarding teamwork within their workplaces. Teamwork is a vital component of hospital nursing safety and quality, and the TeamSTEPPS 2.0 framework exemplified a tool that was used to promote teamwork and collaboration in a medical surgical unit (Castner, 2012). Besides helping to advance intra-professional teamwork among nurses, the framework was used to enhance interprofessional collaboration in which nurses partnered with physicians, therapists, information technology specialists, pharmacists, and other professionals to advance health care. All within the micro, meso and macro systems. The utilization of interprofessional teams within health care environments enhances the quality of care by providing a foundation for holistic care (Körner et al., 2015). Therefore, the findings of this project illustrated how nurse leaders can promote teamwork in their practice.

A secondary implication of the project is that the TeamSTEPPS model can be used to promote communication. Communication is recognized as a key component of teamwork. In the TeamSTEPPS model, communication is one of the dimensions of effective teams (Castner, 2012). Since the findings showed that the model improved teamwork perceptions, it could also be concluded that it enhances communication. As a result, nurse leaders intended to improve communication practices within their organization. The TeamSTEPPS model has shown positive

results. The broader society would be interested in these results as they represent an idea for improving nursing practice and the quality of health care.

Recommendations

Several recommendations are advanced based on the findings realized. First, nursing leaders and health organizations should prioritize teamwork and communication within their workplaces. Effective teamwork promotes the quality and safety of care (Baker et al., 2010). It also improves the work setting hence the enhancing the level of nurse satisfaction and commitment (Baker et al., 2010). Effective communication reduces conflicts, promotes engagement, and improves the likelihood of an organization achieving its care-related goals. Another recommendation is that TeamSTEPPS is an effective framework for promoting nurses' perceptions of teamwork. TeamSTEPPS was used as a model for institutionalizing teamwork and effective communication within organizations. According to Castner (2012), "TeamSTEPPS was a valid and reliable tool for enhancing team skills and behaviors" (p. 186). A fact that this project confirmed.

One of the areas that required closer examination was related to the improvement in nurses' attitudes towards teamwork based on the T-TAQ questionnaire after the implementation of the TeamSTEPPS program. Although this project found improvement, this improvement was not statistically significant. The small sample size used could be one of the reasons for the smaller effect of the intervention TeamSTEPPS on the attitudes of the team. Therefore, a future implementation project should be conducted to a larger sample to measure the effect of TeamSTEPPS on team attitudes. It is important for scholars to expand this project to diverse settings apart from the medical-surgical unit, which was the focus on the EBP project. Examining the effectiveness of the TeamSTEPPS model in other environments would help in

establishing its applicability in those settings. It would also give a more balanced perspective of the model's effectiveness and suitability in health care.

Discussion

Based on the results, the nurses' perceptions and attitudes towards teamwork improved after partaking in the TeamSTEPPS program. Therefore, a key strength of the project was able to demonstrate the efficacy of the TeamSTEPPS model in enhancing teamwork and, by extension, communication. The results indicated that TeamSTEPPS training significantly improved the perceptions and to a lesser extent improved attitudes of communication and teamwork within the unit medical-surgical unit. However, the project had two key limitations. First, this was a rigorous DNP practice change project with a small sample. A small number of participants (n=12), which might explain why some findings were not significant statistically. Another limitation, the project was based in one setting (medical-surgical unit). As a result, the results might not be generalized to other environments.

Plans for Dissemination

I planned to disseminate the results of the project in three ways. The first was to organize a presentation at the institution. The individuals who would be involved in this presentation included nurses, other health care workers, and administrators. Registered nurses would be encouraged to attend the presentation because the findings of the project related to their practice. The Administrator might use the findings to plan, implement, and evaluate future TeamSTEPPS programs sustainability. In fact, the aim of the project was to convince the nurses and the nursing management that TeamSTEPPS is an effective model for improving teamwork and communication within the hospital medical center. Considering that the project had a small sample, initial positive outcomes have been shown. The data from the practice change project

may be what key stakeholders and decision-makers need to implement TeamSTEPPS throughout the organization.

Another method of disseminating the findings was to publish an article in the Online Journal of Issues in Nursing, which is a journal of the American Nurses Association. The selection of publishing as one of the ways of disseminating the findings because publication creates a formal record of the research. Besides, publishing the implementation demonstrated the credibility of the project and presented it as a reference for similar projects in the future. DNP-prepared nurses must advance nursing through scholarship, and publishing. Finally, I would like to present the findings in various conferences around the country. The selected conferences chosen would be those that focus on TeamSTEPPS and how this framework could help enhance teamwork and communication within the health care environment. The conferences I aspire to attend will include nurses, nurse leaders, and health care administrators as the participants.

Conclusions and Contributions to the Profession of Nursing

The lack of teamwork and effective communication are key weaknesses for health care organizations. Organizations that have embraced teamwork and effective communication are able to provide quality care and lower the costs associated with service delivery (Körner et al., 2017). Nurses also experience enhanced job satisfaction and wellbeing (Körner et al., 2017). Patients, as consumers in the health care industry, benefit by accessing quality, patient-centered care (Körner et al., 2017). It was essential to explore ways of addressing the issue of poor teamwork and communication in the medical-surgical unit. Based on the evidence synthesis TeamSTEPPS 2.0 was identified as a potential intervention that could be implemented with ease. An EBP project was developed and implemented by selecting twelve registered nurses through convenience sampling and training by means of the TeamSTEPPS framework. The pre- and

post-implementation evaluation design adopted demonstrated that the TeamSTEPPS improved nurses' perceptions and attitudes towards teamwork and communication. Consequently, it was recommended that the organization adopt TeamSTEPPS as the model for advancing teamwork and communication within its nursing team and unit. The project extended the understanding that the nursing profession had regarding teamwork, communication, and TeamSTEPPS. Specifically, it demonstrated that teamwork and communication are imperative and that the TeamSTEPPS is an effective tool for promotion within a medical-surgical unit. The findings were aligned with the results of other studies conducted in different environments that show the adoption of TeamSTEPPS supported effective teamwork (Cooke, 2016). Nurse leaders should institutionalize TeamSTEPPS 2.0 in their organizations and healthcare.

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Appendices, Tables, and Figures

Appendix A: Summary of Primary Research Evidence

Citation	Question or Hypothesis	Theoretical Foundation	Research Design (include tools) and Sample Size	Key Findings	Recommendations/ Implications	Level of Evidence
Marguet, M. A., & Ogaz, V. (2019). The effect of a teamwork intervention on staff perception of teamwork and patient care on a medical surgical unit. *Nursing Forum, 54*(2), 171–182. https://doi.org/10.1111/nuf.12311	What is the effect of teamwork intervention on the perception of teamwork and patient care?	N/A	Quasi-experimental study Tools: Misscare Survey and Nursing Teamwork Survey (NTS) N=21	Although improvements in teamwork and missed care perceptions were recorded, they were not statistically significant	Suggests that teamwork intervention might improve teamwork and missed care perceptions.	II
Gausvik, C., Lautar, A., Miller, L., Pallerla, H., & Schlaudecker, J. (2015). Structured nursing communication on interdisciplinary acute care teams improves perceptions of safety, efficiency, understanding of care plan and teamwork as well as job satisfaction. *Journal of Multidisciplinary Healthcare, 8*, 33–37. doi:10.2147/JMDH.S72623	What is the effect of structured nursing communication on teams' perceptions of safety, understanding of care plan, efficiency, teamwork, and job satisfaction?	N/A	RCT; Intervention group (n=24) control group (n=38) Tool used: structured interdisciplinary bedside rounds (SIBR)	Structured communication and interdisciplinary teams improved perceptions of safety, efficiency, understanding of care plans, teamwork, and job satisfaction.	Organizations should promote structured nursing communication within interdisciplinary acute care teams.	I
Cooke, M. (2016). TeamSTEPPS for health care risk managers: Improving teamwork and communication. *Journal of Healthcare Risk Management*, 36(1), 35-45	Does TeamSTEPPS improve teamwork and communication among health care risk managers?	N/A	Non-randomized controlled trial N = 17 Teamwork Attitudes Questionnaire (T-TAQ)	Teamwork education tailored improved attitudes toward team structure (p = 0.036); leadership (p=0.302); situation monitoring (p=0.026); mutual support (p0.071); communication (p=.733)	Teamwork education improves attitudes towards team structure, leadership, situation monitoring, mutual support, and communication	II
Lee, S. H., Khanuja, H. S., Blanding, R. J., Sedgwick, J., Pressimone, K., Ficke, J. R., & Jones, L. C. (2017). Sustaining Teamwork Behaviors Through Reinforcement of TeamSTEPPS Principles. *Journal of Patient Safety, 0*(0), 1-5	Does the reinforcement of TeamSTEPPS principles sustain teamwork behaviors?	N/A	Cohort study N=104 Observational Teamwork Assessment for Surgery (OTAS) tool	Leadership (P = 0.016) and communication (P = 0.028) behaviors improved among the nursing staff	Reinforcement of TeamSTEPPS sustains effective leadership and communication	III

Fischer, M. M., Tubb, C. C., Brennan, J. A., Soderdahl, D. W., & Johnson, A. E. (2015). Implementation of TeamSTEPPS at a level-1 military trauma center: The San Antonio Military Medical Center experience. Journal of *US Army Medical Department*, 75-80	What is the effect of implementing TeamSTEPPS at a level 1 military	N/A	Longitudinal non experimental design	The implementation of TeamSTEPPS decreased equipment-related complaints, instrument-related issues, supply issues, personnel issues, preference card issues, and case scheduling issues.	The implementation of TeamSTEPPS reduces some of the challenges encountered in trauma centers.	III
Sweigart, L. I., Umoren, R. A., Scott, P. J., Carlton, K. H., Jones, J. A., Truman, B., & Gossett, E. J. (2016). Virtual TeamSTEPPS® simulations produce teamwork attitude changes among health professions students. *Journal of Nursing Education*, *55*(1), 31-35.	Does the adoption of virtual TeamSTEPPS simulations produce teamwork attitude changes among health professional students?	Experiential learning theory	Pretest–posttest design N= 109 Tools: Teamwork Attitudes Questionnaire (TTAQ)	Virtual TeamSTEPPS improved attitudes towards leadership, situation monitoring, mutual support, and communication (p =< .05)	The adoption of TeamSTEPPS can improve perceptions of teamwork and collaboration.	II
Peters, V. K., Harvey, E. M., Wright, A., Bath, J., Freeman, D., & Collier, B. (2018). Impact of a TeamSTEPPS trauma nurse academy at a level 1 trauma center. *Journal of Emergency Nursing*, *44*(1), 19-25.	What is the impact of the implementation of TeamSTEPPS at a level 1 trauma center?	N/A	Non experimental longitudinal study Tools: Kirkpatrick's 4 levels of learning; Trauma Team Performance Observation Tool (TTPOT)	Teamwork training improved knowledge and self-confidence as well as performance, patient outcomes, and quality of care	It is recommended that teamwork training based on TeamSTEPPS be promoted	III
Obenrader, C., Broome, M. E., Yap, T. L., & Jamison, F. (2019). Changing team member perceptions by implementing TeamSTEPPS in an emergency department. *Journal of Emergency Nursing*, *45*(1), 31-37.	Does the implementation of TeamSTEPPS in an emergency department change team members' perceptions?	Kanter's theory of structural empowerment.	Pre-Post Study Design N = 43 Tools: Teamwork Perceptions Questionnaire (TTPQ); Teamwork Attitudes Questionnaire (TTAQ); Nursing Culture Assessment Tool (NCAT)	TeamSTEPPS training improved perceptions of, and attitudes about, communication and teamwork.	Implementation of TeamSTEPPS can improve attitudes and perceptions of teamwork and communication.	III

Legend: Summary of Primary Research Evidence illustrating the citation, research question or hypothesis, theoretical foundation, research design and sample, key findings, recommendations/implications, and level of evidence.

Appendix B: Summary of Systematic Reviews (SR)

Citation	Question	Search Strategy	Inclusion/ Exclusion Criteria	Data Extraction and Analysis	Key Findings	Recommendation/ Implications	Level of Evidence
Howick, J., Moscrop, A., Mebius, A., Fanshawe, T. R., Lewith, G., Bishop, F. L., & Aveyard, P. (2018). Effects of empathic and positive communication in healthcare consultations: A systematic review and meta-analysis. *Journal of the Royal Society of Medicine, 111*(7), 240-252.	What are the effects of positive and empathic communication in healthcare consultations?	Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)guidelines were followed; Databases searched: EDLINE, CENTRAL, EMBASE, Psych INFO, CINAHL, ProQuest	Inclusion: Randomized trials Patients aged 12 and above Exclusion: quasi-experimental studies and studies with a negative intervention	Two researchers independently screened abstracts and titles. Data was also extracted, and the risk of bias assessed. Quality of evidence was assessed using the GRADE system. From the analysis, 29 studies formed the basis of the research	Findings suggested that empathic and positive consultations improved pain, anxiety and satisfaction	Empathic and positive communications are essential in health care interactions between providers and patients.	I

Legend: Summary of systematic reviews (SR) highlighting the citation, research question, search strategy, inclusion/exclusion criteria, data extraction and analysis, key findings, recommendations/implications, and level of evidence.

Appendix C: Project Schedule

	NR702								NR705							
Activity	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8
Meet with faculty/preceptor	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Project conceptualization	■	□	□	□	□	□	□	□	■	□	□	□	□	□	□	□
Proposal development	■	□	□	□	□	□	□	□	■	□	□	□	□	□	□	□
Project approval	□	□	□	□	□	□	□	□	□	■	■	□	□	□	□	□
Introduction, literature review & methodology	■	■	■	■	■	■	■	■	□	□	■	■	■	■	□	□
Pre-implementation survey data collection	□	□	□	□	□	□	□	□	□	□	□	□	□	□	■	□
Project execution	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	■
Post-implementation survey data collection	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
Data evaluation	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
Results, discussion, and conclusion, & compile	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□

	NR707								NR709							
Activity	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8
Meet with faculty/preceptor	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Project conceptualization	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
Proposal development	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
Project approval	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
Introduction, literature review & methodology	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
Pre-implementation survey data collection	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
Project execution	■	■	■	■	■	■	■	■	□	□	□	□	□	□	□	□
Post-implementation survey data collection	□	□	□	□	□	□	□	□	■	□	□	□	□	□	□	□
Data evaluation	□	□	□	□	□	□	□	□	■	□	□	□	□	□	□	□
Results, discussion, and conclusion, & compile	□	□	□	□	□	□	□	□	■	□	□	□	□	□	□	□

Appendix D: T-TAQ

TeamSTEPPS Teamwork Attitudes Questionnaire (T-TAQ)

Instructions: Please respond to the questions below by placing a check mark (√) in the box that corresponds to your level of agreement from *Strongly Disagree* to *Strongly Agree*. Please select only one response for each question.

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Team Structure						
1.	It is important to ask patients and their families for feedback regarding patient care.					
2.	Patients are a critical component of the care team.					
3.	This facility's administration influences the success of direct care teams.					
4.	A team's mission is of greater value than the goals of individual team members.					
5.	Effective team members can anticipate the needs of other team members.					
6.	High performing teams in health care share common characteristics with high performing teams in other industries.					
Leadership						
7.	It is important for leaders to share information with team members.					
8.	Leaders should create informal opportunities for team members to share information.					
9.	Effective leaders view honest mistakes as meaningful learning opportunities.					
10.	It is a leader's responsibility to model appropriate team behavior.					
11.	It is important for leaders to take time to discuss with their team members plans for each patient.					
12.	Team leaders should ensure that team members help each other out when necessary.					

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Situation Monitoring						
13.	Individuals can be taught how to scan the environment for important situational cues.					
14.	Monitoring patients provides an important contribution to effective team performance.					
15.	Even individuals who are not part of the direct care team should be encouraged to scan for and report changes in patient status.					
16.	It is important to monitor the emotional and physical status of other team members.					
17.	It is appropriate for one team member to offer assistance to another who may be too tired or stressed to perform a task.					
18.	Team members who monitor their emotional and physical status on the job are more effective.					
Mutual Support						
19.	To be effective, team members should understand the work of their fellow team members.					
20.	Asking for assistance from a team member is a sign that an individual does not know how to do his/her job effectively.					
21.	Providing assistance to team members is a sign that an individual does not have enough work to do.					
22.	Offering to help a fellow team member with his/her individual work tasks is an effective tool for improving team performance.					
23.	It is appropriate to continue to assert a patient safety concern until you are certain that it has been heard.					
24.	Personal conflicts between team members do not affect patient safety.					

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Communication						
25.	Teams that do not communicate effectively significantly increase their risk of committing errors.					
26.	Poor communication is the most common cause of reported errors.					
27.	Adverse events may be reduced by maintaining an information exchange with patients and their families.					
28.	I prefer to work with team members who ask questions about information I provide.					
29.	It is important to have a standardized method for sharing information when handing off patients.					
30.	It is nearly impossible to train individuals how to be better communicators.					

Please provide any additional comments in the space below.

Thank you for your participation!

Appendix E: T-TPQ

TeamSTEPPS Teamwork Perceptions Questionnaire (T-TPQ)

Instructions: Please respond to the questions below by placing a check mark (√) in the box that corresponds to your level of agreement from *Strongly Agree* to *Strongly Disagree*. Please select only one response for each question.

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

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

		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Communication						
29.	Information regarding patient care is explained to patients and their families in lay terms.					
30.	Staff relay relevant information in a timely manner.					
31.	When communicating with patients, staff allow enough time for questions.					
32.	Staff use common terminology when communicating with each other.					
33.	Staff verbally verify information that they receive from one another.					
34.	Staff follow a standardized method of sharing information when handing off patients.					
35.	Staff seek information from all available sources.					

Appendix F: Permission to Use PDSA Model

April 17, 2019

Dear Ms. Lewis:

Thank you for your request to use the PDSA Model® in your project. This letter grants you permission to use either the print or electronic [PDSA Model/The Improvement Guide: A Practical Approach to Enhancing Organizational Performance, 2nd Edition]in your research. You may ***reproduce*** the instrument in printed form at no charge beyond the discounted one-time cost of purchasing a single copy; however, you may not distribute any photocopies except for specific research purposes. If you prefer to use the electronic distribution of the PDSA you will need to separately contact Marisa Kelley (mkelley@wiley.com) directly for further details regarding product access and payment. Please be sure to review the product information resources before reaching out with pricing questions.

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Permissions Editor

Appendix G: SWOT Analysis

Strengths • Adequate staffing • Enhanced patient safety (lack of sentinel events) • No practice issues • Availability of funding • Availability of the technology to facilitate effective service delivery	**Weaknesses** • Poor teamwork and collaboration practices • Ineffective communication • Poor leadership styles adopted in the organization
Opportunities • Availability of newer and better information technology tools • Chance to create partnerships with other health care organizations • Favorable laws and regulations being enacted • Possibility to partner with the community	**Threats** • Competition within the health care industry • The ever-changing regulatory environment • Older and diverse client population

Appendix H: Plan for Educational Offering

Objectives	Content (Topics)	Teaching Methods	Timeframe	Evaluation Method
The participants will be able to understand the TeamSTEPPS framework and its principles	TeamSTEPPS	Lecturing Cooperative learning	5 min	Question and answer session
The participants will be able to describe multi-team systems (MTS)	Teamwork	Simulation Role plays	15 min	Multiple choice quiz - Objective #3
The participants will comprehend communication strategies and tools	Communication	Lecturing Small groups	15 min	Discussion posts
The participants will be able to describe methods for facilitating situation monitoring	Situation monitoring	Presentations Discussions	15 min	True/false quiz Objective #3
The participants will be able to understand strategies and tools for mutual support	Mutual support	Lecturing Case method	15 min	Question and answer session
The participants will be able to describe barriers to teamwork	Teamwork	Lecturing Role plays	15 min	Extended written response (essay)
The participants will be able to	Teamwork	Presentations Case studies	15 min	Peer assessment

identify factors influencing team performance				
The participants will be able to explain factors contributing to conflicts and strategies for addressing these conflicts.	Teamwork	Group work Presentations	15 min	Portfolios
The participants will be able to understand effective leadership approaches	Leadership	Lecturing Debate	10 min	Multiple choice quiz-Objective #3

Appendix I: Team Performance Observation Tool

Team Performance Observation Tool

Date: _____
Unit/Department: _____
Team: _____
Shift: _____

Rating Scale *Please comment if 1 or 2.*
1 = Very Poor
2 = Poor
3 = Acceptable
4 = Good
5 = Excellent

1. Team Structure	**Rating**
a. Assembles a team	
b. Assigns or identifies team members' roles and responsibilities	
c. Holds team members accountable	
d. Includes patients and families as part of the team	
Comments: **Overall Rating – Team Structure**	
2. Communication	**Rating**
a. Provides brief, clear, specific, and timely information to team members	
b. Seeks information from all available sources	
c. Uses check-backs to verify information that is communicated	
d. Uses SBAR, call-outs, and handoff techniques to communicate effectively with team members	
Comments: **Overall Rating – Communication**	
3. Leadership	**Rating**
a. Identifies team goals and vision	
b. Uses resources efficiently to maximize team performance	
c. Balances workload within the team	
d. Delegates tasks or assignments, as appropriate	
e. Conducts briefs, huddles, and debriefs	
f. Role models teamwork behaviors	
Comments: **Overall Rating – Leadership**	
4. Situation Monitoring	**Rating**
a. Monitors the status of the patient	
b. Monitors fellow team members to ensure safety and prevent errors	
c. Monitors the environment for safety and availability of resources (e.g., equipment)	
d. Monitors progress toward the goal and identifies changes that could alter the plan of care	
e. Fosters communication to ensure that team members have a shared mental model	
Comments: **Overall Rating – Situation Monitoring**	
5. Mutual Support	**Rating**
a. Provides task-related support and assistance	
b. Provides timely and constructive feedback to team members	
c. Effectively advocates for patient safety using the Assertive Statement, Two-Challenge Rule, or CUS	
d. Uses the Two-Challenge Rule or DESC Script to resolve conflict	
Comments: **Overall Rating – Mutual Support**	
TEAM PERFORMANCE RATING	

Appendix J: AHRQ Permission to Use TeamSTEPPS 2.0 Model

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Agency for Healthcare Research and Quality

May 03, 2019

Dear Ms. Lewis:

This letter conveys permission for you to use the TeamSTEPPS 2.0 Model & questionnaires in your DNP nursing implementation project in your DNP program at the links listed below as you specified in your e-mail to me.

https://www.ahrq.gov/teamstepps/instructor/index.html

https://www.ahrq.gov/teamstepps/instructor/tools.html

Sincerely,

Randie

Randie A. Siegel, M.S.
Deputy Director
Office of Communication, AHRQ

Appendix K: NIH Certificate of Completion

Certificate of Completion

The National Institutes of Health (NIH) Office of Extramural Research certifies that **Kimberly Lewis** successfully completed the NIH Web-based training course "Protecting Human Research Participants".

Date of completion: 02/26/2018.

Certification Number: 2664916.

Tables

Table 1

Budget

Expenses		**Revenue**	
23 Training manuals @ $2.50 per manual	$57.50	Institutional budget support	$657.50
Trainer cost @ $30 per hour for 20 (2- hour training sessions)	$600	Supplies	$200
Cost of trainer	$0		
Training to the 12 participants	$0		
Supplies	$200		
Total Expenses	$857.50	**Total Revenue**	$857.50

Table 2

Summary Statistics Table for Interval and Ratio Variables

Variable	*M*	*SD*	*n*	Min	Max
Posttest_Attitudes	131.17	8.26	12	122.00	146.00
Posttest_Perceptions	150.09	12.16	11	117.00	159.00
Pretest_Attitudes	109.75	41.82	12	30.00	150.00
Pretest_Perceptions	124.67	7.04	12	117.00	141.00

Note. '-' denotes the sample size is too small to calculate statistic.

Figure 1

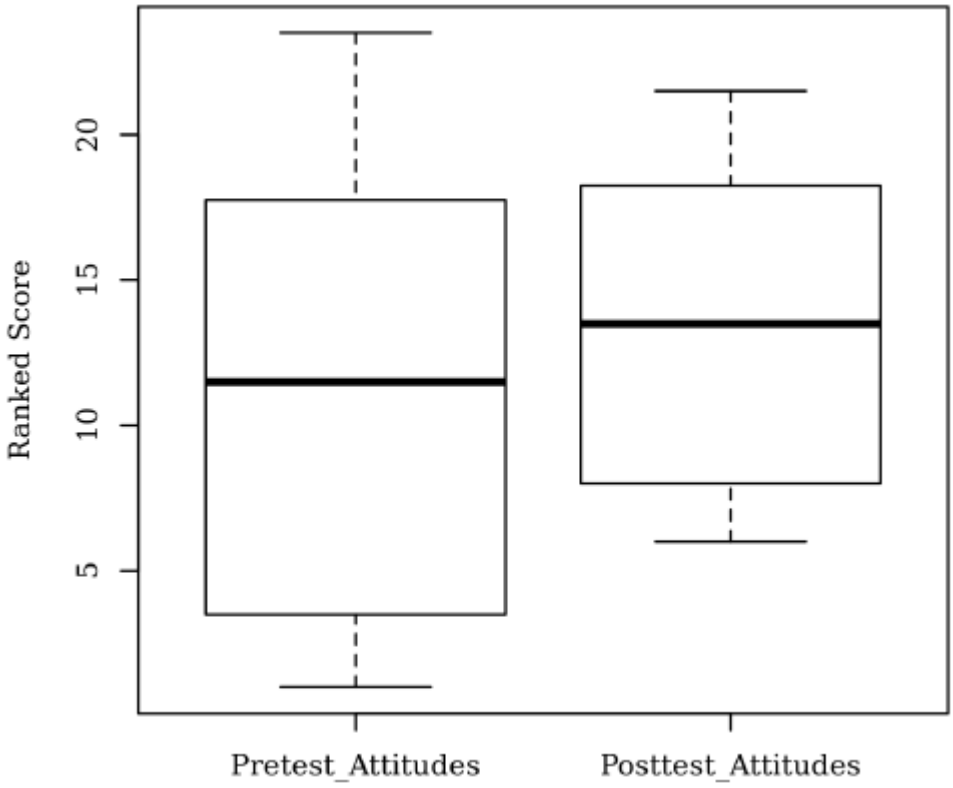

Figure 1: Ranked values of Pretest_Attitudes and Posttest_Attitudes based on the two-tailed Wilcoxon signed rank test.

Figure 2

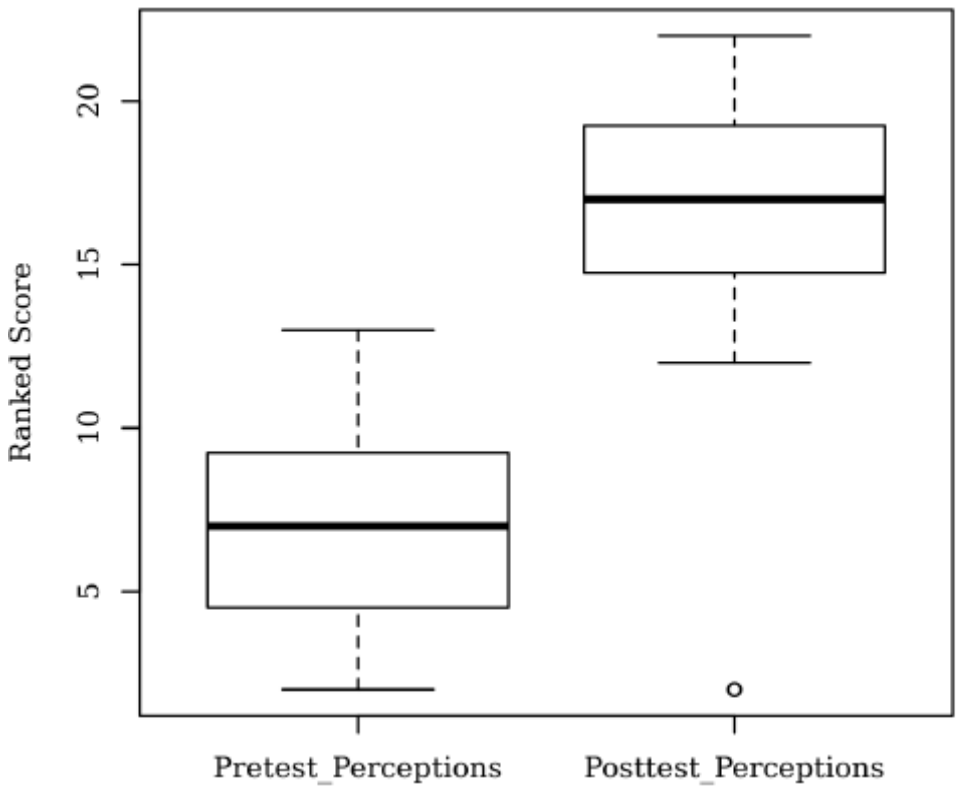

Figure 2: Ranked values of Pretest_Perceptions and Posttest_Perceptions based on the two-tailed Wilcoxon signed rank test.