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Improving Nurse-to-Nurse Handover Through Implementation of Standardized SBAR

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Improving Nurse-to-Nurse Handover through Implementation of Standardized SBAR

by

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A thesis submitted to the faculty of
Gardner-Webb University Hunt School of Nursing
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Abstract

In today's health care environment, nurses are faced with caring for an increased number of patients with more complex issues. In caring for these complex patients, communication among nurses becomes an essential piece of patient care. Handover provides nurses the opportunity to share patient information to achieve positive patient outcomes. When poor patient outcomes became linked to poor communication during handover, recommendations for a standardized handover form emerged. Situation, Background, Assessment, and Recommendations (SBAR) is an example of a standardized handover form which provides structure to the handover process and decreases gaps in patient information. The aim of this descriptive study was to evaluate nurses' perception of the handover process. To guide the study, Imogene King's Goal Attainment Theory provided the framework. The concepts of the goal attainment theory offer a way to organize patient information to meet the needs of the triad of systems to ultimately improve patient care. The study involved the Handover Evaluation Scale (HES) survey which evaluated nurses' perceptions pre- and post-SBAR implementation at a 143-bed hospital. Prior to SBAR implementation, education was provided to introduce SBAR to the registered nurses employed at the facility. Utilization of the SBAR form occurred over a four-week period. Post-SBAR implementation found a significant difference in the quality of information provided during handover while also decreasing documentation time and handover time. This study builds evidence that quality information is provided during handover with the use of a standardized form.

Keywords: standardized SBAR, handover, hand-off, communication, nurse-to-nurse handover, safety, perception

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CHAPTER I

INTRODUCTION

The American health care system is among the costliest in the world. In 2016, the United States spent \$3.3 trillion on health care (Centers for Medicare & Medicaid Services, 2018). Health care in the U.S. also accounts for 17.9% of the nation's Gross Domestic Product (GDP) (Centers for Medicare & Medicaid Services, 2018). Although the cost of health care is among the most expensive in the world, medical errors kill four times more Americans each year than motor vehicle accidents (American College of Healthcare Executives, 2017). Due to the cost of health care, the government has attempted to curb the cost and improve care through legislation. As the government implements health care legislation, health care facilities must adapt to these changes to improve the quality of care.

Over the years, studies focusing on medical errors has shed new light on the cost of errors. *To Err is Human* (1999) highlighted the number and cost of preventable errors. Although this study placed patient errors in the forefront of health care, it did not offer solutions. Over a decade later, a follow-up study was released and identified an alarming number of preventable errors continue to occur (Federico, 2015).

A new movement to reduce errors, improve care, and reduce cost has occurred with the passage of The Patient Protection and Affordable Care Act (ACA). The passage of the ACA tied reimbursements to patient outcomes (Centers for Medicare & Medicaid Services, 2012). As a result of the ACA, facilities must focus on quality care in order to remain fiscally viable. The new health care arena now has a focus on quality rather than quantity.

Although quality has been the focus of health care in recent years, an alarming number of medical errors continue to occur. A 2016 study estimates medical errors results in 250,000 patient deaths every year in the United States (Ranji, 2017). The Institute of Medicine (IOM) (1999) also found that medical errors cost in between \$17 billion and \$29 billion. As medical errors continue to occur, The Joint Commission (2017) has identified poor communication to be a leading issue in medical errors. This report identifies poor communication during handover as a major factor impacting patient safety. The Joint Commission recommends utilizing a standardized report system to minimize medical errors and improve patient outcomes (The Joint Commission, 2017).

While health care has advanced, the complexity of patient care has increased. In an age of increased patient acuity, the need for adequate handovers are essential. The Joint Commission found inadequate handovers to be a leading cause of preventable patient harm (The Joint Commission, 2017). Since the health care system is a complex system, the patient handover process is also complex. This complex process of handovers can occur in a variety of ways. Handover methods may occur in the form of verbal only, from memory only, and both verbal and written. In an attempt to improve patient handover, The Joint Commission recommended a standardized system to be implemented. A standardized handover method reduces loss of essential information and promotes continuity of care (The Joint Commission, 2017). An example of a standardized handover method is a SBAR system. SBAR is a mnemonic for situation, background, assessment, and recommendation and provides a structured framework which promotes patient safety and continuity of care.

SBAR was developed by the military to pass along important information among the ranks. The implementation of SBAR allowed communication to occur openly and without the hierarchy of military ranks (O'Shaughnessy, SBAR (Situation-Background-Assessment-Recommendation), 2015). Removing ranks from the communication process during SBAR provided an environment where essential information can be discussed, and suggestions or recommendations offered based on the situation.

Significance

In the health care continuum, communication is an essential part of patient care. Many health care organizations have a common theme of miscommunication impacting patient outcomes. Nurses have a variety of methods for preserving patient information for handover. Although nurses may have many handover methods, the issue of omitting essential information occurs. A study found notes taken on paper with no standard organization may omit essential patient information (Friesen, White, & Byers, 2008).

Patient handovers are an important feature of patient care. The primary purpose of patient handover is to pass along essential patient care information to another health care provider (Friesen et al., 2008). An effective handover reduces omitted patient information and promotes continuity of care. On the other hand, poor or ineffective handovers may contribute to medical errors and poor patient outcomes. A challenge during handover is to identify methods and implement strategies which promote conveying important information and promote continuity of care (Friesen et al., 2008).

Issues with ineffective handovers can be linked to communication breakdown. Ineffective handovers can result in a number of patient safety issues. The breakdown in communication was the leading root cause of sentinel events reported to The Joint

Commission between 1995 and 2006 (Joint Commission Center for Transforming Healthcare, 2014).

As health care has evolved and become more specialized, patients are more likely to experience a significant number of handovers. “Some nursing units may transfer or discharge 40% to 70% of their patients everyday” (Friesen et al., 2008, p.285). It is estimated that a typical teaching hospital may experience over 4,000 handovers every day (The Joint Commission, 2017). The handover process is an essential piece of patient care and this process begins on admission and continues throughout the patient’s stay.

The handover process is an important factor influencing patient care. The high number of handovers during a patient admission increases the potential for errors. Handovers which lack or omit essential patient information can lead to medical errors and poor patient outcomes. As each handover occurs, the potential for harm is introduced when the nurse receives information that is inaccurate, incomplete, not timely, misinterpreted, or otherwise not what is needed (The Joint Commission, 2017).

While the number of handovers increases along with medical errors, The Joint Commission (2017) has identified inadequate handover communication as a contributing factor in adverse events, including sentinel events. “A study released in 2016 estimated that communication failures in U.S. hospitals and medical practices were responsible at least in part for 30% of all malpractice claims, resulting in 1,744 deaths and \$1.7 billion in malpractice costs over five years” (The Joint Commission, 2017, p. 2).

In another effort to improve patient safety, the World Health Organization (WHO) (2007) released a report focusing on patient handovers. The WHO released recommendations for improving communication during the patient handover process.

This report identified areas where gaps in patient information may occur and strategies to lessen these gaps and improve patient outcomes. One strategy for improvement was to ensure that health care organizations implement a standardized SBAR approach to the handover process in the course of a patient transfer (World Health Organization, 2007).

While both The Joint Commission and WHO have continued to shed light on patient safety and handover communication, another health care organization released a report focusing on handovers. The American Nurses Association (ANA) (2016) identified patient handovers as a critical factor impacting patient care. This report identified miscommunication during handover presented a sizable risk for adverse patient events, such as preventable patient falls, medication errors, and omissions, infections, and pressure-ulcer development (Barry, 2014). The ANA also recommended the implementation of a standardized communication tool such as a SBAR template to reduce the risk of transmitting inaccurate and incomplete information (Barry, 2014). It found that “organizations that have implemented a standardized handover tool have acknowledged significant decreases in patient falls during nursing change of shift” (Barry, 2014, p. 34).

More recently, the Association of Perioperative Registered Nurses (AORN) (2017) released recommendations to improve communication during the handover process. The AORN recognized a high number of handovers occur before, during, and after surgery. Since a poor patient handover can negatively impact patient safety and patient outcomes, the AORN recommended the standardization of the handover process as the first area for improvement (Association of PeriOperative Registered Nurses, 2017).

One of the handover techniques suggested, by the AORN, for standardization of the patient handover process was SBAR.

During the handover process, the challenge was to identify methods and implement strategies which promote conveying important information and promote continuity of care (Friesen et al., 2008). This challenge is rooted in the nurse's perception of the handover process. It may be more challenging to change the handover method of a nurse with a positive perception of the current handover method utilized. On the other hand, it may be less of a challenge to change the handover method of a nurse that has a poor perception of the current handover process. Health care professionals' perception of the benefits of any proposed change find it difficult to accept if the professionals do not believe that recommendations will achieve better patient outcomes or the professional's belief in their own ability to adopt a new behavior (National Institute for Health and Clinical Excellence, 2007). However, a study examining the nurses' perception of utilizing a standardized SBAR resulted in 87.3% of the participants having a positive perception of the handover process (Nagammal, Nashwan, Nair, & Susmitha, 2017).

While the handover process is highly variable with many methods available to pass along patient information to other health care providers, the handover process is an essential piece of patient care. There are many studies focusing on utilizing SBAR for nurse-to-physician communications, however, research focusing on nurse-to-nurse handover utilizing SBAR lacks the same focus. Many organizations recognize the importance of a standardized handover method, yet, it is unclear the number of facilities implementing a nurse-to-nurse standardized handover process.

Purpose

The purpose of this study was to evaluate nurses' perception of handover before and after implementation of a standardized SBAR.

Theoretical or Conceptual Framework

Over the years, the health care system has experienced change. The increase in patient acuity along with caring for the complex patient impacts the patient care process. While the health care environment is continuing to change, the goal of nursing remains the same. The goal of nursing is "to help individuals maintain their health so they can function in their roles" (King, 1981, p. 3). A theoretical framework "is a set of assumptions, concepts, and propositions that form the basis for someone's view on the world. The validity of the theory is tested through research" (Thompson, 2017, ¶7).

Imogene King's (1981) Goal Attainment Theory provides a powerful framework for identifying the factors that influence the interaction between nurses which also impacts patient care. King (1981) developed the Goal Attainment Theory which describes a system of interactions between personal, interpersonal, and social systems. This triad of systems interact to impact the goal of improving the patient's health in order for the patient to function in their role. As these systems align, goal attainment is possible.

The first system is known as the personal system which is the nurse's ability to be aware of their position or role in the patient's care process (King, 1981). This system is influenced by how the nurse perceives information and how gaining knowledge moves toward attaining the goal. The SBAR can assist in tracking patient information and gaining knowledge from the handover process.

The next system in the Goal Attainment Theory is the interpersonal system. The interpersonal system is the interaction between nurses and patients (King, 1981).

Collaboration between these groups is an essential part of reaching the goal of improving patient well-being. Communication is an essential piece of this system. During handover, nurses interact verbally and nonverbally which function to influence the handover process. Utilizing a standardized SBAR provides a systematic approach to handovers and keeps the handover process focused and guided toward the goal.

The last system in this triad is the social system. The social system is interaction with the facility as a whole. This interaction is composed of individuals which use the organization's resources to meet the mutual goal (King, 1981). An organization which implements a standardized SBAR, provides the staff with the standardized tool to attain the goal of improving patient health.

In 1981, King described how the conceptual framework of the Goal Attainment Theory guided the process of utilizing standardized medical records and how goal-oriented nursing records can improve patient care (Figure 1). Utilizing standardized forms similar to SBAR can "provide a continuity of care" and achieve the goal of improving patient health (King, 1981, p. 171). "A Theory of Goal Attainment provides basic knowledge of nursing as a process of interactions that lead to transactions in nursing situations" (King, 1981, p. 177). A standardized record, "provides a systematic approach" to provide quality and achieve goals (King, 1981, p. 177).

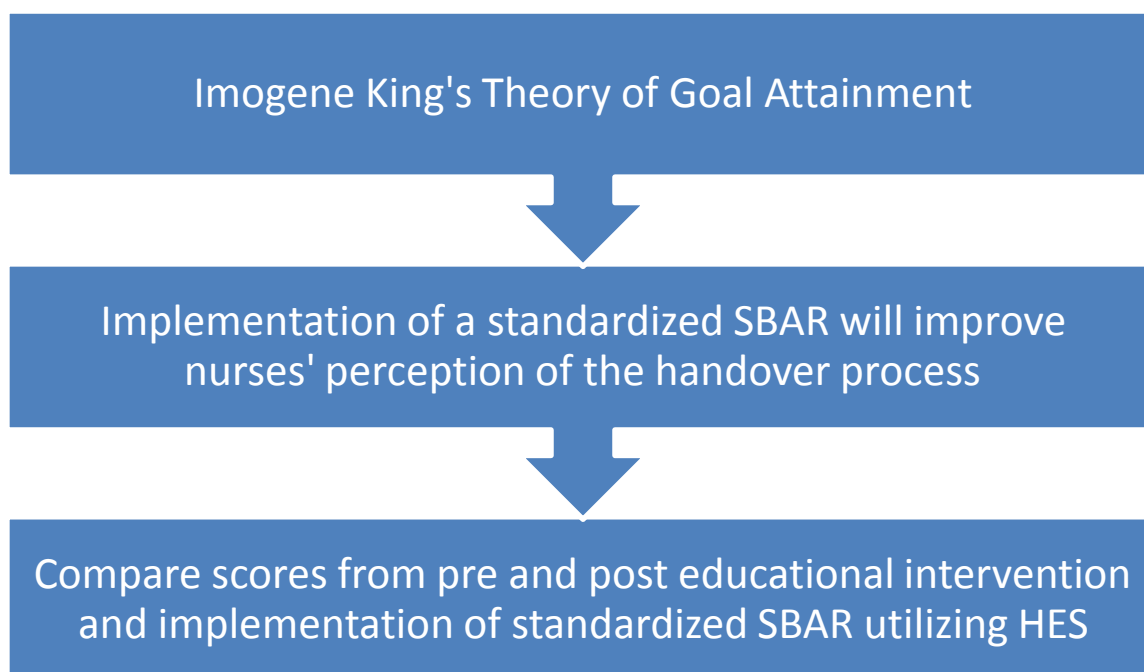


Figure 1. Conceptual Framework of Imogene King's Theory of Goal Attainment

Thesis Question or Hypothesis

What is the effect of SBAR on nurses' perception of the handover process?

Definition of Terms

For the purpose of this research, clarification of terms is needed to state the meaning as it relates to this study.

Handover: also known as hand-off is a transfer and acceptance of patient care responsibility achieved through effective communication. This process of passing patient-specific information occurs in real-time from one caregiver to another or from one team of caregivers to another for the purpose of ensuring the continuity and safety of the patient's care (The Joint Commission, 2017).

Receiver: is the nurse receiving patient information from the sender during the handover process (The Joint Commission, 2017).

Sender: is the nurse reporting patient information to the receiver during the handover process (The Joint Commission, 2017).

SBAR: is an acronym for Situation, Background, Assessment, Recommendation. It is a technique which provides a framework for communication between members of the health care team about a patient's condition (Institute for Healthcare Improvement, 2017).

Handover Evaluation Scale (HES): is a tool developed by O'Connell for the purpose of evaluating nurses' perception of an effective handover process (O'Connell, Macdonald, & Kelly, 2008).

Perception: is the way an individual thinks about a situation or the impression an individual has of a situation (Collins Dictionary, 2018).

Educational Intervention: the researcher utilized a PowerPoint presentation to inform the nursing staff and nurse leaders of the project site on the use of a standardized SBAR during the handover process.

Summary

The health care industry is in a constant state of change. Over the years, due to health care advances, the life-expectancy in the United States has increased. Caring for an aging nation comes at a high cost. As the population advances in age, the number of patients presenting with co-morbidities has grown. These increases have resulted in patients with complex issues requiring complex care. As the complexity of caring for patients grows, the possibility of errors also rises. A 1999 study by the Institute of Medicine (IOM) Committee on Quality of Health Care in America estimated that between 44,000 and 98,000 Americans die each year due to medical errors. As many

health care organizations acknowledge miscommunication as a major factor in medical errors, many facilities continue to be deficient in a standardized handover process. As a result of these high number of errors, nurses must reassess current practices in an effort to reduce the number of errors. SBAR is a technique that can bridge the gap in communication and improve patient outcomes.

CHAPTER II

LITERATURE REVIEW

The handover process is a complex process impacting every aspect of patient care. The purpose of this study was to evaluate nurses' perception of handover before and after implementation of a standardized SBAR. A review of literature based on a variety of subjects impacting the handover process was conducted. Electronic databases searched for literature included: EBSCO, PubMed, ProQuest, Google Scholar, and the University Library. Key words used in a detailed search strategy were: SBAR, standardized SBAR, communication, safety, nurse-to-nurse handover, handover, hand-off, and perception. This chapter will focus on the current literature available as it relates to the topic.

Review of the Literature

Theory

The primary purpose of nursing theory is to improve nursing practice and, therefore; improve the health of the patient, family, and community (Smith & Parker, 2015). Theory also "informs a discipline and helps define the discipline's boundaries" (Killeen & King, 2007, p. 51). Research based in theory can be a mean of achieving evidence-based practice (Killeen & King, 2007).

Imogene King's Goal Attainment Theory provided the framework for a study examining intraprofessional communication and collaboration between the RN and patient during bedside rounding. This qualitative study included three RNs as participants at an urban Chicago Medical Center with 32 nursing units and 920 in-patient beds (Herm-Barabasz, 2015). While developing the education module, the researcher

applied King's Theory of Goal Attainment which "organized the process of nurse-client interactions into outcomes that goals attained" (Herm-Barabasz, 2015, p. 70). The study focused on the "health care team decision-making which includes a transaction in which the nurse and patient engage in a mutual goal setting" (Herm-Barabasz, 2015, p. 42). The results of the study found that the "use of bedside rounding with daily goal sheets has demonstrated improved communication and patient care. In addition, a daily goal reminder sheet assisted members to stay on task and include all components and be consistent with every patient every day" (Herm-Barabasz, 2015, p. 81).

Another study applying King's Goal Attainment Theory as the theoretical framework, explored the structure of multidisciplinary rounds and the effects on patient perceptions. The researcher surveyed discharged patients and analyzed "patient perceptions of five specific questions: nurse communication, physician communication, decision-making, teamwork, and safety" (Alagna, 2016, p. 2). The researcher reviewed patient satisfaction scores of 300 patients on adult medical-surgical floors in an 800-bed hospital (Alagna, 2016). In this study, King's Theory of Goal Attainment guided the research where "multidisciplinary rounds focus on communication, relationships, and outcomes, which according to King's theory is essential to goal attainment" (Alagna, 2016, p. 33). The study found there was no significant difference in patient perception of communication, decision-making, teamwork, or safety in relation to the structure of multidisciplinary rounds (Alagna, 2016).

Communication

Communication "is a vital element in nursing in all areas of activity and in all its interventions such as prevention, treatment, therapy, rehabilitation, education, and health

promotion” (Kourkouta & Papathanasiou, 2014, p. 65). Poor communication during handover has been identified as the primary cause of medical errors. The 2016 study involved 10 hospitals which found that receivers assessed that 37% of the handovers were unsuccessful, whereas, senders judged 21% of handovers to be unsuccessful (The Joint Commission, 2017). The study concluded the lack of a standardized handover process promoted miscommunication and compromised patient safety.

In another study exploring how miscommunication among health care providers can impact patient safety found that health care providers are less likely to verbalize concerns regarding co-worker’s care. In this study, more than 1,700 health care providers were surveyed about communication gaps that could harm patients. The study found that fewer than 10% of physicians and other clinical staff directly confront their colleagues about their concerns and one-in-five physicians said they have seen harm come to patients as a result (Maxfield, Grenny, McMillan, Patterson, & Switzler, 2005). The study also found that 10% of health care workers which verbalize concerns observe better patient outcomes, work harder, are more satisfied and are more committed to staying in their jobs (Maxfield et al., 2005).

In a more recent study conducted, researchers reviewed the prevalence and characteristics of clinical handover incidents that occur in hospitals. The study highlighted the issue of under-reporting of errors occurring in hospitals. The retrospective study reviewed incidents over a three-year period and found 334 handover incidents occurred during the study’s time-frame. The results found that handover incidents accounted for 2% (334) of the total adverse events that occurred during the study (Pezzolesi et al., 2010). There were two main reasons for the handover incidents

which were identified as deficient handovers (45%) and the lack of any handover (29%) (Pezzolesi et al., 2010).

Handover

Handover, also known as hand-off, is a transfer and acceptance of patient care responsibility achieved through effective communication. This process of passing patient-specific information occurs in real-time from one caregiver to another or from one team of caregivers to another for the purpose of ensuring the continuity and safety of the patient's care (The Joint Commission, 2017). Therefore, handover is an essential piece of patient care.

The handover process is essential in a variety of settings. Over time, the importance of conducting a concise handover with essential information has been adopted by the health care environment. In 2004, a study investigating the strategies employed during handovers in four settings which have the potential for high consequences for failure was conducted. These four-settings included NASA, nuclear powerplant, a railroad dispatch center, and an ambulance dispatch center. The four settings are similar to health care where the setting is complex, interconnected, and are event-driven, time-pressured, and resource-constrained (Patterson, Roth, Woods, Chow, & Gomes, 2009). An analysis of observational data was collected for evidence of 21 handover strategies. The research concluded an understanding of how handovers occur in high consequence settings can “jumpstart endeavors to modify” handovers to improve patient safety (Patterson et al., 2009, p. 125). While the study examined similarities of handovers between the four facilities and health care, the study did not explore how

effective each strategy was in the observed setting or how effective the strategy could be in the health care setting.

Malekzadeh, Mazluom, Etezadi, and Tasserri (2013) proposed to decrease the gaps in information during handover. This proposal suggested a review of safety surrounding the handover process should be explored. The quasi-experimental study consisted of a convenience sample with 56 intensive care unit nurses. The Nurses' Safe Practice Evaluation Checklist was used for the pretest and posttest data collection. The study revealed that nurses' mean score on the Safe Practice Evaluation Checklist increased significantly from 11.6 to 17 ($P < 0.001$). The results suggested using a standardized handover protocol improves nurses' safe practice during patient care (Malekzadeh et al., 2013).

In a similar study examining the handover process in the intensive care unit, researchers studied the loss of information during handover and the impact on patient safety. A prospective study examining 332 patient ICU days were observed where 119 were in the control group and 213 checklist group. A review of 689 patient care items were observed between the groups. The study found 75 (10.9%) patient care items were lost over a 24-hour period where 61 (20.1%) occurred without a checklist, while 14 (3.6%) occurred in the checklist group (Stahl et al., 2009). The conclusion of the study suggested that there was a breakdown of critical information over a 24-hour period. The loss of critical information and a reduction in errors can be reduced with a structured handover checklist.

Klee, Latta, Davis-Kirsch, and Pecchia (2012) completed a four-year study at a pediatric facility with the changes made as a result of the plan-do-check-act procedure.

The goals of the study were to standardize the handover process, reduce end-of-shift overtime, and improve patient safety. The study implemented the continuous performance improvement (CPI) methodology. “CPI methodology is used to facilitate improvements in work methods, identify waste, standardize work, and improve quality outcomes” (Klee et al., 2012, p. 169). In the study, the researchers observed the handover process prior to implementing a standardized handover worksheet. During this time, the time for the handover process to occur ranged from 6-42 minutes (Klee et al., 2012). Over a period of time, the handover worksheet was redesigned to meet the needs of the staff. After implementation of the standardized form, data from nurse handovers were collected. At week one, 87% of the staff was following the standardized method with 70% completing handover within 30 minutes (Klee et al., 2012). A 20% reduction in end-of-shift overtime was achieved on the acute care units (Klee et al., 2012). In addition to a reduction in overtime, data indicated sustained improvements in safety checks at the 12-month mark.

Holly and Poletick (2013) undertook a qualitative study to examine the evidence on dynamics of knowledge transfer during transitions in care in acute care hospitals. The 29 qualitative studies identified were conducted between 1988 and 2012. While collecting data, the studies represented over 800 nurse handovers and 300 nurse interviews which were subjected to a meta-synthesis to produce a single set of findings (Holly & Poletick, 2013). The results suggested the handover process “to be a complex, social interaction highly sensitive to context and cultural norms, an activity essential to multiple functions that extend beyond quality and safety. They are subject to wide

variability in both the methods used and the kind of information that is handed off” (Holly & Poletick, 2013, p. 2387).

The handover process is an essential piece of patient care. Understanding the process of handover among health care providers can provide areas for improvement. Abraham and Acharya (2016) investigated the semantic similarities between physician and nurse handover communication in the clinical setting. The exploratory, non-randomized study was conducted at a 495-bed hospital with approximately 13,000 hospital encounters per year between residents (n=86) and nurses (n=39). Based on the verbal handovers of residents and nurses (530) utilizing the natural language technique, the researchers found that there were inherent similarities in the nature of content that was exchanged during handover ($p < 0.05$) (Abraham & Acharya, 2016). On the other hand, the consistency of the clinical content across all handovers and the order of presentation was less predictable and unstructured (Abraham & Acharya, 2016).

SBAR

In today’s complex health care environment, handover can also be complex. There is a broad support in the literature to implement a standardized handover process (The Joint Commission, 2017). One method of standardization handover between nurses is the Situation, Background, Assessment, and Recommendation (SBAR) tool. SBAR was originally developed by the United States military as a communication technique to transfer important information on nuclear submarines (O’Shaughnessy, SBAR (Situation-Background-Assessment-Recommendation): An effective and efficient way to communicate important information, 2015). In the health care industry, SBAR is a standardized communication method used as a guide during patient handover which

allows for framing exchanges of information to reduce the occurrence of omitted information.

In a 2009, Goupil conducted a study assessing the effect of SBAR education on the quality of student nurses' handover report. A quasi-experimental pilot study was conducted to assess the effect of SBAR education and implementation on the quality of student nurses' handovers. Six nursing students were placed into two groups which consisted of an interventional group and a control group. A statistical analysis revealed a significant difference in the quality of handover between the group that received SBAR education and those in the control group. "An independent sample t-test comparing the means of the intervention and control groups found a significant difference between the means of the two groups ($t(4) = 3.42, p < .05$)" (Goupil, 2009, p. 38).

Becket and Kipnis (2009) studied integrating SBAR communication process in a pediatrics and perinatal department in a community hospital to improve quality and patient safety outcomes. The quantitative study consisted of a pre/post intervention questionnaire which were evaluated for differences in outcomes over time. There were 98% participation from staff in the intervention/educational portion of the study. During the pre-intervention, staff participation was 66% while the post-intervention staff participation was only 33%. The study suggested that "when the SBAR tool was used in conjunction with the collaborative communication model, statistically significant changes are noted in the communication, teamwork, and the safety climate" (Beckett & Kipnis, 2009, p. 26).

In a more recent study, Long (2016) explored the handover process between the operating room and post anesthesia care after implementation of SBAR. The goal of the

study was to standardize the handover process between departments to minimize errors through memorizing a mnemonic phrase. Education was provided to the participants regarding SBAR. The researcher conducted a Safety Attitudes Questionnaire (SAQ) as a pretest and posttest for perceptions of safety. Although “the literature recommends perioperative nurses should use a mnemonic phrase and implement a standardized protocol to aid nurse memory during handoff,” (Long, 2016, p. 110) the result of the handover evaluation “from ANOVA did not support any significant change in handoff items among the phases and frequencies showed no significant changes in reported items ($F(66.68) = 0.207, p = 0.814$)” (Long, 2016, p. 92).

In a similar study, Ibrahim (2014) explored the handover process in the cardiovascular intensive care unit. Although the previous study relied on the nurse’s memory, this study implemented a SBAR form to standardize the handover process. The researcher formulated a SBAR “to standardize the handoff process during the end of shift report, the project evaluation results showed a declining in the percentages of the handoff related incidents and improves the nurse’s satisfaction” (Ibrahim, 2014, p. 7).

A 2008 descriptive study examined the outcomes of implementing a standardized SBAR between the physician and nurse at a rehabilitation facility. This study occurred in three phases with evaluation tools for three main areas: “staff perceptions of team communication and patient safety culture (as measured by the Agency for Healthcare Research and Quality (2018) Hospital Survey on Patient Safety Culture), patient satisfaction (as determined using the Client Perspectives on Rehabilitation Services questionnaire) and safety reporting (including incident and near-miss reporting)” (Velji et al., 2008, p. 72). The results found the most statistically significant changes were in the

communication (e.g., teamwork within units, feedback, and communication about error) where overall perceptions of safety were statistically significant ($p < .05$) (Velji et al., 2008). Although this study focused mainly on physician and nurse communication utilizing an SBAR, the results suggest nurse-to-nurse SBAR implementation may improve patient safety.

In 2011, Kesten explored the effectiveness of communication among nursing students by implementation of a standardized SBAR. The experimental study evaluated data from undergraduate senior nursing students ($N=115$) based on their performance using SBAR during role-play. As a result of the study, data revealed the “mean performance scores of the didactic plus role-play students were significantly higher than those who had didactic instruction alone ($t=-2.6$, $p=0.005$)” (Kesten, 2011, p. 79). The study suggests role-play may improve education in teaching communication skills in both nursing schools and other health care settings when implementing a standardized SBAR tool.

Perception

The nursing profession bases the quality of care on patient outcomes and the perceived quality of care provided. Perception is defined as “a way of regarding, understanding, or interpreting something; a mental impression” (Google Dictionary, 2011, ¶3). A 2004 study assessed new nurses’ perceptions of nursing practice and quality care. The study surveyed 67 new nurses from varying departments exploring their perception of quality patient care. This study identified “new nurses’ perceptions of their lack of clinical skills and perceived inability to provide competent care result in costly turnover and lack of performance for the health care agency. New nurses are faced with

the reality of the abyss between performance standards learned in a university setting and their ability to provide the quality care expected” (Boswell, Lowry, & Wilhoit, 2004, p. 76). One main result of the study found “communicating with physicians and the fear of causing accidental harm to patients” weighs on new nurses (Boswell et al., 2004).

Swart, Pretorius, and Klopper (2015) conducted a descriptive, correlational study to determine the relationship between the educational background of nurses and their perception of quality of care. The study included both baccalaureate and associate prepared nurses which resulted in 306 completed questionnaires. The researchers found a statistically significant difference between BSNs and ADN perceptions of the “prevention of errors in the unit, losing patient information between shifts and patient incidents related to medication errors, pressure ulcers and falls with injury” (Swart et al., 2015, p. 1).

In another study, Robinson, Gorman, Slimmer, and Yudkowsky (2010) conducted a qualitative study at a large, urban university hospital. The study focused on the perceptions of effective and ineffective communication between the nurse and physician. “Nurse-physician communication is particularly important, given the interdependence of the two professions and the primary role they play in safe, quality patient care” (Robinson et al., 2010, p. 206). The sampling procedure included registered nurses or physicians with at least five years of experience in a hospital setting which resulted in eighteen participants. The most common theme expressed by the participants was a “need for straightforward unambiguous communication” (Robinson et al., 2010, p. 210).

Doyle and Cruickshank (2012) conducted a study in undergraduate health students’ perceptions during handover. The study was conducted utilizing a standardized

SBAR template during the handover process between shifts, professionals, and organizations. Forty participants were divided into two groups of undergraduate health care students. Case studies were presented to each group which consisted of a variety of handover scenarios. The study suggested that the “attitude of the nurse handing-over, was seen as senior or as having expert knowledge of the patient being handed over and was accepted with minimal questioning. Not questioning assumptions at handover threatens novice nurses’ ongoing development” (Doyle & Cruickshank, 2012, p. 260).

A nurse’s perception of the impact of nursing care can influence patient outcomes. In a 2015 qualitative study which examined the nurses’ perception about processes that promote or hinder patient safety during handover. The study consisted of 21 medical-surgical nurses from a 124-bed university hospital. The study suggested that “nurses described two important patient safety-promoting processes: grasping the story and painting a full picture. However, nurses reported disruptions in the practice environment and during handover often hindered them in grasping the story and jointly painting a full picture thus posing risks to safe continuity of care” (Birmaingham, Buffum, Blegen, & Lyndon, 2015, p. 1461).

In a similar study, Brown and Sims (2014) examined the nurse’s perception of the handover process. An exploratory, descriptive, prospective quantitative survey with qualitative elements was conducted utilizing the Handover Evaluation Scale (HES) (Brown & Sims, 2014). The HES was used to determine the strengths and limitations of the handover process of a neonatal unit in a 634-bed facility. The study found “nursing staff report that handover is time consuming and irrelevant information is given. Given the demands on nursing time, it is imperative that the information sharing that occurs

during the handover period is both efficient and of significance to patient care” (Brown & Sims, 2014, p. 55).

Summary

In conclusion, the review of literature supports the importance of the handover process in patient care. While a multitude of handover tools have been developed, there is no support of a single best-practice handover tool. The literature reveals valuable information regarding the benefits of implementing a standardized SBAR tool for the handover process. Even though much of the SBAR studies focus on physician and nurse transfer of information, nurse-to-nurse standardized SBAR tool utilization is lacking. While there is a push for a standardized handover process, establishing a standardized SBAR tool can lead to improved outcomes and best practice.

CHAPTER III

METHODOLOGY

Although handover communication has been identified as a leading cause of patient harms, most studies have focused on SBAR communication between the nurse and the physician. Over the years, studies have shown nurse-to-nurse handover with a structured tool such as SBAR has improved the nurse's perception of patient care. More recently, a new focus has been placed on the handover process between nurses. The purpose of this study was to evaluate nurses' perception of handover before and after implementation of a standardized SBAR.

Design

Descriptive research designs are valuable in “documenting the prevalence, nature, and intensity of health-related conditions and behaviors and are critical in the development of effective interventions” (Polit & Beck, 2017, p. 209). A descriptive design was used for this study in order to gain more insight on the nurse's perception of handover when utilizing a standardized SBAR. A descriptive design allows quantitative data to be collected which will permit the researcher to identify nurses' perception on standardized SBAR communication during handover and if the nurse perceives better patient care.

Setting

During a study, the physical location in which data collection takes place is referred to as the setting (Polit & Beck, 2017). The location of the study is a 143-bed acute rural facility. In the facility, the researcher will report to the emergency

department, intensive care unit, 2nd medical, 4th surgical, obstetrics, psychiatric, post-anesthesia care unit, surgery, and endoscopy to conduct the study.

Population and Sample

The results of the study will be generalized to the staff nurses and nurse leaders employed at the research facility. There are currently 115 staff-nurses and nurse leaders employed at the facility where the research was completed. A convenience sample was chosen due to the readily available nurses for the study and to control cost for the researcher. The participants included those nurses and nurse leaders currently employed at the facility. The areas of focus included the emergency department, intensive care unit, obstetrics, 2nd medical, 4th surgical, PACU, surgery, endoscopy, and out-patient.

Intervention and Materials

Over the years, the lack or omission of patient information during handover has resulted in patient harms. In an effort to reduce patient harm and improve patient outcomes, many organizations recommend utilizing a standardized handover method. In this study, a SBAR was used. To develop the SBAR, the researcher focused on both quality metric items and those items often omitted from nurse-to-nurse handover at this specific facility. In order to implement the SBAR, all nurses and nurse leaders were required to attend an educational session. This session included a PowerPoint developed by the researcher related to SBAR implementation.

Measurement Methods

The Handover Evaluation Scale (HES) was first developed by Beverly O'Connell RN, MSc, PhD in 2008 and has been extensively used across large health care services. The instrument was developed using supporting literature in combination with input from

expert nurses. The HES survey collects data which details the handover process and nurse perceptions of the process. The HES examines various aspects of nursing handover including the relevance and comprehensiveness of information, timeliness and efficiency of the process, opportunity to clarify and discuss information, and information on any patient involvement. The survey contains ten open-ended questions regarding the handover process and 15 statements which are ranked on a seven-point Likert scale. Permission (Appendix A) to use the HES survey and make changes as needed were given by O'Connell.

In order to conduct a meaningful study, the tool utilized must be valid and reliable. The HES survey's validity and reliability have been established over the years. Construct validity is the degree to which a measure truly captures the focal construct (Polit & Beck, 2017). While measuring the validity of the HES, a factor analysis was utilized and suggested the items were accurately measuring the components it was developed to measure (O'Connell, Ockerby, & Hawkins, 2012). However, when subscales were examined, it was determined that further research was required to improve the reliability of the subscale (O'Connell et al., 2012).

In addition to validity, reliability of a tool is the extent to which measurements are the same for repeated studies (Polit & Beck, 2017). The reliability of the HES survey has been supported by the numerous studies utilizing the survey. Over the years of 2008-2018, several studies were completed by the survey developers to test its reliability. The final results of the 2012 study found a Cronbach's alpha of 0.7 was derived, suggesting an acceptable degree of internal consistency (O'Connell et al., 2012). The reliability of

the HES has been shown by the consistency of the measures obtained over the years by other studies.

Data Collection Procedures

After permission from the facility and the University was obtained, a quantitative study was carried out over a period of six-weeks focusing on nurse's perception of handover before and after implementation of SBAR. Staff was notified via e-mail, by the researcher, one-week in advance of the voluntary pre-educational intervention survey and the mandatory education utilizing hospital email. The study was conducted in three phases. A pre-education phase, education phase, and post-education phase. During the pre-educational intervention phase, the researcher reported to the emergency department, intensive care unit, 2nd medical, 4th surgical, obstetrics, psychiatric, post-anesthesia care unit, surgery, endoscopy, and outpatient units once per day- and night-shift on Monday, Wednesday, Friday, and Sunday. A convenience sample was obtained by the researcher reporting to each nursing department during day- and night-shifts over a period of one-week. The researcher reiterated that participation was entirely voluntary. Participants were provided the consent, optional pre-educational survey and envelope by the researcher. No signed informed consent was indicated since it would compromise the anonymity of the research subjects. After completion of the pre-educational survey, the envelopes were returned to the locked-box located in the departments. Participants could choose to place a blank survey in the provided envelope and return it to the locked-box. No information obtained could be associated with a subject. The key to the locked-box remained with the researcher for the duration of the study. During the educational phase, the researcher developed and held sixteen, 30-minute mandatory educational sessions in

the department education classroom to cover nurses working both day- and night-shifts over a one-week period. Over the one-week period, a PowerPoint presentation was provided to educate the staff on completing a SBAR when receiving handover. The researcher conducted the mandatory educational sessions for the emergency department, intensive care unit, 2nd medical, 4th surgical, obstetrics, psychiatric, post-anesthesia care unit, surgery, endoscopy, and outpatient units. During the post-education phase, a convenience sample was obtained by the researcher reporting to each nursing department during day- and night-shifts over a period of one-week. The researcher reiterated that participation was entirely voluntary. Participants were provided the consent, optional post-educational survey and envelope by the researcher. No signed informed consent was indicated since it would compromise the anonymity of the research subjects. After completion of the post-educational survey, the envelopes were returned to the locked-box located in the departments. Participants could choose to place a blank survey in the provided envelope and return it to the locked-box. No information obtained could be associated with a subject. Participants remained anonymous and participation was voluntary. The information contained no identifiable information and the data was only reviewed by those involved in the data analysis. Participation in each survey portion of the study was completely optional.

Protection of Human Subjects

Authorization to conduct the study was obtained from the study facility. After facility approval was obtained, authorization was obtained from the Institutional Review Board at the University. The survey portion of the study was completely voluntary. The information obtained during the study contained no identifiable information. Participants

could withdraw from this study at any time without penalty. The participant's consent was given voluntarily. The participant could refuse to participate in the survey. If the participant decided to participate in the voluntary survey, they were free to withdraw at any time without any negative effects on their relations with the University or the research facility.

Data Analysis

The HES survey was evaluated for perception of the handover process. The data was entered into SPSS Inc. and analyzed. Pre and post intervention surveys were evaluated for differences in outcomes over time. Descriptive statistics will be used including mean, median, standard deviation, and percentages. Analysis of the data was completed using aggregate-level data. Aggregate data “refers to numerical or non-numerical information that is (1) collected from multiple measures, variables, or individuals, and (2) compiled into data summaries or summary reports, typically for the purpose of public reporting or statistical analysis” (The Glossary of Education Reform, 2015, ¶1).

CHAPTER IV

RESULTS

Handover is an essential part of patient care. The literature strongly suggested that a standardized handover form, such as Situation, Background, Assessment, and Recommendation (SBAR), improves communication. This chapter described the results obtained from the completed Handover Evaluation Scale (HES) surveys from the study facility using descriptive statistics. The purpose of this study was to evaluate nurses' perception of handover before and after implementation of a standardized SBAR.

Sample Characteristics

In this study, there were two groups of participants for the pre- and post-SBAR implementation. All registered nurses employed at the research facility were possible participants in the survey. The pre-SBAR implementation sample included 82 (71%) registered nurses. After SBAR was implemented, a post-SBAR implantation survey was conducted with 74 (64%) responses. Specific data regarding age, race, sex, or education level was not included in the survey to keep participants anonymous. The survey contained data regarding documentation time, handover preparation time, handover time, handover locations, and other health care providers present during handover. The span of the study occurred over a six-week period with one-week of surveying pre- and post-SBAR intervention and four-weeks of SBAR utilization. During the survey, the participants had the opportunity to return blank surveys or skip questions. The data for the total number of participants for each question correspond with the table for each question. When evaluating the data, it was assumed the participants received only one handover. The level of significance was 0.05.

Major Findings

There were two groups of participants for pre- and post-SBAR implementation. After four-weeks of utilizing the SBAR form, a post-survey was completed. Responses from the HES survey were analyzed using the independent t-test to compare pre-and post-SBAR implementation scores to determine whether there was a statistical difference between the means of the two unrelated groups.

A comparison of the time taken to complete generalized documentation was evaluated (Table 1). Prior to SBAR implementation, generalized documentation was determined (M=291.88). Following SBAR implementation, generalized documentation (M=286.52) decreased. In preparation for handover (Table 2), there was an increase from pre-SBAR implementation (M=38.83) to post-SBAR handover prep time (M=44.09). The time required for handover (Table 3) was calculated pre and post implementation of SBAR. The time for handover from pre- implementation of SBAR (M=20.27) also decreased in post-SBAR implementation (M=18.40).

Table 1

Time in Minutes per Shift

Case Processing Summary						
	<u>Included</u>		Cases <u>Excluded</u>		<u>Total</u>	
	N	Percent	N	Percent	N	Percent
Time In Minutes per shift * SBAR Intervention	141	90.4%	15	9.6%	156	100.0%
	<u>Report</u>					
Time In Minutes per shift						
SBAR Intervention		Mean		N		Std. Deviation
Pre-SBAR Intervention		291.88		72		148.363
Post-SBAR Intervention		286.52		69		148.718
Total		289.26		141		148.030

Table 2

Handover Prep Time in Minutes

Case Processing Summary						
	<u>Included</u>		Cases <u>Excluded</u>		<u>Total</u>	
	N	Percent	N	Percent	N	Percent
Handover Prep Time In Minutes * SBAR Intervention	140	89.7%	16	10.3%	156	100.0%
<u>Report</u>						
Handover Prep Time In Minutes				Std. Deviation		
SBAR Intervention	Mean		N			
Pre-SBAR Intervention	38.83		71		71.580	
Post-SBAR Intervention	44.09		69		90.093	
Total	41.42		140		80.982	

Table 3

Time in Minutes for Handover

Case Processing Summary						
	<u>Included</u>		Cases <u>Excluded</u>		<u>Total</u>	
	N	Percent	N	Percent	N	Percent
Time In Minutes for Handover * SBAR Intervention	144	92.3%	12	7.7%	156	100.0%
<u>Report</u>						
Time In Minutes for Handover				Std. Deviation		
SBAR Intervention	Mean		N			
Pre-SBAR Intervention	20.27		74		14.315	
Post-SBAR Intervention	18.40		70		12.368	
Total	19.36		144		13.390	

The purpose of the handover evaluation scale was to evaluate the staffs' perception of the handover process used pre- and post-SBAR implementation. Prior to SBAR implementation, the handover method most frequently conducted by verbal only at 34.53% and both verbal and written at 15.11%. Post-SBAR implementation, the method most utilized was both verbal and written at 32.37% followed by verbal only at 17.99%. Participants handover preference pre-SBAR reported verbal only at 38.19% and both verbal and written at 12.5%. Post-SBAR participants' preference for handover method was 20.83% verbal only, 2.778% written only, and 25.69% both verbal and written. (Figure 2 and 3).

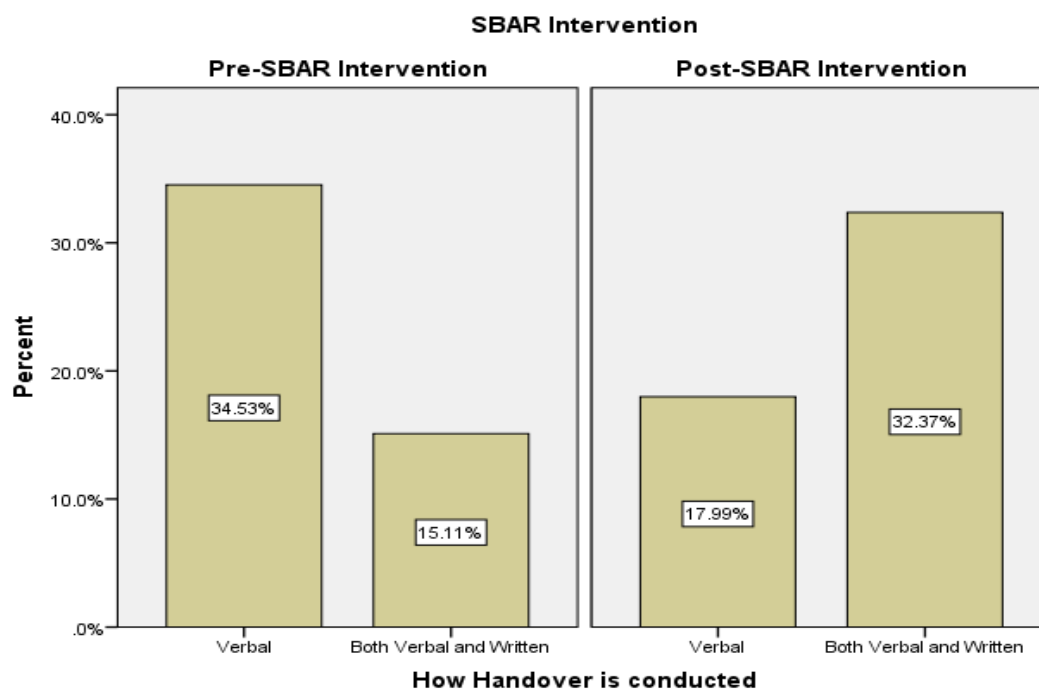


Figure 2. Method of Handover

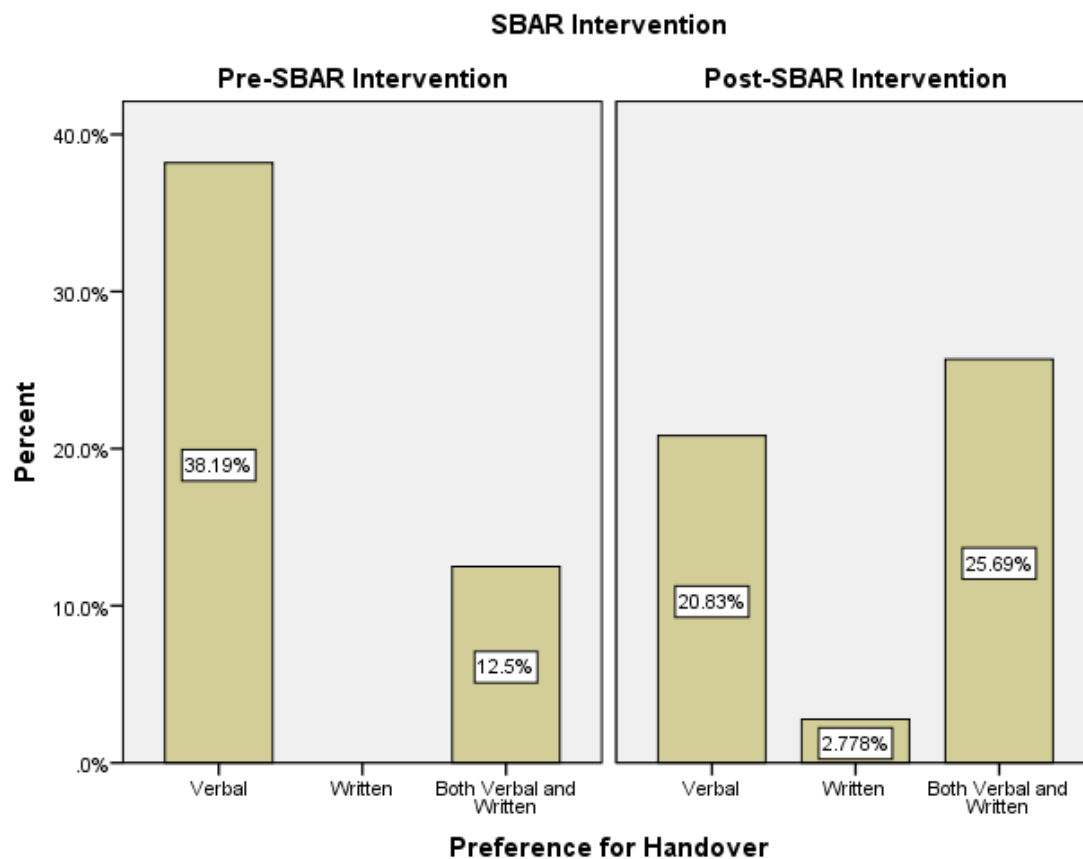


Figure 3. Participants' Preference for Handover Method

Pre-SBAR participants responded that 9.42% of nurses in charge of shift provided handover information. While 39.13% of nurses looking after patients provided handover information and 2.174% other. Post-SBAR implementation had 5.797% of nurses in charge of shift provided handover information while 42.75% of nurses looking after patient provided handover information and 0.725% responded other. (Figure 4).

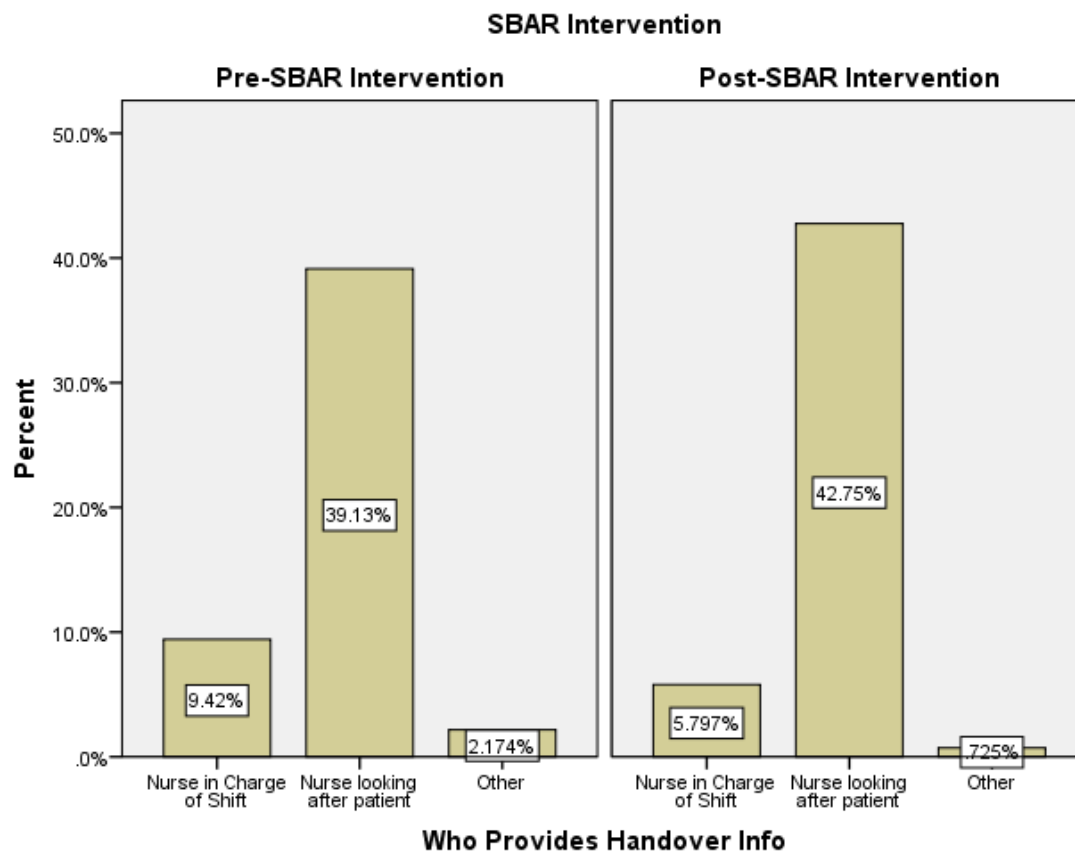


Figure 4. Who Provides Handover Information

The survey also evaluated the nurses' preference for who provides handover. The pre-SBAR implementation preference was nurse looking after patient was 39.57%, nurses in charge of shift at 10.07%, and other at .719%. The post-SBAR preference was nurse in charge of patient at 43.17% and charge nurse of shift at 6.475%. (Figure 5).

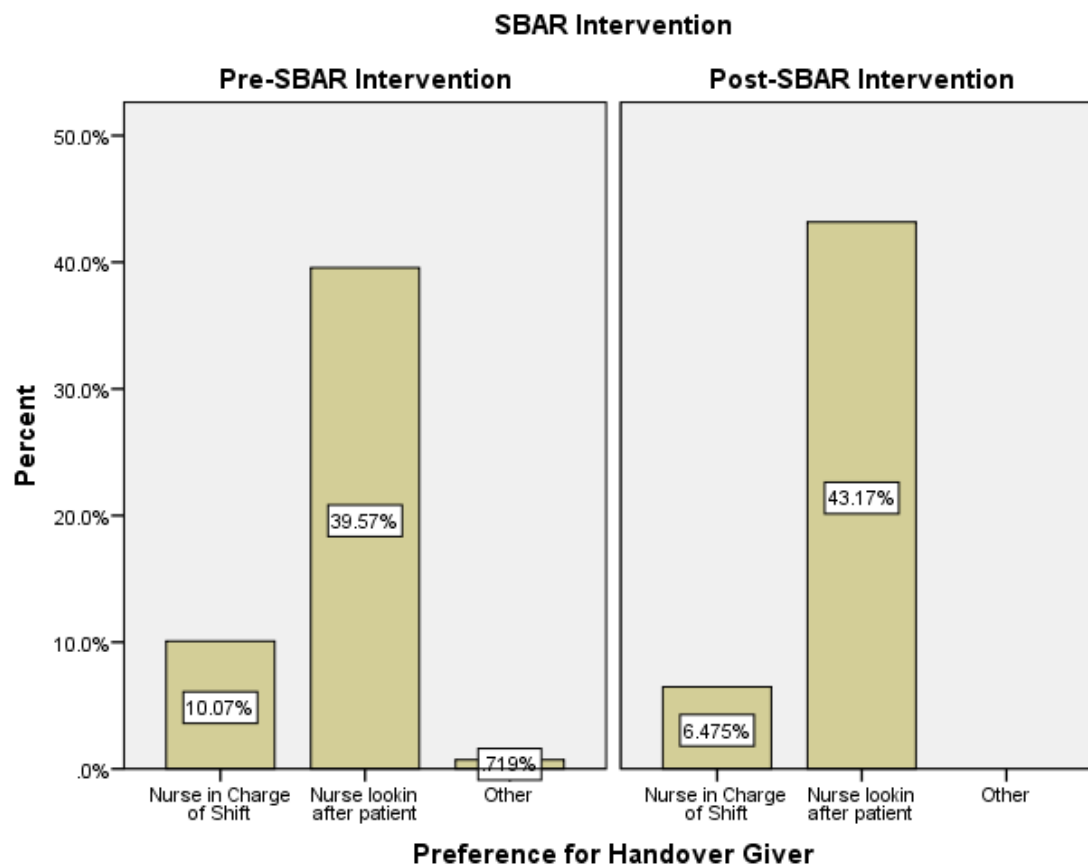


Figure 5. Participants' Preference for Handover Giver

Handover location was also evaluated. Pre-SBAR implementation was bedside 29.2%, nurses station 10.22%, and other 10.95%. Post-SBAR implementation of handover location was bedside 35.77%, nurse station 6.569%, and other at 7.299%. Handover location preference was evaluated. Pre-SBAR implementation most frequently preferred was bedside (25.55%) and other (10.25%). Post-SBAR implementation preference for handover location was bedside (29.93%), nurse station (12.41%), and other (6.569%). (Figure 6 and 7).

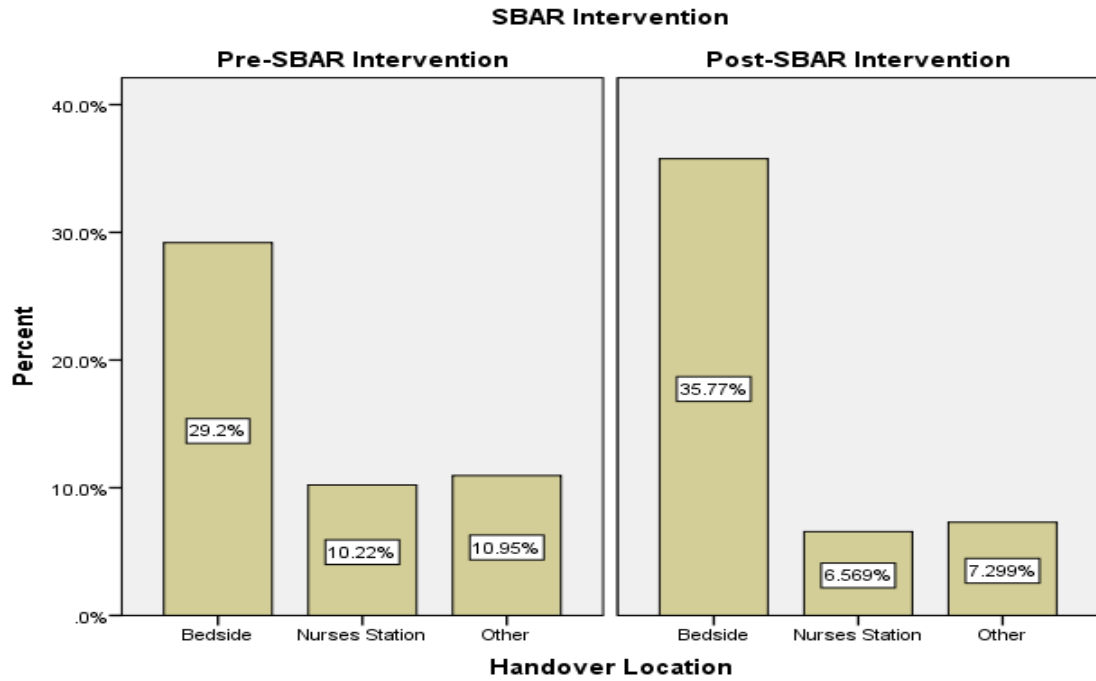


Figure 6. Handover Location

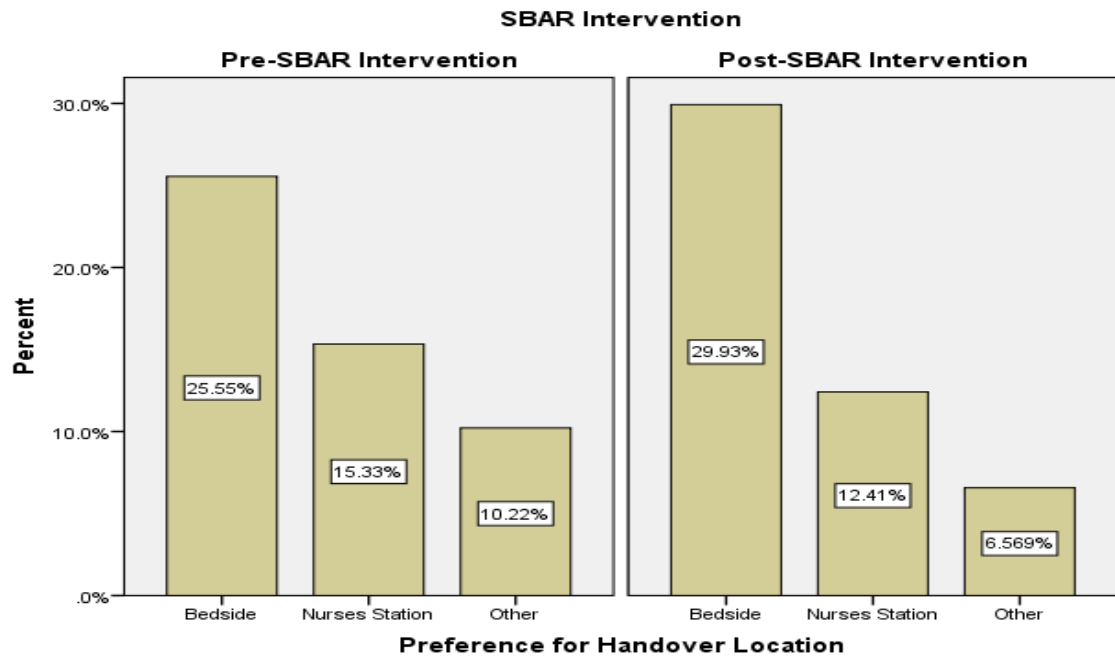


Figure 7. Participants' Preference for Handover Location

The next section of the survey contained a Likert scale questionnaire. The Likert scale was coded on a seven-point scale where 1=strongly disagree; 2=disagree; 3=slightly disagree; 4=neither disagree nor agree; 5=slightly agree; 6=agree; 7=strongly agree. The Likert scale included three subscales pertaining to quality of interaction and support, quality of information, and efficiency. There were four questions relating to interaction and support which contained opportunity to discuss difficult situations, debrief workload, and ask questions. There were seven questions pertaining to quality of information which ability to check patient, provided sufficient information, information was easy to follow, ability to clarify information, information up-to-date, patient involvement, and keep mind focused. Finally, two questions relating to efficiency asked if information was provided in a timely manner and timely fashion.

The Likert scale was divided into three subscales, the first subscale of interaction and support (Table 4 and Figure 8) included four questions. There was not a significant difference in the scores for opportunity to discuss difficult clinical situation during the pre-SBAR implementation (M=5.43, SD=1.471) and post-SBAR implementation (M=5.66, SD=1.195); $t(141) = -1.032$, $p = .152$. Opportunity to debrief with colleagues about difficult shifts pre-SBAR implementation (M=5.31, SD=1.624) and post-SBAR implementation (M=5.46, SD=1.624); $t(142) = -.608$, $p = .272$ showed no significant difference. Another interaction and support question was the opportunity to discuss workload issues. There was not a significant difference in the scores for pre-SBAR implementation (M=5.08, SD=1.639) and post-SBAR implementation (M=5.23, SD=1.446); $t(142) = -.555$, $p = .290$. Finally, opportunity to ask questions about things I don't understand was evaluated. There was not a significant difference in the scores for

pre-SBAR implementation (M=5.74, SD=1.100) and post-SBAR implementation (M=5.94, SD=.803); $t(142) = -1.298, p = .099$.

Table 4

Interaction and Support Subscale

		Group Statistics			
	SBAR Intervention	N	Mean	Std. Deviation	Std. Error Mean
Opportunity to Discuss Difficult Clinical Situations	Pre-SBAR Intervention	72	5.43	1.471	.173
	Post-SBAR Intervention	71	5.66	1.195	.142
Opportunity to debrief with colleagues about difficult shift	Pre-SBAR Intervention	72	5.31	1.624	.191
	Post-SBAR Intervention	72	5.46	1.383	.163
Opportunity to discuss workload issues	Pre-SBAR Intervention	73	5.08	1.639	.192
	Post-SBAR Intervention	71	5.23	1.446	.172
Opportunity to ask questions about things I don't understand	Pre-SBAR Intervention	72	5.74	1.100	.130
	Post-SBAR Intervention	72	5.94	.803	.095

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Opportunity to Discuss Difficult Clinical Situations	Equal variances assumed	2.092	.150	-1.032	141	.304	-.231	.224	-.675	.212
	Equal variances not assumed			-1.033	136.013	.303	-.231	.224	-.674	.211
Opportunity to debrief with colleagues about difficult shift	Equal variances assumed	.567	.453	-.608	142	.544	-.153	.251	-.650	.344
	Equal variances not assumed			-.608	138.496	.544	-.153	.251	-.650	.344
Opportunity to discuss workload issues	Equal variances assumed	.786	.377	-.555	142	.580	-.143	.258	-.653	.367
	Equal variances not assumed			-.556	140.677	.579	-.143	.257	-.652	.366
Opportunity to ask questions about things I don't understand	Equal variances assumed	2.140	.146	-1.298	142	.197	-.208	.161	-.526	.109
	Equal variances not assumed			-1.298	129.903	.197	-.208	.161	-.526	.109

Figure 8. Interaction and Support Subscale

The next subscale of the HES Likert scale pertains to quality of information (Table 5 and Figure 9). The ability to check patient during handover was evaluated. There was not a significant difference in the scores for pre-SBAR implementation (M=5.49, SD=1.565) and post-SBAR intervention (M=5.72, SD=1.354); $t(142) = -0.922$, $p = .179$. There was significant difference in the scores for sufficient information about the patient was provided pre-SBAR (M=5.33, SD=1.653) and post-SBAR implementation (M=5.76, SD=.927); $t(111.625) = -1.928$, $p = .028$. Another quality question was about the ease of following the information provided. There was a significant difference in the scores for the pre-SBAR implementation (M=5.55, SD=1.313) and post-SBAR implementation (M=5.94, SD=.803); $t(119.540) = -2.197$, $p = .015$. There was not a significant difference in the question regarding the nurses ability to clarify information pre-SBAR implementation (M=5.74, SD=1.291) and post-SBAR implementation (M= 5.96, SD=.701); $t(111.358) = -1.269$, $p = .104$. Evaluating up-to-date

information pre- and post-SBAR implementation also reflects on quality. There was significant difference in the pre-SBAR implementation (M=5.48, SD=1.281) and post-SBAR implementation (M=5.83, SD=.888); $t(128.341) = -1.935$, $p = .028$. There was also a significant difference in the patients involved in the handover process pre-SBAR implementation (M=4.47, SD=1.871) and post-SBAR implementation (M=5.6, SD=1.441); $t(134.789) = -2.48$, $p = .007$. The final quality question evaluated was the participant's ability to keep their mind focused on the information provided. There was not a significant difference in the pre-SBAR implementation (M=5.81, SD=.981) and post-SBAR implementation (M=5.82, SD=.828); $t(143) = -.074$, $p = .471$.

Table 5

Quality of Information

		Group Statistics			
	SBAR Intervention	N	Mean	Std. Deviation	Std. Error Mean
Able to Check Patient During Handover	Pre-SBAR Intervention	73	5.49	1.565	.183
	Post-SBAR Intervention	71	5.72	1.354	.161
Am I provided sufficient info about Patient	Pre-SBAR Intervention	72	5.33	1.653	.195
	Post-SBAR Intervention	72	5.76	.927	.109
information is easy to follow	Pre-SBAR Intervention	73	5.55	1.313	.154
	Post-SBAR Intervention	72	5.94	.803	.095
Able to clarify information that has been provided	Pre-SBAR Intervention	73	5.74	1.291	.151
	Post-SBAR Intervention	72	5.96	.701	.083
Information received is up to date	Pre-SBAR Intervention	73	5.48	1.281	.150
	Post-SBAR Intervention	72	5.83	.888	.105
Patients are involved in the Handover Process	Pre-SBAR Intervention	73	4.47	1.871	.219
	Post-SBAR Intervention	70	5.16	1.441	.172
Able to keep my mind focused on information given to me	Pre-SBAR Intervention	73	5.81	.981	.115
	Post-SBAR Intervention	72	5.82	.828	.098

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Able to Check Patient During Handover	Equal variances assumed	3.181	.077	-9.222	142	.358	-.225	.244	-.708	.257
	Equal variances not assumed			-9.24	140.124	.357	-.225	.244	-.707	.257
Am I provided sufficient info about Patient	Equal variances assumed	17.502	.000	-1.928	142	.056	-.431	.223	-.872	.011
	Equal variances not assumed			-1.928	111.625	.056	-.431	.223	-.873	.012
information is easy to follow	Equal variances assumed	12.720	.000	-2.190	143	.030	-.396	.181	-.754	-.039
	Equal variances not assumed			-2.197	119.540	.030	-.396	.180	-.754	-.039
Able to clarify information that has been provided	Equal variances assumed	8.323	.005	-1.264	143	.208	-.219	.173	-.560	.123
	Equal variances not assumed			-1.269	111.358	.207	-.219	.172	-.560	.123
Information received is up to date	Equal variances assumed	8.451	.004	-1.930	143	.056	-.354	.183	-.716	.009
	Equal variances not assumed			-1.935	128.341	.055	-.354	.183	-.716	.008
Patients are involved in the Handover Process	Equal variances assumed	10.033	.002	-2.468	141	.015	-.691	.280	-1.245	-.138
	Equal variances not assumed			-2.481	134.789	.014	-.691	.279	-1.242	-.140
Able to keep my mind focused on information given to me	Equal variances assumed	.520	.472	-.074	143	.941	-.011	.151	-.309	.287
	Equal variances not assumed			-.074	139.659	.941	-.011	.151	-.309	.287

Figure 9. Quality of Information

The next subscale in the Likert scale questionnaire evaluated efficiency. There were two questions pertaining to efficiency in this subscale. There no significant difference in the information provided in a timely manner pre-SBAR (M=5.49, SD=1.929) and post-SBAR (M=5.67, SD=1.225); $t(143) = -.838$, $p = .202$. Nor was there a significant difference in the information being reported in a timely manner pre-SBAR (M=5.56, SD=1.225) and post-SBAR implementation (M=5.58, SD=1.297); $t(143) = -.104$, $p = .459$. (Table 6 and Figure 10).

Table 6

Information Provided in a Timely Manner

		Group Statistics				
		SBAR Intervention	N	Mean	Std. Deviation	Std. Error Mean
information is provided in a timely fashion	Pre-SBAR Intervention		73	5.49	1.292	.151
	Post-SBAR Intervention		72	5.67	1.199	.141
information is provided in a timely manner	Pre-SBAR Intervention		73	5.56	1.225	.143
	Post-SBAR Intervention		72	5.58	1.297	.153

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
information is provided in a timely fashion	Equal variances assumed	.829	.364	-.838	143	.403	-.174	.207	-.583	.236
	Equal variances not assumed			-.838	142.465	.403	-.174	.207	-.583	.236
information is provided in a timely manner	Equal variances assumed	.040	.841	-.104	143	.918	-.022	.209	-.436	.392
	Equal variances not assumed			-.103	142.272	.918	-.022	.210	-.436	.393

Figure 10. Information Provided in a Timely Manner

Finally, there were four negative subscale questions in the questionnaire. First, there was not a significant difference in the relevance of information provided to patient care pre-SBAR ($M=4.17$, $SD=1.665$) and post-SBAR implementation ($M=4.10$, $SD=1.824$); $t(141)=.246$, $p=.403$. Interruptions during handover by patients and significant others showed no significant difference in pre-SBAR implementation ($M=4.46$, $SD=1.838$) and post-SBAR implementation ($M=4.72$, $SD=1.717$); $t(141)=-.874$, $p=.192$. There was also no significant difference in pre-SBAR implementation ($M=3.29$, $SD=1.496$) pertaining to handover takes too much time and post-SBAR implementation ($M=3.57$, $SD=1.767$); $t(142)=-1.018$, $p=.155$. Finally, there was not a significant difference in pre-SBAR implementation ($M=4.29$, $SD=1.780$) of participants feeling information is not always given and post-SBAR implementation ($M=4.08$, $SD=1.701$); $t(142)=.718$, $p=.237$. (Table 7 and Figure 11).

Table 7

Negative Subscale

		Group Statistics				
	SBAR Intervention	N	Mean	Std. Deviation	Std. Error Mean	
Information provided not relevant to patient care	Pre-SBAR Intervention	71	4.17	1.665	.198	
	Post-SBAR Intervention	72	4.10	1.824	.215	
Often interrupted by patients and significant others during Handover	Pre-SBAR Intervention	72	4.46	1.838	.217	
	Post-SBAR Intervention	71	4.72	1.717	.204	
Handover takes too much time	Pre-SBAR Intervention	72	3.29	1.496	.176	
	Post-SBAR Intervention	72	3.57	1.767	.208	
Feel important information is not always given to me	Pre-SBAR Intervention	72	4.29	1.780	.210	
	Post-SBAR Intervention	72	4.08	1.701	.200	

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Information provided not relevant to patient care	Equal variances assumed	2.507	.116	.246	141	.806	.072	.292	-.506	.649
	Equal variances not assumed			.246	140.161	.806	.072	.292	-.505	.649
Often interrupted by patients and significant others during Handover	Equal variances assumed	1.157	.284	-.874	141	.384	-.260	.298	-.848	.328
	Equal variances not assumed			-.874	140.590	.384	-.260	.297	-.848	.328
Handover takes too much time	Equal variances assumed	3.221	.075	-1.018	142	.310	-.278	.273	-.817	.262
	Equal variances not assumed			-1.018	138.238	.310	-.278	.273	-.817	.262
Feel important information is not always given to me	Equal variances assumed	.791	.375	.718	142	.474	.208	.290	-.365	.782
	Equal variances not assumed			.718	141.713	.474	.208	.290	-.365	.782

Figure 11. Negative Subscale

The questionnaire ends with addressing the variation between morning and night handover (Table 8 and Figure 12). There was not significant difference between morning and night in the way handover was conducted pre-SBAR implementation ($M=1.15$, $SD=.359$) and post-SBAR implementation ($M=1.12$, $SD=.327$); $t(132)=-.503$, $p=.308$. The final question of the survey pertained to the participants' opinion of which handover was most effective, morning or night. There was not significant difference between pre-SBAR implementation ($M=1.36$, $SD=.483$) and post-SBAR implementation ($M=1.35$, $SD=.483$); $t(105)=.045$, $p=.482$.

Table 8

Variation between Morning and Night Handover

		Group Statistics				
		SBAR Intervention	N	Mean	Std. Deviation	Std. Error Mean
Is There variation between Morning and Night Handover in the way Handover is conducted in your current Department	Pre-SBAR Intervention		67	1.15	.359	.044
	Post-SBAR Intervention		67	1.12	.327	.040
In your opinion, Which Handover is most effective in your current department	Pre-SBAR Intervention		56	1.36	.483	.065
	Post-SBAR Intervention		51	1.35	.483	.068

		Independent Samples Test								
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Is There variation between Morning and Night Handover in the way Handover is conducted in your current Department	Equal variances assumed	1.020	.314	.503	132	.616	.030	.059	-.087	.147
	Equal variances not assumed			.503	130.843	.616	.030	.059	-.087	.147
In your opinion, Which Handover is most effective in your current department	Equal variances assumed	.008	.929	.045	105	.964	.004	.094	-.181	.190
	Equal variances not assumed			.045	104.106	.964	.004	.093	-.181	.190

Figure 12. Variation between Morning and Night Handover

Summary

A review of the Handover Evaluation Scale survey results was undertaken to determine if nurses' perception of handover was influenced by utilizing a standardized SBAR form. For this sample, there were no significant differences for pre- and post-SBAR implementation found in the subscales pertaining to interaction and support and efficiency. However, there were significant differences found in the pre- and post-SBAR implementation for quality of information subscale.

CHAPTER V

DISCUSSION

The impact of poor communication during handover is well documented in the literature. Poor patient outcomes have led to The Joint Commission recommending the implementation of a standardized handover form to reduce lost information and improve patient care and outcomes. Situation, Background, Assessment, and Recommendations (SBAR) is a method of communication which can improve the information provided during nurse-to-nurse handover. The purpose of this study was to evaluate nurses' perception of handover before and after implementation of a standardized SBAR.

Implication of Findings

This study was aimed at evaluating registered nurses' perception of the handover process before and after the implementation of a standardized SBAR form. Implementing a standardized SBAR form has produced two types of benefits. The first is the benefit of utilizing the standardized SBAR form during nurse-to-nurse handover. Next, a secondary benefit may be produced by improvements in patient care through a more effective handover.

In this study, a standardized SBAR guided the nurses through the handover process. This guidance reduced the amount of non-essential information, thereby saving time. This study found a reduction in both generalized documentation time and handover time. In another study, the researcher linked handover and overtime. The cost of overtime resulted in more than \$63,000 a year (Salas, 2017). Another study also found a structured handover reduces the amount of time required for nurse-to-nurse handover

thereby reducing overtime (Mitchell, Gudeczaukas, Therrien, & Zauher, 2018). A reduction in handover time can result in cost savings to the facility.

In addition to time savings, the method for handover increased from verbal only to both verbal and written. Prior to the implementation of the SBAR form, most nurse-to-nurse handovers were conducted as verbal only. Verbal only handover method leads to poor retention of information. A 2005 study found that only 0-26% of patient information was retained when the verbal only handover method was used (Friesen et al., 2008). On the other hand, 96% of the information was retained when handover was provided by both the verbal and written method (Friesen et al., 2008).

Not only is the method of handover important but also the location of handover. Bedside handover has been shown to build relationships and improve patient satisfaction (Anderson & Mangino, 2006). The findings found an increase in bedside handover from pre-SBAR implementation to post-SBAR implementation. This increase in bedside handover promotes both patient and family engagement which also impacts patient outcomes and patient satisfaction.

This study also included a Likert scale which was divided into three subscales. The first subscale of interaction and support found no significant difference from pre- and post-SBAR implementation. This result may be due to the information in the standardized SBAR form itself. The standardized SBAR guides the handover process which focuses on essential patient information. The SBAR form did not contain areas which guide the nurse to debrief about workload issues or difficult clinical situations. While limiting non-essential patient information was one purpose of the SBAR, providing the opportunity to clarify information and ask questions was also a purpose of

the SBAR form. With this in mind, a section or prompt to ask questions and clarify information may be added to future SBAR forms. Promoting clarification by prompting the nurse to ask questions may benefit future users of the SBAR form.

Another key point of the results was the subscale related to the quality of information provided during handover. Statistical analysis of the data found that post-SBAR participants were provided sufficient information about the patient. The study also found significance in how easy it was to follow the information provided and the information was up-to-date. These findings can be linked to the use of the standardized SBAR form. Utilizing the SBAR form to guide the handover process decreases the opportunity to stray from the topics listed in the SBAR.

The data also showed an improvement in involving the patient in the handover process. This improvement was due to the increase in bedside handovers which occurred during SBAR implementation. On the other hand, the study found no significant difference in the participant's ability to check the patient during handover. Handover is an exchange of essential patient information. The word check in the question was not defined, therefore could be interpreted as visualizing the patient or assessing the patient. While it may be necessary to assess patients in certain situations, it is not a common practice during all handovers and is not a recommendation of The Joint Commission. (The Joint Commission, 2017).

The study also reported no significant difference in the participant's ability to keep their mind focused on the information provided. A statistical analysis of the data also found no significance in the post-SBAR implementation for interruptions during handover. Interruptions during handover is well known. A study showed bedside

handover increased patient satisfaction, but nurses often cited bedside handover as time consuming due to frequent patient and family interruptions (Mitchell et al., 2018). While eliminating interruptions may be impossible, reducing interruptions during handover may be achievable by assigning a certified nursing assistant (CNA) to answer phones and call-lights (Mitchell et al., 2018).

Finally, the findings found no significance in efficiency from the questionnaire. Although the study found a decrease in generalized documentation and handover time, there was no significant difference in the Likert scale questions pertaining to efficiency. This finding may be due to the length of study where the staff only had four weeks to become comfortable with the layout of the form.

Secondary benefits from the study also occurred. Improvements in nurse-to-nurse communication improves patient care. Prior to implementing SBAR, the average length of stay (LOS) over the last 13 months was 4.78. After four weeks of utilizing the SBAR form, LOS decreased to 3.67. Also, when comparing the LOS from the same month last year it was 4.427. Reducing LOS has a strong impact on value and an organization's performance. Shortening the patient's LOS decreases the patient's risk of acquiring an infection, having an adverse drug reaction, and developing a pressure ulcer (American Hospital Association, 2016). A decrease in LOS also improves the financial viability of the hospital. While there are many factors that impact this result, there were no other new processes implemented over the four-week period.

Application to Theoretical/Conceptual Framework

Theoretical framework guides research and plays an important role in nursing research. Communication is an essential piece of patient care. Through purposeful communication nurses identify specific goals, problems, or concerns (King, 1981).

Imogene King's (1981) Goal Attainment Theory guided this research study. This theory includes a triad of systems including society, interpersonal, and personal. Nurses play an important role in these systems to improve patient care. King defined communication as a process whereby information is given from one person to another either directly in face-to-face meetings or indirectly (King, 1981). "Communication is the means by which information is given in specific nursing situations to identify concerns and/or problems, to share information that assists individuals in making decisions that lead to goal attainment in the environment" (King, 1981, p. 146).

Coordinating patient care relies on passing along essential patient information. The process of utilizing a standardized SBAR form to communicate moves the nurse toward obtaining the goal of improving patient outcomes. This process of gathering important patient information in preparation for handover ensures goal-oriented nursing care. A standardized SBAR provides a goal list which promotes "continuity of care" (King, 1981, p. 171).

King (1981) described utilizing patient records and patient information in an organized manner to promote goal attainment. A standardized SBAR form continues King's theory of goal attainment by also organizing patient data to promote patient care and goal attainment. The results of this study support an organized and standardized

handover form which improves the quality of patient information provided during nurse-to-nurse handover.

A standardized SBAR form “provides a systematic approach” to attain quality care (King, 1981, p. 177). During nurse-to-nurse handover, “information is shared, mutual goals are set” (King, 1981, p. 176). The concepts of the goal attainment theory offer a way to organize patient information to meet the needs of the triad of systems to ultimately improve patient care.

Limitations

Limitations of the study relate to the sample and length of study. A convenience sample or a non-random sample was used for the study. This sampling method relies on collecting data from a population who are conveniently available to the researcher. Due to the limited time-frame of the study and the limited funds, the option of utilizing a convenience sample best suited this study. This sampling method also resulted in a small sample size. This sampling method along with the small sample size may decrease the generalization of the results to a larger population.

Another limitation was the length of the study. The time-frame for participants to utilize the standardized SBAR was limited to four weeks. This short time frame may have limited participants’ exposure to the SBAR form thereby reducing the participants’ comfort level with the form.

Implications for Nursing

As patient outcomes continue to be tied to reimbursements, the importance of handover communication will remain important. Communication among nurses is an essential piece of patient care. When communication is effective and complete, it ensures

continuity of care and improves patient outcomes. Since effective communication improves patient outcomes, it reduces patient harms. According to this study, the quality of information can be improved in short period of time when a standardized SBAR form is utilized during nurse-to-nurse handover. This study builds evidence that quality information is provided with the use of a standardized handover form.

Recommendations

Nursing research guides nursing practice. Ongoing research can shape best practice guidelines which improve patient care. The recommendations for future studies may include another comparison study which includes a comparison of Hospital Assessment of Healthcare Providers and Systems (HCAHPS) before and after implementation of a standardized handover form.

Conclusion

The link between patient outcomes and handover communication is a common theme throughout the literature. Although the importance of effective communication is well noted, many facilities still lack a standardized handover form. A standardized handover form is recommended by The Joint Commission in an effort to reduce gaps in patient information that can occur during handover. The results of this study build evidence to support that the nurse's perception of the quality of patient information provided during handover while utilizing a standardized SBAR form can be improved. Creating change and implementing best practices in the hospital setting can take over a decade (Kristensen, Nymann, & Konradsen, 2016). It has been over a decade since The Joint Commission recommended utilizing a standardized handover form. The time for a change in practice is now.

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Appendix A

Permission to Use Handover Evaluation Scale

**CENTRE FOR QUALITY AND
PATIENT SAFETY RESEARCH**
Monash Health Partnership

MonashHealth

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1 February 2018

Dear Russell,

Thank you for your interest in our handover research and, in particular, our staff survey. We hereby provide you with permission to use our survey. We also provide you with permission to make adjustments to the survey, as necessary, to suit your local context.

Our original work using this survey was published in 2008 [O'Connell, B., Macdonald, K., & Kelly, C. (2008). Nursing handover: It's time for a change. *Contemporary Nurse*, 30(1), 2-11]. Since then we have conducted further analyses to establish the psychometric properties of the survey. A second paper was published in the *Journal of Clinical Nursing* and we suggest that you include this reference when acknowledging the source of the survey. We have not made any changes to the survey since this publication.

O'Connell, B., Ockerby, C., & Hawkins, M. (2014). Construct validity and reliability of the Handover Evaluation Scale. <i>Journal of Clinical Nursing</i> , 3(3-4), 560-570. doi: 10.1111/jocn.12189
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Please find attached a PDF copy of the survey which is titled the Handover Evaluation Scale (HES). Our recent analysis has focused on Section C: Perceptions of Handover.

Kind regards,

Prof Bev O'Connell

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