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Assessing Nurses' Safety Attitudes in Preventing CLABSI

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This is to certify that the doctoral study by

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has been found to be complete and satisfactory in all respects,

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Abstract

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Seraphine Ikwueme

MS, Hunter College, 2004

BS, York College, 1998

Project Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

Central line-associated bloodstream infection (CLABSI) has been widely studied because of its impact on patient morbidity, mortality, and overall health care costs. Research has shown that nurses' attitudes and perceptions regarding safety are critical to developing and maintaining clinical environments that are safe, prevent CLABSI, and assure better health outcomes. The practice-focused question for this project sought to determine the safety attitudes exhibited by registered nurses on a medical-surgical unit at the practice site. The Stetler model was used as a framework to guide the study. The Safety Attitude Questionnaire (SAQ) measured attitudes and perceptions regarding teamwork, safety, job satisfaction, management, stress recognition, and working conditions. Respondent understanding of CLABSI prevention was also measured. A nonrandomized purposeful sampling was used to invite nurses to participate in the study. A total of 61 nurses meeting inclusion criteria were invited to participate. Of those invited, 22 completed the survey, resulting in a 36% response rate. The survey consisted of a 36-item SAQ scale and a 5-item CLABSI prevention scale. The level of agreement on the 6 SAQ subscales ranged from a low of 3.3 to a high of 3.9 on a 5-point Likert scale. Perceptions regarding CLABSI prevention were notably higher at 4.26. When responses to specific questions were examined, low agreement was noted for (a) understanding who to direct questions to regarding patient safety, and (b) feeling the levels of staffing were adequate to care for the number of patients served. The number of years in nursing practice was associated with considerable variability in the 6 SAQ subscales. This project promotes positive social change by raising awareness of the safety culture associated with nursing care and for the prevention of CLABSI.

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Dedication

This study is dedicated to all nurses who work tirelessly to improve patient outcomes, save lives, and contribute to the development of the nursing profession.

Acknowledgments

I would like to express my gratitude to Dr. Andrea Jennings-Sanders and Dr. Wendy Ostendorf for their support and guidance throughout this study. I sincerely appreciate the time spent in helping me and the recommended strategies you provided to achieve my goals.

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Section 1: Nature of the Project

Introduction

Central line–associated bloodstream infection (CLABSI) poses a tremendous burden to patients, caretakers, and organizational leadership. Although highly preventable, CLABSI contributes to increase health care costs, prolongs patients' hospital stays, and leads to morbidity and mortality (Zhou et al., 2015). In 1999, The Institute of Medicine's (IOM) released a report entitled "*To err is human: Building a safer health system."* This document heightened public awareness of the need to prioritize hospitalized patients' safety; consequently, hospitals strive to maintain an environment of patient safety as a major component in achieving positive patient outcomes (Sammer & James, 2011).

Hospitals have implemented several initiatives and strategies to prevent or eliminate potential negative issues that affect patient safety. Successful initiatives to decrease CLABSIs require interdisciplinary collaboration, empowerment, leadership, research, and the use of available resources; however, an often-overlooked factor significant to the success of initiatives to decrease infections are safety attitudes of professional nurses who deliver direct patient care. Nurses' attitudes, beliefs, and safety culture predicate the actions they take to achieve and maintain an environment of patient safety. Prior to designing and implementing interventions aimed to effect change, nursing leadership must explore and understand the safety attitude of a nursing unit. Weaver, Weeks, Pham, and Pronovost (2014) deemed the creation of a culture of safety an important part of improvement efforts in decreasing infections.

Since the publication of *To err is human,* health care systems, health care organizations, and providers have made delivering safe, evidence-based, cost-effective, quality patient care a priority (White & Dudley-Brown, 2012). Nurses' approach to safety is necessary to ensure quality patient care and optimum clinical performance in efforts to prevent CLABSI. Nurses remain central to providing a culture of safety and are at the forefront of efforts to bring about change (Ulrich & Kear, 2014).

Well-recognized institutions such as Johns Hopkins Hospital have demonstrated the importance of a safety-culture attitude toward patient safety, adherence to evidence-based practices, and improving work among team members. This successful program has produced a drastic reduction in CLABSIs. (Paine, 2013). Elements included identifying steps known to prevent CLABSI and fostering an environment in which nurses prioritize patient safety (Paine, 2013).

The importance of assessing safety attitudes in the workplace has been a recurring theme in much of health care literature. Hughes, Chang, and Mark (2009) described safety attitude as an important first step in creating an environment of workplace safety. Studies done by Hughes and colleagues support the importance of workplace safety attitudes among registered nurses. It was also noted that workplace safety is an essential institutional priority for quality health care (Hughes et al., 2009; Ulrich & Kear, 2014).

Chaboyer et al. (2013) emphasized that workplace safety culture is a crucial ingredient in patient outcomes and is frequently a guide for quality-improvement initiatives. Safety attitude means a safer, healthier, and more productive workplace. Like

any aspect of effective business, growing positive safety requires commitment, resources, and focused action. Per the Agency for Healthcare Research and Quality (AHRQ), several assessment tools to measure safety attitudes have been developed for hospitals, nursing homes, outpatient medical clinics, pharmacies, and ambulatory centers (AHRQ, 2014; Daly, Glynn, Relihan, Ryder, & Silke, 2009).

Problem Statement

CLABSI represents a serious patient safety issue and must be addressed to avoid further complications (Furuya, et al., 2011). Central line–related infections are common, compromise patient safety, and are preventable (Chu, Adams, & Crawford, 2013). Therefore, preventing CLABSIs is critical to health care organizations, health care managers, stakeholders, and professional nursing practice. Health care professionals and health care organizations are obligated to ensure patients of minimal safety risks, including the risk of infection. Preventing CLABSIs substantially decreases patient mortality, morbidity, health care costs, and hospital stays (Redmond, Donlon, Boyle, Einarsdottir, 2011)

Patient safety has emerged as both a health care and a public safety issue since the IOM's 1999 report brought hospital-safety issues to the public's attention. To decrease the risk of all infections, health care organizations have developed quality initiatives and patient-safety guidelines to improve clinical practice. Nurses are central to carrying out these initiatives and achieving an environment that supports a culture of patient safety (Ulrich & Kear, 2014).

The foundation for implementing evidence-based patient care to prevent CLABSI

is dependent on assessing and understanding the safety attitudes among nurses. Results of an assessment of safety attitudes can be instrumental in developing and implementing programs to improve nurses' understanding of the significance of CLABSI to patients and health care organizations and can play an essential role in decreasing incidences. It is therefore important to measure the safety attitudes of nurses on the medical-surgical unit to increase awareness, explore concerns, and guide quality-improvement efforts. Attitudes and beliefs about issues related to safety in the workplace shape a culture within a work environment (Paine, 2013). The SAQ is one of the most common and reliable tools available to measure these important phenomena in clinical environments among players ranging from direct care providers to senior management.

Purpose Statement and Project Objectives

Central line–associated infections create a significant health burden for patients and a significant financial burden for health care organizations. Health care leaders must be diligent in their attempts to reduce, if not prevent CLABSIs. Nurses' attitudes toward safety play a critical role in any initiative to decrease CLABSIs. The purpose of this study was to assess the safety attitudes and perceptions of registered nurses who work on a hospital medical-surgical unit. Interventions for preventing hospital-acquired infections depend upon the patient-safety environment of nursing units and require evaluating nurses' baseline attitudes toward safety. Findings can assist with modifying and improving work conditions and related patient outcomes.

Significance and Relevance to Practice

The health care delivery system continues to grow increasingly complex. Society demands that health care organizations design and implement systems that promote safe, timely, patient-centered care. *To err is human* concluded that strategic measures to improve quality care and patient safety are critical to improving health outcomes (as cited in Zaccagini & White, 2011). Nurses are responsible for delivering safe, quality patient care and for creating and maintaining an environment in which other health care providers can deliver evidence-based care to improve patient results. Nurses are at the forefront in establishing a care environment that is safe, and evidence-based and results in improved quality and care. Assessment of registered nurses' safety attitudes on the medical-surgical unit is a crucial component of patient safety initiatives in clinical practice.

An important element in improving patient safety and quality care is the development of a culture of safety (Weavers, Lubomski, Wilson, Pfoh, Martinez, Dy, 2013). Assessing safety attitudes among nurses has a direct link to patient experiences. It also enhances understanding of how the unit functions, how nurses perceive safety, and supports the improvement of practice. Results obtained from the respondents who complete the SAQ reflect safety attitudes among nurses in the medical-surgical unit.

Results will be used to identify deficiencies, raise awareness concerning patient-safety issues, fulfill state and national regulatory safety-related requirements, and lead interventions for creating safer clinical work environments. Studies conducted by Watts, Percarpio, West, and Mills (2010) supported the use of the SAQ to measure the

effectiveness of safety-improvement programs. A positive attitude is crucial for a safe environment, competent staff, job satisfaction, good working relations, management support, and interdisciplinary collaboration. It is therefore vital to assess the safety attitudes and perceptions of nurses to initiate change.

Project Question

CLABSI in hospitalized patients remains a paramount concern for health care institutions because these infections jeopardize patient safety. Therefore, organizational leadership must seek ways to prevent infection and avoid subsequent patient care and organizational complications. The success of prevention programs to decrease CLABSI rates requires a multidisciplinary, professional team approach that is significantly dependent on the professional nursing staff. Safety attitude has become increasingly evident in the patient-safety movement. Nurses play an essential role in implementing and complying with evidence-based initiatives that have the potential to decrease complications, including CLABSI. Given that nurses are also at the center of providing an environment and culture of safety, it is important to assess the safety attitudes among nurses. Therefore, the key question for this project is as follows; What are the safety attitudes exhibited by registered nurses on the medical-surgical unit?

Evidence-Based Significance of the Project

Evidence-based practice has been central to policymakers, health care providers, and management. Heightened interest in providing evidence-based, cost-effective, and reliable care is greater than ever before. Gabrani, Hoxha, Simaku, and Gabani (2015) argued that patient safety is a critical component of quality in health care. Safety attitude

is becoming increasingly important to understand in relation to its influence on clinical practice and patient outcomes. Teamwork and communication can improve quality and safety, decrease patient harm, promote professional collaboration, decrease workload, and improve staff and patient satisfaction. The SAQ is a commonly used and rigorously validated means for measuring safety attitude in health care. Higher scores on the survey have been found to be associated with more positive patient outcomes. Measuring the safety attitude among registered nurses on the medical-surgical unit is therefore a critical first step in implementing evidence-based approaches in this clinical work environment.

Sammer and James (2011) explained that the AHRQ describes culture as a critical aspect of health care quality and safety. They emphasized that the Joint Commission holds health care leaders accountable for regularly assessing the safety culture within their organization. A safety-attitude survey, specifically a unit-based study, can assess workplace conditions that may lead to problems. The assessment can diagnose safety culture, evaluate patient-safety interventions, track change, and be used to conduct internal and external benchmarking as well as fulfilling regulatory requirements. Alijadhey, Al-babtain, Mahmoud, Alageel, and Ahmed (2016) concluded that a culture of patient safety should be promoted by health care organizations.

Understanding the role safety attitudes play in shaping clinical practice is important for improving quality and safety of care to patients already at risk. Hughes et al. (2009) described safety attitudes among workers as an important first step in creating work environments where safety is a priority. Safety culture is therefore a crucial component for reducing infections in hospitals. A unit's safety culture reliably can

predict several issues such as teamwork, safety climate, complications, and infections, as well as operational outcomes and nurse turnover.

The Johns Hopkins Center for Innovation used safety culture as part of its Comprehensive Unit-Based Safety Program (CUSP). This program design implements safety improvement and changes workplace safety culture in the health care setting. CUSP is a 5-step program that drives culture changes primarily through awareness of safety issues and education. The goal of CUSP is to create sustainable patient safety improvement by creating a culture of safety that drives units to achieve organizational and national patient-safety goals. CUSP builds the capacity to address safety issues by combining clinical best practice and the science of safety to improve the foundation of how physicians, nurses, and other clinical team members work together (Paine, 2013). The success of this program indicates that a change in safety attitudes can bring significant improvement that will benefit everyone involved.

Implications for Social Change in Practice

Nurses' attitudes regarding the safety environment can potentially influence nursing practice. This type of study provides an opportunity to engage leadership, address quality issues, and provide professionals and other support staff with evidence-based data to improve care. It also provides a link to interprofessional and extraprofessional communication and collaboration. Research adds to new knowledge and is a significant benefit to practice and the nursing profession. Other implications for social change include benchmark data, improved staff satisfaction, quality improvement, establishing evidence-based approaches, and impact on organizational culture.

The growing science of organizational culture suggests that unit culture in health care is associated with certain clinical and administrative outcomes. Safety attitude assessment results provide a snapshot of the various mediums in the patient-care areas, including safety culture, teamwork climate, management perception, working conditions, job satisfaction, and stress recognition. A high teamwork climate is associated with low infection rates and lower nurse turnover rates. Understanding the local unit culture will allow for the provision of support and resources to the clinical areas to ensure the highest level of safety and service excellence.

The IOM issued a report that highlighted the concerns regarding patient safety and recommended that health care systems provide care that is safe, effective, patient-centered, timely, efficient, and equitable (as cited in Terry, 2015). Thus, several organizations have addressed this issue. Workplace attitudes can have a profound impact on outcomes of care. When measured with a valid and reliable tool, safety-related attitudes can predict outcomes such as hospital-acquired infections, pressure ulcers, and operational outcomes, including nurse turnover (Paine, 2013). The utilization of a highly valid and reliable tool such as the SAQ for this study can be used as a means for early identification of problems, raise awareness, influence teamwork, and improve workplace safety culture.

Definition of Terms

Defining key words related to the study will enhance understanding of the problem as well as goals and objectives of this proposal.

Attitude: A manner of acting, feeling, or thinking that shows one's disposition, opinion, and so forth (Ratanasiripong & Chai, 2013).

Bundles: Evidence-based practices, which when performed collectively and reliably, have been proven to improve patient outcomes (Institute for Health Improvement, 2015).

Central line–associated blood-stream infections (CLABSI): Bloodstream infections that develop after 48 hours of central venous catheterization (Zhou et al., 2015).

Comprehensive unit-based program: An interactive approach to improve a unit's teamwork and safety culture (White & Dudley-Brown, 2012).

Evidence-based practice: Use of best evidence available to guide patient-care practice (White & Dudley-Brown, 2012).

Patient-safety culture: Organizational culture that creates a positive environment in which patient safety is most likely to occur (Ulrich & Kear, 2014).

Registered nurse: An individual who has graduated from a state-approved school of nursing, passed the NCLEX-RN exam, and is licensed by a state board of nursing to provide patient care (National Council for State Boards of Nursing, 2015).

Safety attitude: The shared attitudes, beliefs, values, and assumptions that underlie how people perceive and act upon a safety issues within their organization (Shei et al., 2011).

Safety Attitude Questionnaire–Short Form: An instrument to measure safety attitudes among health professionals. The questionnaire comprises six factors: teamwork

climate, safety climate, perception of management, job satisfaction, working conditions, and stress recognition (Bondevik, Hofoss, Hansaen, & Deilkas, 2014).

Safety climate: The shared perceptions about the importance of safety to the organization as communicated through the attitudes and behaviors that are expected, supported, and rewarded in the work environment (Hughes et al., 2009).

Safety culture: The product of individual and group values, attitudes, perceptions, competencies, and patterns of behavior that determine the commitment to, and the style and proficiency of, an organization's health and safety management (Huang, et al., 2010).

Stetler model: A guide to an empirical inquiry that is built from a set of related concepts and function to outline the inquiry or set of actions (White & Dudley-Brown, 2012).

Assumptions and Limitations

Assumptions for this study were that participants would provide honest responses to the questionnaires. Respondents' perceptions can vary over time and are influenced by daily events within the unit. It was also assumed that the inability of many nurses to participate in the survey was influenced by highly demanding work schedules and responsibilities. This could have led to a bias in respondent selection. Limitations of the study are that the low response rate can limit the ability to generalize findings to the target population. Data obtained from the unit may not be generally applicable to other settings or represent other departments in the organization. Surveys do not provide an exact measurement but an estimate of the population under study.

Summary

CLABSI is an urgent health problem that increases patient morbidity and mortality rates, hospital stays, and health care costs. The IOM's report *To err is human* has heightened awareness regarding preventable complications among hospitalized patients. Organizations continue to implement evidence-based strategies and initiatives to address CLABSIs and to improve patient outcomes by preventing these infections via a method that ensures patient safety. The purpose of the study was to assess safety attitudes of registered nurses. The study is significant as nurses are responsible for direct patient care. Assessing safety attitudes among nurses is therefore arguably a critical first step in implementing changes that will impact evidence-based practice. Findings from the study can be benchmarked against other data to generate new knowledge that can influence practice. Several constraints inclusive of a poor response rate may have affected the results of the study. However, this effort to acquire new knowledge regarding attitudes and perceptions among the nursing staff carry significant implications for impacting a workplace culture and evidence-based practice.

Section 2: Background and Context

Conceptual Model

This study was guided by the Stetler model (See Figure 1). Utilization of this model has been found to support evidence-based practice in nursing. The model aids in formulating a series of critical-thinking and decision-making steps designed to facilitate research findings (White & Dudley-Brown, 2012). The Stetler model was relevant to this study because it guided the steps of the study from the preparation phase to evaluation. It helped in the process to assess how research findings and other relevant evidence can be applied in practice. This model examines how information obtained can be used to create formal change within an organization. It also provides a means to examine the way in which to use research on an informal basis as part of critical thinking and practice evaluation. The Stetler model links the use of research to the groundwork of evidence-based practice and provides a guide to examine the relationship between using research and evidence-based practice. (National Collaborating Centre for Methods and Tools, 2011). The model provided a framework for this study and demonstrates how its application guides the study.

The model is a 5-phase process used to execute and guide the project. The phases of the model include preparation, validation, comparative evaluation and decision, translation and application, and evaluation (National Collaborating Centre for Methods and Tools, 2011). The model served as a guide to develop the different phases of the study, from preparation to evaluation. In the preparation phase, the search for evidence is conducted through the existing literature regarding safety attitude. The evidence obtained

helps identify the problem.

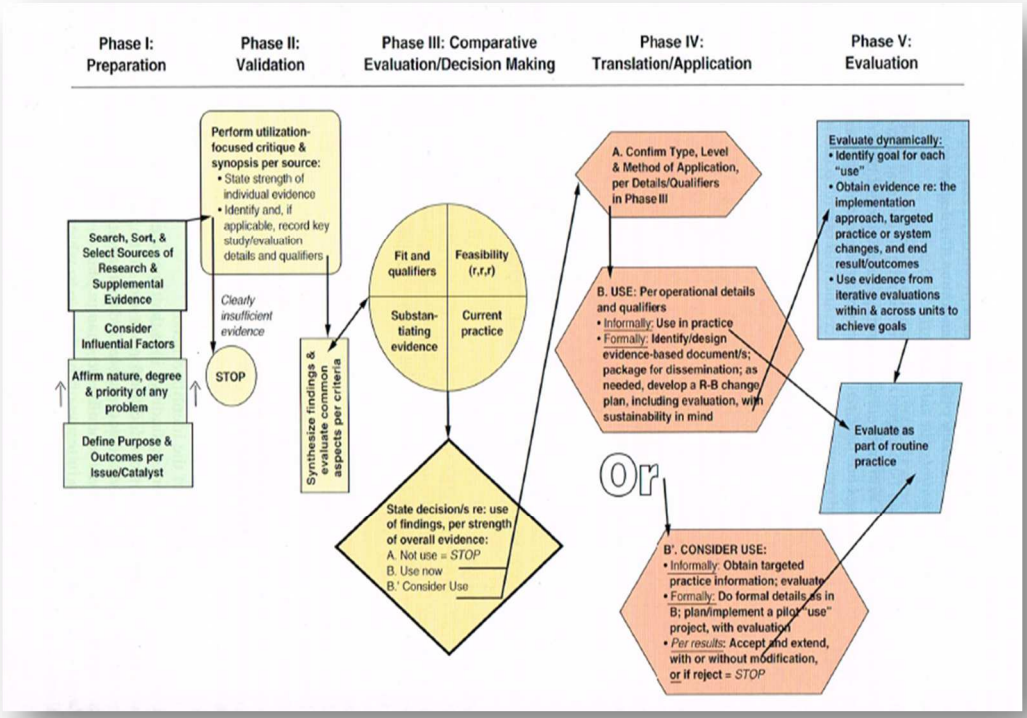

*Figure 1***.** The Stetler model of evidence-based practice. Reprinted from *Models to Guide Implementation of Evidence-Based Practice* (p. 248), by B. M. Melnyk and E. Fineout-Overholt, 2011, Philadelphia, PA: Lippincott, Williams and Wilkins. (Used with permission. See Appendix F.)

In the validation phase, the survey is carried out during this period. Registered nurses are provided with survey questionnaires, specifically the SAQ, using a Likert-type response that addresses six domains of safety attitude. The third phase is the decision-making phase. Data from the survey are collected and analyzed, and findings are summarized. A decision about whether the findings are applicable is made, using supporting evidence, and the practicality of presenting the evidence to leadership and

management is assessed. During the fourth phase, the application phase, findings from the study will be disseminated to the appropriate individuals, such as the unit manager and others in leadership who may want to consider using the findings for practice changes. It is also important to inform those who participated in the study about the results and any plan for future interventions. In the fifth and final phase, the project will be evaluated to assess whether the goals established were met. The method of evaluation used in this case is a summative evaluation of the project to find out if the goals set for the project were achieved.

Using the Stetler model as a guide, safety attitudes among registered nurses can be assessed by using the steps of preparation, validation, decision making, application, and evaluation. The model can be used to provide a valid evaluation for needed change in current practice and that a good fit between leaders and stakeholders exists. This model can also be used to guide risk-benefit analysis, desirability, and feasibility studies.

Relevance to Nursing Practice

Nurses play an important role in maintaining and promoting patient safety. Nurses foster open communication about safety issues such as stress, fatigue, and other work-related problems. Nurses ensure the delivery of quality health care to patients, families, and upholding high ethical standards. They have a critical responsibility to uphold the highest level of quality and standards in their practice, including fostering a safe work environment. Nursing leaders ensure resources are available to achieve safety results, providing resources for adequate staffing, equipment, and education. Therefore, it is

important that nurses' attitudes are well understood to have a positive effect on their work and the patients they care for.

General Literature

A first step in patient safety improvement is to understand the safety attitude of health care providers. In many peer-reviewed studies the importance of safety attitude in health care were addressed. Safety attitude is typically assessed through surveys such as the SAQ. The purpose of this literature review is to analyze published studies regarding safety attitudes among health care professionals and the main themes of safety, including the SAQ. A literature search was conducted using the Walden University library to access the various databases. Through the search, several studies were identified addressing safety attitude, safety culture, and the SAQ. A review of the literature suggests that nurses' safety attitudes are widely recognized as an essential part of patient safety and have been frequently studied using the SAQ.

The literature review follows a thematic approach and identifies the main ideas about safety culture and CLABSI. Studies were identified using databases including the Cumulative Index to Nursing and Allied Health Literature, PubMed/Medline, Google Scholar, and the Cochrane Library. Inclusion criteria were that publications had to be dated between 2009 and the present. The publication had to be relevant to the topic and address the main themes of safety culture, safety in health care, CLABSI, and the SAQ. Articles had to be peer-reviewed to be suitable for inclusion in the literature review.

CLABSI continues to threaten patient safety and increase the burden among health care organizations and caregivers. Patient safety is critical in high-quality care, and

nurses are at the center of providing and coordinating aspects of quality in the health care delivery system. Considerable attention has been given to means of preventing complications, as seen in CLABSI. One area that has sparked much interest is safety attitude, which is deemed an important first step in creating an environment to improve quality of care and patient safety. To assess safety attitudes among nurses, tools such as the SAQ have proved beneficial to measure safety attitude to make improvements.

Tedja, Gordon, Fatica, and Fraser (2014) estimated there are more than 250,000 cases of CLABSI annually in patients in the United States, resulting in high-cost, prolonged hospitalization and increased morbidity and mortality. A single tertiary center with a 1,200-bed hospital and 209 ICU beds was chosen for a 1-year descriptive review (Tedja et al., 2014). The objective of Tedja et al.'s study was to review and describe devices used and CLABSI events among patients in a non-ICU setting and to look at morbidity and mortality events. Tedja et al. used a cohort from an infection-prevention database. They reviewed charts and administrative data sets for further identification of patients. They found a total of 136 patients with 156 CLABSIs (Tedja et al., 2014). The overall device-utilization ratio was 0.27 (Tedja et al., 2014). A tunneled line was in place in 118 cases, and a peripherally inserted central line was in place for 32 of the CLABSI events (Tedja et al., 2014). Hospital mortality was 23% in the affected group, and the non-ICU rate was significantly higher than the ICU rate (Tedja et al., 2014). Tedja et al. concluded that CLABSI rates during a 1-year period were higher in patients outside the ICU and were associated with significant mortality.

Concerns about complications patients acquire during hospitalization prompted the IOM to investigate and recommend that health care organizations develop systems that decrease the burden of problems that affect patients. Cal, Correa, Dos Santos, Edmond, Guastelli, Marra, and Moura, (2010) looked at the impact of a program to prevent CLABSI. A quasi-experiment was conducted in an ICU and two step-down units during a period from March 2005 to March 2007. The study involved multiple interventions to reduce the incidence of CLABSI. The mean incidence density of CLABSI per 1,000 catheter days in the ICU was 6.4 in phase 1 and 3.2 in phase 2. Results for the step-down unit during the same period were 4.1 in phase 1 and 1.6 in phase 2. Marra et al. (2010) concluded that reducing CLABSI rates in the ICU setting is a complex process.

In evaluating the relationship between central line infection rate and patient safety climate profile, findings from a study support using pattern-based means for looking at safety climate rather than examining the relationships between each dimension of safety climate and the wider safety result such as CLABSI. The study conducted by Weavers, Weeks, Pham, and Pronovost (2014) noted that CLABSI remains one of the most frequent and deadly hospital acquired infections in the United States and that establishing a culture of safety is a crucial part of quality improvement. Secondary analysis of data collected from 237 adult ICUs involved in the project, which was designed to assess patient safety climates and CLABSI rates, was conducted. Zero-inflated Poisson analysis suggested a relationship between the related incidence of CLABSI and the safety climate profile. The investigators concluded findings support using pattern-based ways for testing

safety climate rather than looking at the relationship between each limited aspect of safety climate and larger safety outcomes such as CLABSI.

Prevention and control of infection is a worldwide priority; however, compliance with interventions to prevent infection can be minimal. Ward (2012) felt that one reason for this problem is staff attitude. In an interview study, Ward (2012) examined the experiences and learning needs of nursing students pertaining to infection prevention. Using a qualitative approach, data were obtained through interviews with 31 nursing students and 32 mentors. Framework analysis was used to analyze the recorded and transcribed interviews. Three themes emerged in the findings, including attitudes toward the Infection Prevention and Control Nurse. In the study's conclusion, areas for future research and recommendations to address aspects where attitudes may affect both clinical practice and education were identified.

Researchers used surveys to examine the use of infection-prevention strategies and factors affecting their use. Weaver, Weeks, Pham, and Pronovost (2014) felt that creating a culture of safety is an important part of infection-improvement efforts. Few studies have examined the role of safety climate in patient-safety outcomes. A survey designed to assess patient climate and CLABSI rates was investigated. Results showed the relationship between safety climate characteristics and CLABSI. Researchers discussed that understanding the role that organizational factors, such as safety climate, play in shaping patient outcomes is critical for improving the quality and safety of care provided to patients who are most at risk.

A nationwide survey was conducted in Japanese hospitals to look at the use of infection- prevention strategies and factors influencing their use. Nine hundred seventy-one hospitals were surveyed over a nine-month period. A total of 685 hospitals responded to the survey. Results from that study indicated that higher safety-centeredness was associated with regular use of prevention practices. The findings highlight the importance of fostering an atmosphere that prioritizes patient safety. A commitment to safety should in turn promote the use of effective measures to decrease infections (Greene, Ratz, Saint, Sakamoto, Sakihama, &Tokuda, 2014).

Safety attitude is a crucial aspect of patient outcomes and is increasingly being studied as a quality-improvement initiative, a strategy to improve safety and a means to create a more efficient system. To establish a baseline of safety culture, Chaboyer et al. (2013), in a nationwide study in 10 Australian ICUs, used the SAQ (ICU version) to measure safety culture. Descriptive statistics were used to report the mean scores for the six subscales of the questionnaire. The results showed a total of 672 respondents. Nurses who participated accounted for 76% of the respondents. The highest rating was for teamwork while working conditions received the lowest rating. Measuring the standard of safety culture of an ICU allows leaders to implement specific strategies to improve certain dimensions of safety culture. These strategies may improve the working conditions of staff and the care provided to patients.

Specific Literature

It is apparent from the review that there is extensive research that focuses on safety attitude, and the SAQ has played a significant role in evaluating attitudes in many

studies. The SAQ has been widely used in the United States and other countries around the world. It has been translated into different languages, including English, Greek, Italian, German, and Swedish. The questionnaire has been tested for its reliability and validity to measure safety culture, safety attitudes, and safety climate. Safety culture has been evaluated using the SAQ in various health care settings such as ICUs, medical departments, surgical units, pharmacies, pediatrics, outpatient clinics, and primary care areas. Various disciplines have used the survey to measure safety culture as a strategy to look at specific dimensions of safety culture, to examine variations among units, to assess the effectiveness of improvement activities, and to benchmark against other providers locally and in other regions.

Alayed, Loof, and Johansson (2014) examined nurses' attitudes toward culture in six Saudi Arabian ICUs using a descriptive method in a cross-sectional research design. Findings from this study showed that the SAQ can be used to measure safety climate to identify areas of improvement per nurses' attitudes and perceptions and identified service strengths and improvement areas in Saudi Arabian ICUs. A prospective cohort study at a single academic medical center with more than 800 inpatient beds in Seoul, Korea, was carried out using the SAQ as part of a hospital-wide, high-risk-patient-care improvement program. The response rate of the pre- and post-SAQ survey was 43.6% and 45.3%, respectively. Responses revealed significant improvement in domains of the questionnaire. In the study's conclusion, researchers noted the change associated with health care providers' attitudes toward patient safety by using the SAQ (Je et al., 2014).

Research conducted in several other countries explored safety in different settings. The SAQ was translated and adapted to facilitate needs in various areas and countries. The study of Bondevik, Deilkas, Hansen, and Hofoss, (2014) aimed to investigate safety attitude among health care providers in Norwegian primary care by using the SAQ. The cross-sectional study's overall response rate was 52%; 72% of the respondents were nurses, and 39% were doctors. Results showed scores of nurses, doctors, age groups, gender, and different domains about several patient safety factors. The findings also showed that nurses scored higher than doctors, older health professionals scored higher than younger and male practitioners scored higher than female practitioners. Results from the study can be used to compare groups and make significant observation among groups, including sex, gender, and age.

In a similar study carried out at a Dutch pediatric surgical ICU, researchers used the SAQ to measure safety climate and assessed caregiver attitude using the six domains: teamwork, job satisfaction, perception of management, safety climate, work conditions, and stress recognition. The prospective longitudinal survey study, done at two periods, had a response rate of 85% and 74%, respectively, for the two measurement periods. Researchers noted that earlier studies showed the SAQ had good psychometric properties and produced benchmark data to evaluate performance among peers in each unit. They concluded that although results on most domains were good when compared to benchmark data, there is still room for improvement (Poley, van der Starre, van den Bos, van Dijk, & Tibboel, 2011).

The German-language version of the SAQ showed good psychometric value when used to assess safety in clinical areas. Engberg, Kung, Schwendiman, Sereika, Sexton, and Zimmerman, (2013) carried out a survey in two university hospitals in 2009. The SAQ was distributed to a sample of 406 health-professional participants. The questionnaire validity was tested using guidelines from the American Educational Research Association. Results obtained from this study achieved a 78% response rate. SAQ factor scores showed positive correlation with the safety organizing scale. The SAQ German version showed moderate to strong internal consistency reliability (Cronbach's alpha = .65-.83). The researchers concluded that this version of the SAQ demonstrated good properties and shows promise to be a good instrument to measure safety climate in Swiss hospital settings.

The development and validation of the SAQ Gujarati version allowed for hospitals to evaluate patient safety culture in Indian hospitals. Patel and Wu (2016) discussed that, although many hospitals are attempting to promote a safety agenda, there are limited options to track progress. The study conducted by Patel and Wu aimed to translate and culturally adapt the SAQ into Gujarati to provide evidence of its reliability and validity in the first phase of the study. The second phase was a cross-sectional survey of safety attitudes in four private hospitals. The survey was distributed to 424 health care workers and received a response rate of 79%. The questionnaire showed acceptable reliability and preliminary evidence for construct validity among health care workers in the participating hospitals. The initial culture score results showed outcome in line with international standards. Patel and Wu concluded that the rendition of the SAQ in an

Indian setting could help initiate safety discussions and improve the potential to provide feedback to staff members.

In the literature, many researchers measured safety attitude using surveys. The most commonly used survey is the SAQ instrument, which examines perceptions of six dimensions inclusive of (a) teamwork, (b) safety climate, (3) job satisfaction, (4) management, (5) working conditions, and (6) stress recognition. Watts, Percarpio, West, and Mills (2010) used the SAQ as a measurement outcome for a patient-safety improvement program. The study involved operating room staff at 63 Veteran Affairs Medical Centers who were tested using the SAQ before and after medical team training. Results showed improvement as measured by the SAQ. Researchers concluded that the SAQ demonstrated good use as a possible proxy measure. The instrument was also used to benchmark results against other data.

Relihan, Glynn, Daly, Silke, and Ryder (2009) assessed the safety culture in an acute medical admission unit (AMAU) of a teaching hospital using the SAQ tool. All 92 members of the health care staff were surveyed. Safety attitude scores for overall unit and individual caregivers were assessed. Results indicated the AMAU scored significantly higher in some domains when compared against an international benchmark. The researchers concluded that the SAQ was successfully applied and gave a valuable insight into staff issues, employee safety, clinical risk management, and medication safety.

The SAQ instrument proved to be a valid and reliable instrument as evidenced by studies conducted by various researchers. Nguyen et al. (2015) confirmed the validity of

the SAQ in a study in Italian hospitals in the northeast of the country. The questionnaire was delivered to staff working in four separate departments in two hospitals. Confirmatory factor analysis was used to assess the content validity. Retest was performed to assess reliability. A 60% response rate showed a high degree of agreement in test-retest correlation between items. Researchers found the SAQ in Italian has satisfactory characteristics and is a valid instrument to measure safety culture in Italian hospitals.

Adoption and validation of the SAQ for the Danish hospital setting was performed by five investigators. The purpose of the study was to adapt the SAQ for use in Danish hospitals, assess construct validity and reliability, and present benchmark data. The questionnaire was distributed to 1,263 staff members from 31 inpatient and outpatient units of five hospitals. Construct validity and reliability were tested in a cross-sectional study. Participation was 73.2% (N=925) of invited health care workers. Inter-scale correlation between the factors showed moderate to high correlation. Questionnaire reliability was high (α=0.89), and scale reliability ranged from α=0.70 to α=0.86 for the six scales. Investigators concluded that the SAQ demonstrated good construct validity and internal consistency reliability, suggesting it is a useful and scientifically sound tool for evaluating safety culture in Danish hospitals (Bartels, Christensen, Kristensen, Mainz, & Sabroe, 2015).

A cross-sectional study conducted in Albanian hospitals was used to establish the reliability and validity of the SAQ by evaluating the psychometric properties. Participants in the study came from four regional hospitals in Albania. Nurses accounted for 132 of

the 341 health care providers participating in the study. Researchers obtained a response rate of 70%. The results confirmed factor analysis and its goodness-of-fit indices showed good model fit with 70% of the respondents. The conclusion was that the SAQ is a useful tool for evaluating safety attitude (Gabrani, Hoxha, Simak, & Gabrani, 2015).

Recent studies increasingly used the SAQ as the instrument of choice to measure teamwork in health care settings, describe health care professionals' attitudes toward patient safety, and elicit strategies to promote safety culture. The objective of Valentine, Membhard, and Edmonson (2015) was to identify and review survey instruments used to assess dimensions of teamwork. The research design involved a systemic review of articles published before September 2012 to identify survey instruments used to measure teamwork and assess their content. Results from the review found 39 surveys that measured teamwork. Conclusions from the study supported researchers aiming to advance research on teamwork in health care to consider using or adapting one of the instruments. The SAQ is among these instruments.

Brasaite, Kaunonen, Martinkenas, and Suominen (2016) thought patient safety is an increasingly important topic in health care and that the rise of patient-safety incidents poses more challenges for hospital management. A quantitative study using the SAQ was conducted in three hospitals in Lithuania. Data was collected in 2014 from physicians, nurses, and nurse assistants. The results obtained showed positive attitudes, and these were specifically related to the respondents' levels of job satisfaction. Other indicators were also associated with safety attitude areas.

To explore nurse and physician attitudes and perceptions relevant to safety culture, Abbasi, Abdi, Delgoshael, Ravaghi, and Heyrani (2015) carried out a case study using a mixed method design. The SAQ assessing the safety climate through six domains was completed by nurses and physicians in an academic ICU. Mean scores across the domains, obtained from the results, ranged from 52.3 to 72.4 on a 100-point scale. Further analysis indicated that there were statistically significant differences between physician and nurse attitudes toward teamwork and job satisfaction. The results indicate that all areas need improvement and that nursing management can contribute to promoting safety culture by encouraging staff to report concerns and problems.

The studies reviewed demonstrated the importance of safety attitude in health care and the increased use of the SAQ as an instrument to measure safety attitude in health facilities nationally and internationally. The questionnaire has been translated into several languages and has been successfully tested for its reliability and validity. The desire of health care professionals to improve patient safety will motivate the continued use of the SAQ. Results obtained from the survey can provide early indication of the need for safety improvement and can be used as a tool to benchmark with other departments and organizations.

CLABSI continues to threaten patient safety and increase the burden among health care organizations and caregivers. Patient safety is critical in high-quality care, and nurses are at the center of providing and coordinating aspects of quality in the health care delivery system. One important aspect is safety attitude, which must be first understood before initiating any strategy for change.

Role of the Doctor of Nursing Practice Student

As an agent of change, the Doctor of Nursing Practice must be an advocate for health care and advance nursing practice through best practice available and new knowledge. The evidence obtained from the study will be presented to staff and leadership to help problem-solve and enhance practice. The integration of the best available evidence and the use of expertise and new knowledge are essential to promote a higher quality of care. The study was carried out with the guidance of my chair, committee member, and the University Review Board to ensure that every step in the process in done professionally and in accordance with established guidelines.

Section 3: Collection and Analysis of Evidence

Introduction

The collection and analysis of evidence are critical in providing new knowledge to effect change. In this project, a descriptive design was used to assess safety attitudes. The data were collected from a sample of registered nurses by using an approved instrument the SAQ. The results obtained were analyzed and synthesized to answer the questions relating to safety attitudes of registered nurses on the medical-surgical unit. Ethical guidelines were followed in compliance with the university's research review and the organizations' requirement.

Source of Evidence: Study Design

This project followed a descriptive design. Safety attitudes among registered nurses on the medical-surgical unit were assessed using the SAQ. All registered nurses on the medical–surgical unit were invited to participate in the project. Inclusion criteria to participate required participants to be a registered nurse and currently employed in the medical-surgical site under study. Participation was voluntary, and all invitees were informed of the voluntary nature of the study and that the decision to participate had no impact on the individual's employment, salary, or benefits to which they were entitled. The survey was available to complete in paper format and was estimated to take 20 minutes to complete.

Procedure

The unit director and other leadership personnel related to the unit were contacted and presented with written information about the project, including the purpose of the

project, its importance in strategies to decrease CLABSI rates, and its benefits in helping to ensure patient safety on the nursing unit and in the organization. Participants were provided with instructions about the study as well as the location and availability of the questionnaire. The questionnaires were placed at designated locations (break room and meeting room) of the selected medical-surgical unit. Reminders were strategically located on the unit about participating in the survey to encourage maximum participation from the registered nurses.

The participants placed the completed survey in a locked box. The box was emptied daily and stored in a secure and nondisclosed location. A contact number and email address were provided in the event participants had questions or concerns about the questionnaire or the project. Registered nurses provided signed consent to take part in the survey.

Population and Sample

The target population consisted of registered nurses who worked on the medical-surgical unit of an acute-care, 550-bed hospital in a major southeastern city. Nurses working on the unit, regardless of shift, were invited to participate in the project. Participants received verbal and written instructions about the study by the facilitator. Participation was voluntary, responses were both confidential and anonymous, no identifying questions were asked, and all data were reported only in aggregate form.

The Instrument

Permission was obtained from the University of Texas to use the SAQ and modify the questions to meet the project focus (See Appendix A). The SAQ (Appendix B) was

used to collect data on attitudes and perceptions. The SAQ was modified to meet the need of the project. Five additional questions were added to address CLABSI. (see Appendix C). The SAQ is a single-page questionnaire with 36 items that measures perceptions and attitudes in six domains inclusive of teamwork climate, safety climate, job satisfaction, perception of management, stress situations, and work conditions. Each item was answered using a 5-point Likert scale ranging from *strongly disagree* to *strongly agree*. The SAQ instrument can be used to assess safety attitudes in specific areas, across specialties and in hospitals (Kristensen et al., 2015).

Sexton, Thomas, and Helmreich developed the SAQ with funding from the Robert Wood Johnson Foundation and the AHRQ (Sexton et al., 2015). The SAQ has been used to measure safety attitudes in the United States and several other countries, including France, Sweden, and Saudi Arabia (Alayed et al., 2014). The SAQ instrument has been validated for use in more than 1,300 hospitals worldwide in 10 different languages worldwide. It has been found to have excellent psychometric properties across cultures and languages and has been estimated to have an estimated reliability ($\alpha = .90$) and reliability ($\alpha = 0.89$) in English speaking nations such as the United States, United Kingdom, and New Zealand (Saraiva & Antunes de Almeida, 2015).

Je et al. (2014) documented the reliability and validity of the SAQ. Other researchers such as Gabrani et al. (2015) used the SAQ in a study at an Albanian hospital as an evaluation tool because of the strong correlation shown between favorable SAQ scores and positive patient outcomes. The correlation that were obtained clearly confirm

that this scale is suitable for research use. Permission to use the SAQ short form was requested and granted by the authors on October 12, 2015 (See Appendix A).

Ethical Consideration

The project was conducted in compliance with Walden University's ethical guidelines and project site requirements. Approval was obtained from the Walden University Institutional Review Board (IRB number: 09-20-17-0507197) to ensure that the project complied with the university's ethical standards and federal regulations of the United States. The Institutional Review Board of the site also reviewed the proposal for approval to ensure protection of participants. Participation in this project was voluntary and without coercion and did not pose any physical, emotional, or occupational risk or harm to participants. Participants were assured of complete anonymity. Once the study was completed, questionnaires were secured in a designated locked box placed in a cabinet. Telephone contact information and an email address along with instructions were provided in the event participants had questions or concerns about the project. The unit manager and coordinator had access to the telephone number and email address for easy access and for questions or concerns.

Data Analysis and Synthesis

Data were collected, scored, and organized to facilitate the data analysis. Participants responded to the questionnaire using a 5-point Likert scale where A = *strongly disagree*, B = *slightly disagree*, C = *neutral*, D = *slightly agree*, and E = s*trongly agree*. The letters coordinated with numerical values of 1 to 5, where A = 1, B = 2, C = 3, D = 4, and E = 5 points. The higher the mean score, the stronger the agreement is

assumed. The mean scores and standard deviation were achieved on each domain, and the entire sample were reported. Descriptive statistics were used to report mean values achieved for each domain and the total scale. All data were input from the paper surveys into Excel format, then transferred and analyzed using the SPSS version 21. Data tables and graphs were produced to report values and visually demonstrate the results. Demographic data including sex, years of nursing experience, and position were reported as frequencies and percentages. Mean values and standard deviations were estimated and reported for subscale (domain) questions, SAQ domains, and CLABSI prevention.

Project-Evaluation Plan

White and Dudley-Brown (2012) emphasized that project planning and implementation typically ends with an evaluation. An evaluation gives feedback on whether the project achieved what it set out to do. Assessing the overall project goals and the reasons goals failed to be met is part of an ongoing evaluation. The focus of this evaluation is to measure the process in organizing and implementing the project. Steps of the evaluation include understanding what the project is trying to achieve, developing an evaluation plan, selecting potential participants, collecting the data, interpreting the data, and reporting on the findings.

Once the project is approved by Walden University, findings will be presented to stakeholders, nursing staff, and organization leaders. Feedback reports are critical to inform leadership and staff of findings from the survey. An executive summary detailing the findings to those within the organization who will be able to use the results to improve patient care will be provided as well. Findings from the study also will be

presented in the organization's newsletter, at poster presentations at local and national conferences, and in journals and other quality health care publications.

Summary

The safety attitude that exists in an organization is increasingly identified as a requirement for patient safety and can significantly influence patient outcomes. Assessing safety attitudes of registered nurses on the medical-surgical unit is a critical first step in addressing patient-safety issues. Health care professionals and health care organizations continue to work toward the prevention of CLABSIs that compromise patient safety and significantly increase hospital morbidity and mortality risks. This concern has placed patient safety at the forefront of the health care agenda. Nursing staff has a pivotal role in leading the change toward effective, evidence-based practice that ensures patient safety and minimizes safety risks.

Understanding the safety attitudes among registered nurses on the unit is the first step in efforts to prevent complications. The SAQ has been instrumental in assisting health care providers and health care organizations to survey safety attitudes of staff, results of which can be used to improve outcomes related to patient safety. In this project, level of agreement with teamwork climate, safety climate, job satisfaction, working conditions, stress recognition, perceptions of management and knowledge of CLABSI prevention among registered nurses was measured. Results obtained from the study will be disseminated to leadership and staff. Findings from the study can provide vital data about safety attitudes on the unit. Results serve as a benchmark to help identify

deficiencies; raise awareness concerning patient-safety and guide new intervention programming that support health care delivery improvements.

Section 4: Findings and Recommendations

Introduction

The attitude of health professionals can influence the daily functions and outcomes of patient care. Safety should be every nursing professional's goal. A concern for safety is the first step that can impact the work environment positively or negatively. Given that safety attitude reflects an organization's operation, it is imperative that leadership understand the attitude that exists among professional registered nurses who are considered the initial caregivers and the principal element in the prevention of infections such as CLABSI.

CLABSI is considered a major health care problem, but it is preventable. Studies conducted by various researchers concluded that CLABSI is costly, accounts for morbidity and mortality, and causes great harm to patients and families. (Tedja, et al., 2014). Registered nurses play a major role in prevention of complications. Understanding perceptions of the teamwork climate and safety, job satisfaction, management, working conditions, and stress recognition among nurses will help managers and leadership plan more effectively toward achieving better results specifically as it relates to CLABSI prevention.

The main purpose of this project was to examine whether registered nurses on the medical-surgical unit exhibit an approach that effectively will help reduce the incidents of CLABSI, prevent complications, and help patients, families, and the community gain the benefits from care provided while hospitalized. Such a project will help contribute to existing knowledge and social change. Studies across the globe support the need for more

in-depth investigations to understand safety attitudes among registered nurses. (Gabrani, et al., 2015; Sammer & James, 2011; Ulrich & Kear, 2014).

Attitudes and perceptions of registered nurses play a major role in the prevention of CLABSI infection in the clinical environment. The SAQ brings out nurses' attitudes through the six domains. The respondents consisted of registered nurses working on a single unit and were present during the 2-week period designated for data collection. Surveys were completed in a paper format, and data were input and managed in an Excel database and then transferred into SPSS (version 21) for analysis.

Findings and Implications

All 61 RNs (bedside and charge nurses) on the medical-surgical unit were invited to participate in the study. A total of 22 RNs completed the survey, resulting in a 36% response rate. Of the 22 respondents, 68% were female, 18.2% were male, and 13.6% did not report their sex. The range in number of years nursing experience was wide and well distributed. Approximately 1 in 4 reported practicing for less than 5 years (22.7%), between 5 and 10 years (22.7%), and over 20 years (22.7%). About 1 in 5 (18.2%) were in nursing between 11 and 20 years. A small percentage (13.6%) did not report the number of years in nursing. The majority of respondents were employed as bedside nurses (77.3%), while the balance (22.7%) identified as charge nurses (See Table 1for details).

Table 1.
Description of Respondents (N=22)

Characteristic	N	Percent
Gender		
Female	15	68.2
Male	4	18.2
Not Reported	3	13.6
Years in Nursing		
Less Than 5	5	22.7
5-10	5	22.7
11-20	4	18.2
Over 20	5	22.7
Not Reported	3	13.6
Clinical Position		
Bedside Nurse	17	77.3
Charge Nurse	5	22.7

A mean value was measured for level of agreement with each of the SAQ subscales and the CLABSI Prevention scale. Respondents reported moderate levels of agreement with most components of the SAQ. Job satisfaction ($M = 3.95$, $SD = 1.04$) and work conditions ($M = 3.95$, $SD = .752$) received the highest levels of agreement and closely followed by stress recognition ($M = 3.86$, $SD = 1.19$). Agreement with the employer's culture of management ($M = 3.54$, $SD = .970$), teamwork ($M = 3.47$, $SD = .84$), and safety ($M = 3.34$, $SD = .563$) were notably lower. While the respondent agreement with the culture of safety was relative low, a strong level of agreement with the efforts to prevent CLABSI was comparitvly high ($M = 4.26$, $SD = .847$; See Table 2).

Table 2.
Agreement levels reported for SAQ sub-scales and CLABSI Prevention (N=22)

Domain	Min	Max	Mean	SD
Teamwork	1.0	4.3	3.47	.840
Safety	1.9	4.1	3.34	.563
Job Satisfaction	1.4	5.0	3.95	1.04
Stress Recognition	1.0	5.0	3.86	1.19
Management	1.0	4.8	3.54	.970
Working Conditions	2.1	5.0	3.95	.752
CLABSI Prevention	2.2	5.0	4.26	.847

Upon review of agreement estimates for all questions, it was noted that two questions received a notably lower level of agreement than the others. They include Q9: "I know the proper channels to direct questions regarding patient safety in this clinical area" ($M = 2.52$, $SD = 1.29$) and Q29, "The levels of staffing in this clinical area are sufficient to handle the number of patients" ($M = 2.68$, $SD = 1.58$). These findings suggest that two critical issues may affect the delivery of safe and effective health care in this work environment. Levels of agreement with SAQ subscales and CLABSI are presented in Figure 2.

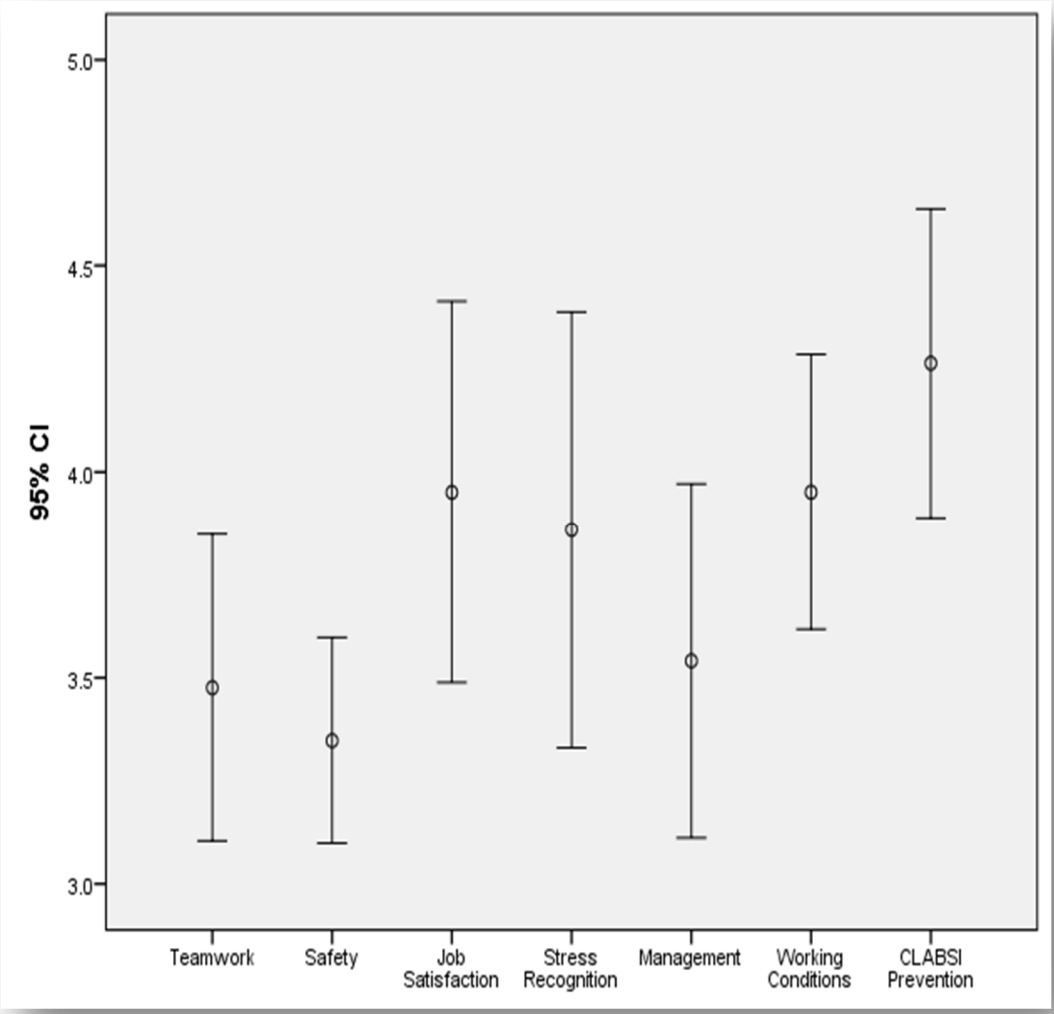

Figure 2. Mean levels 95% range of agreement with (SAQ) subscales and CLASBI prevention ($N = 22$).

Differences in SAQ scores were negligible between sexes and professional groups. The overall SAQ score for women was $M = 3.79$, $SD = .571$ compared to $M = 3.87$, $SD = .11$ for men. The total average SAQ score was lowest ($M = 3.37$; $SD = 1.62$) for the group who did not report their gender. The overall SAQ score was $M = 3.68$, $SD = .758$ for bedside nurses and $M = 3.88$, $SD = .51$ for charge nurses. It should be noted

that there were very few men and charge nurses in the sample; therefore, comparisons risked bias. Clear patterns were noted by number of years of experience in nursing produced a great deal of variation for agreement with SAQ domains and CLASBI prevention. Graphs illustrating differences for each SAQ domain and CLASBI prevention according to years of nursing experience agreement are illustrated as mean plots in Figures 3 to 8.

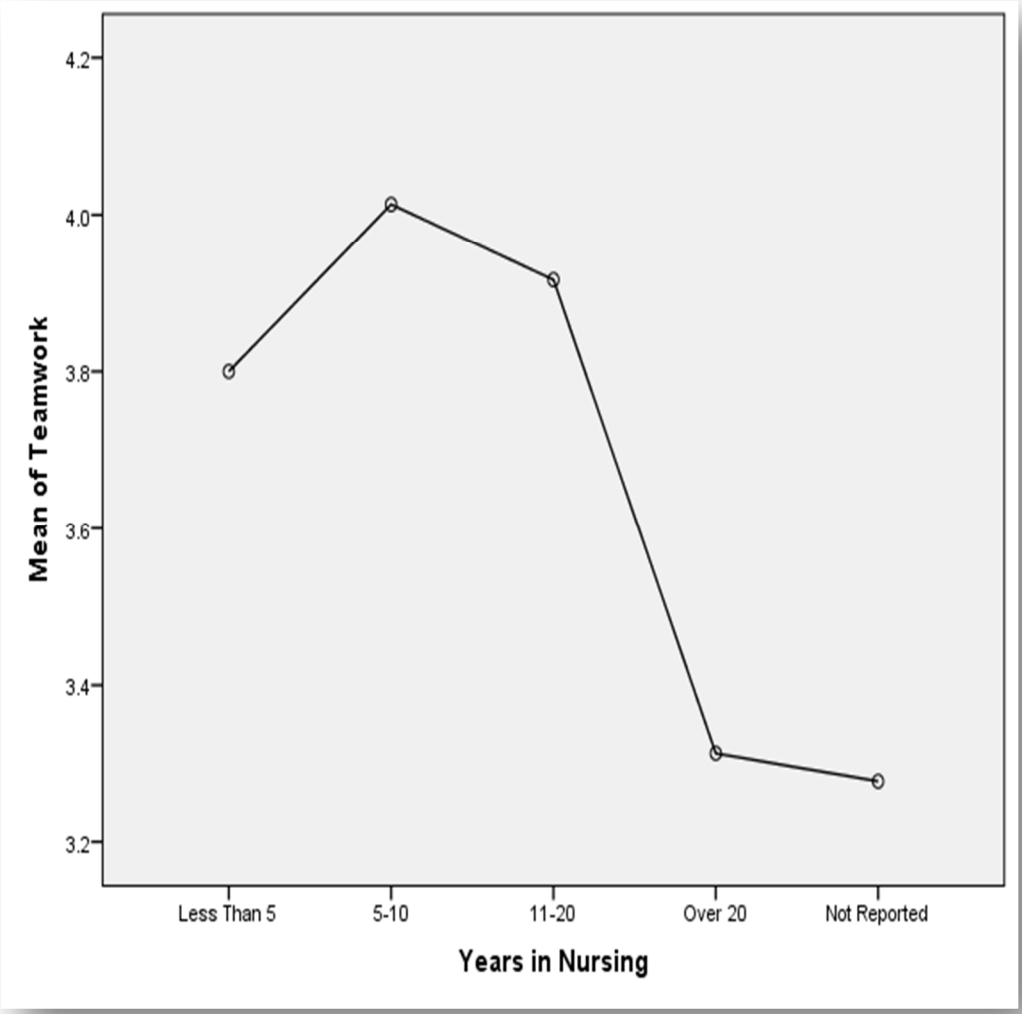

Figure 3. Level of teamwork agreement by years in nursing ($N = 22$).

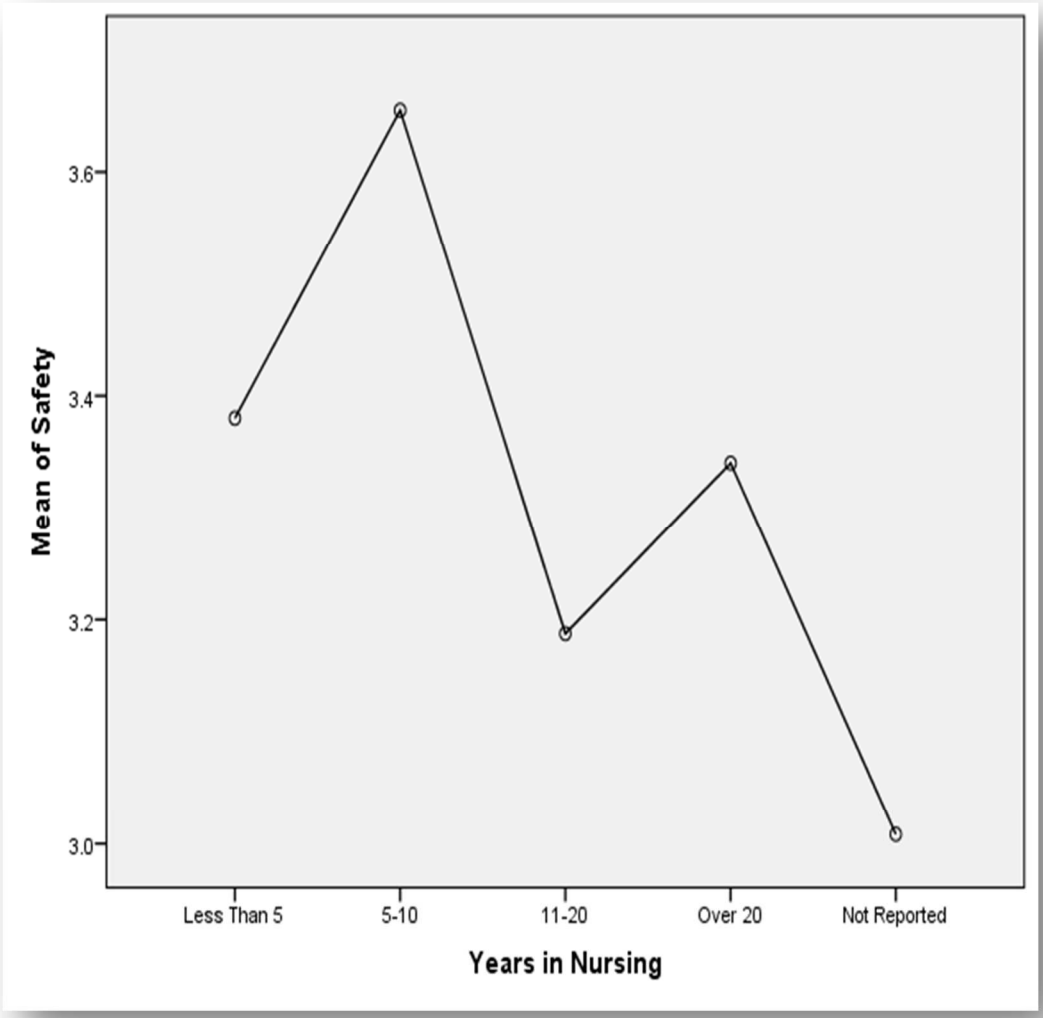

Figure 4. Level of safety by years in nursing ($N = 22$).

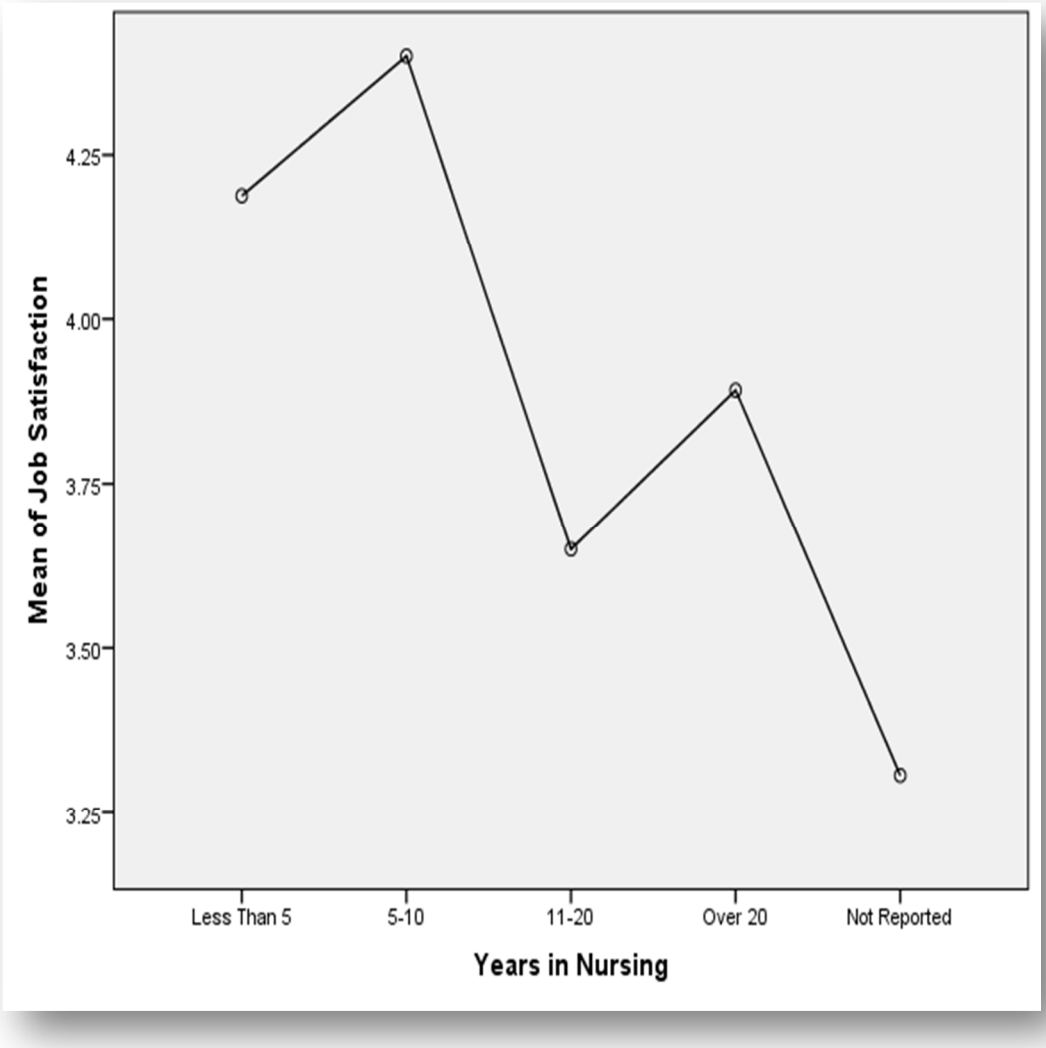

Figure 5. Level of job satisfaction by years in nursing ($N = 22$).

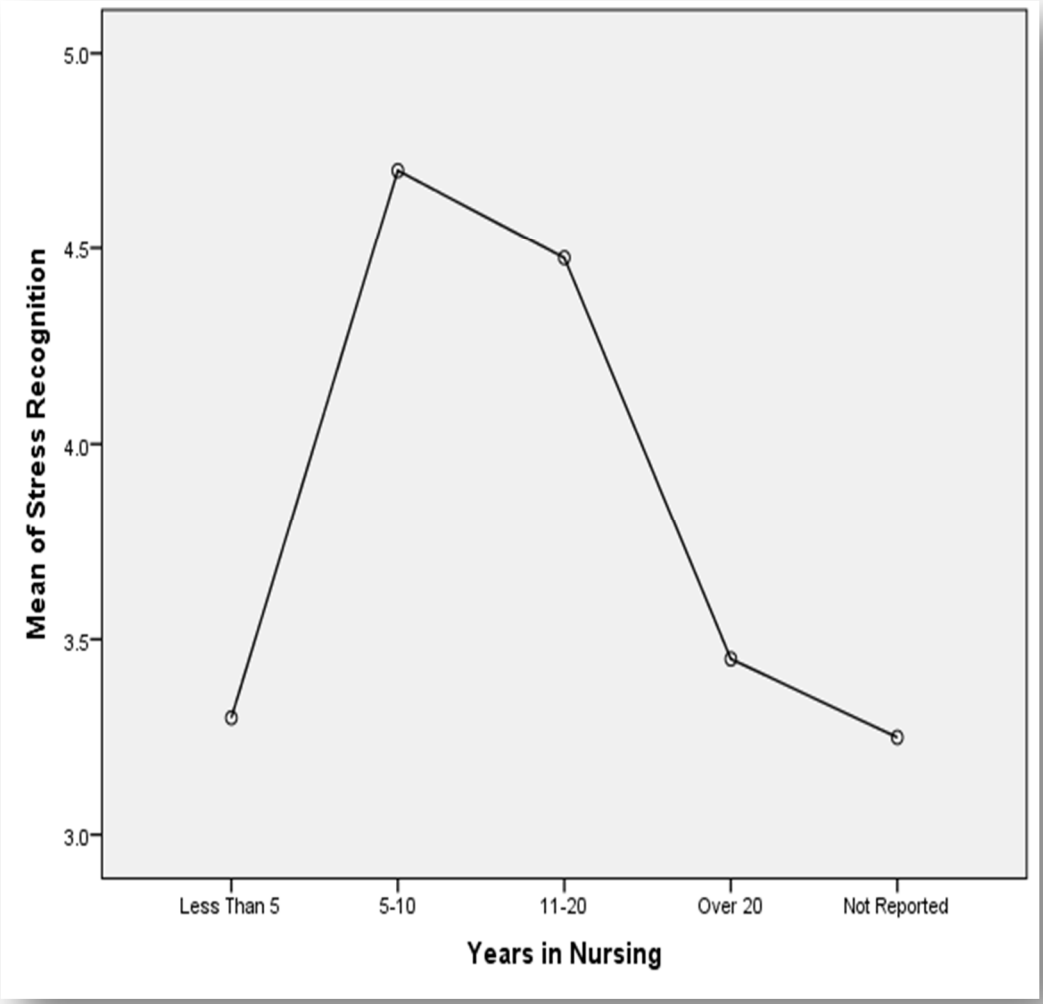

Figure 6. Level of agreement with stress recognition by years in nursing ($N = 22$).

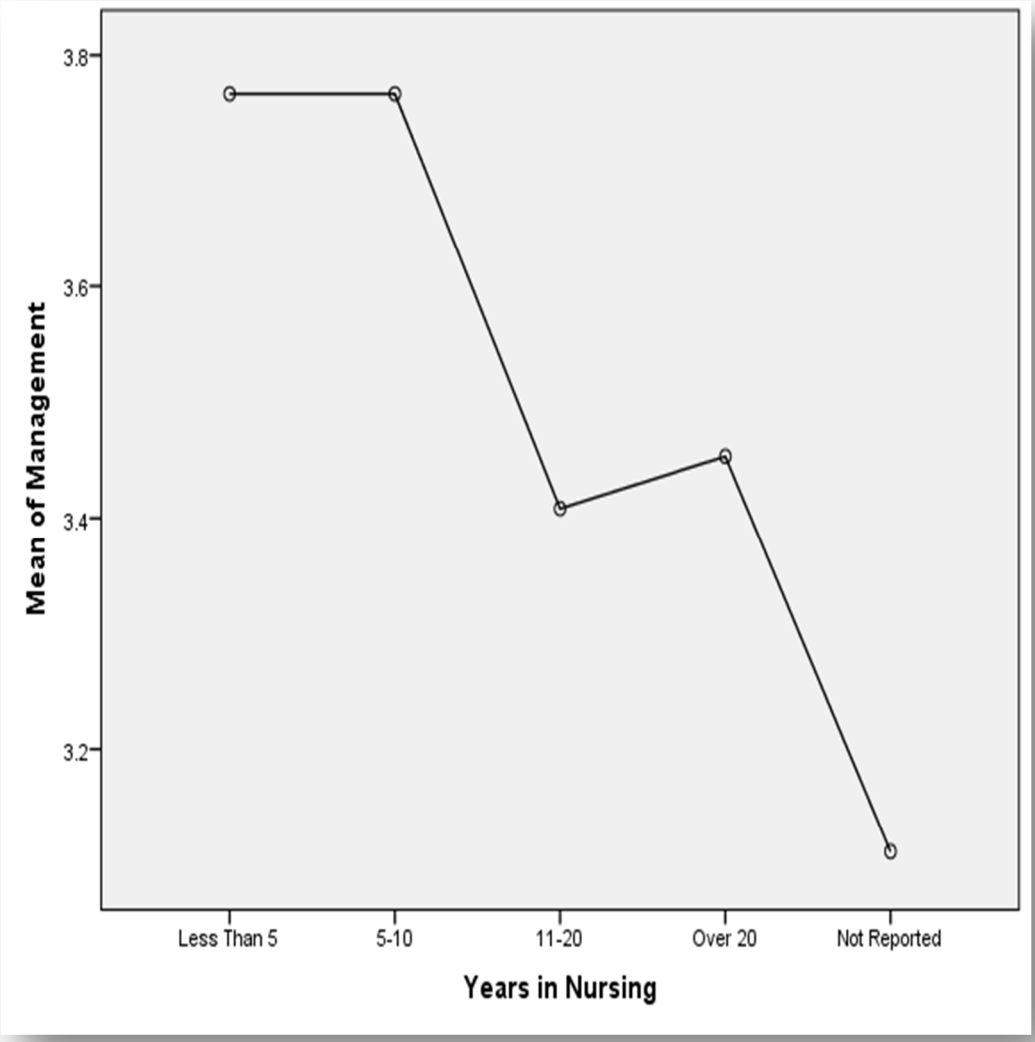

Figure 7. Level of agreement with management by years in nursing ($N = 22$).

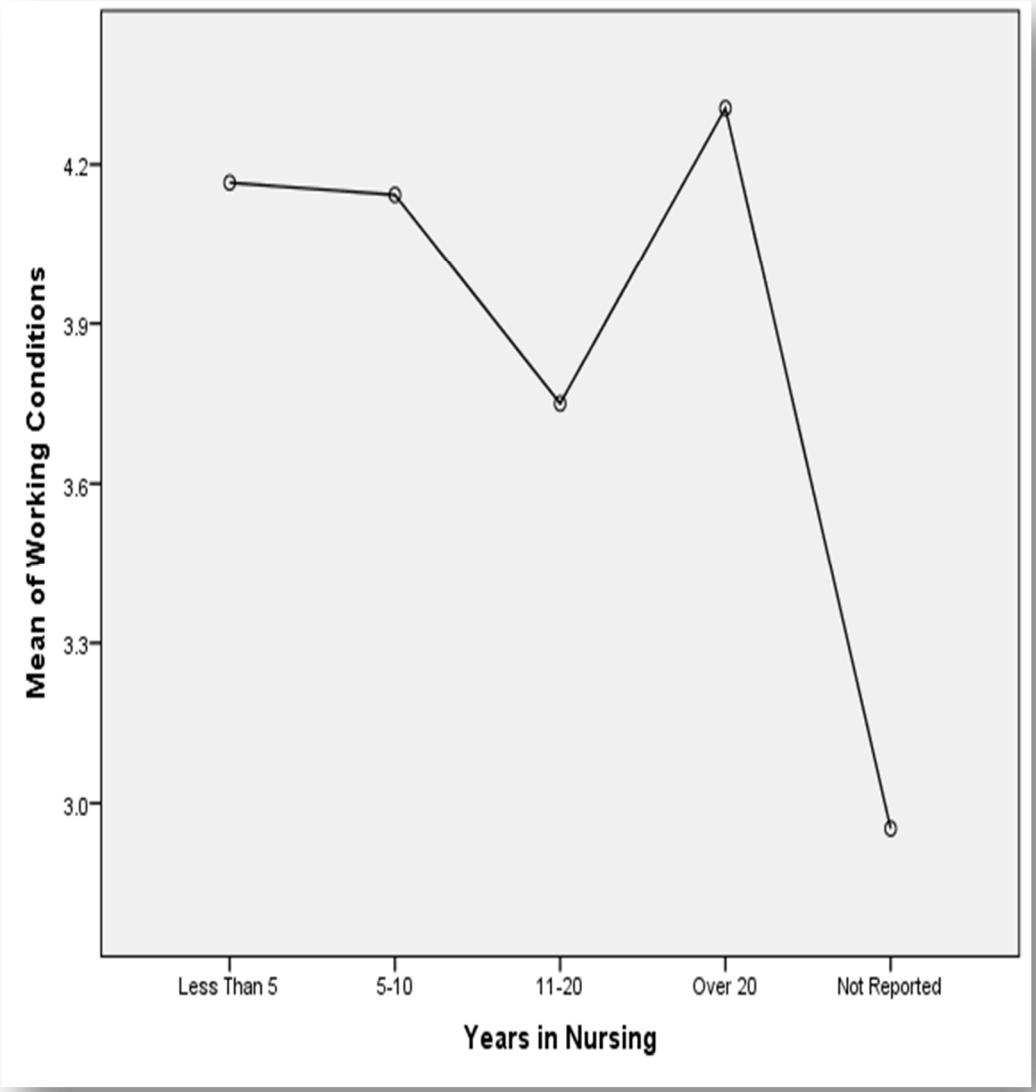

Figure 8. Level of agreement with working conditions by years in nursing ($N = 22$).

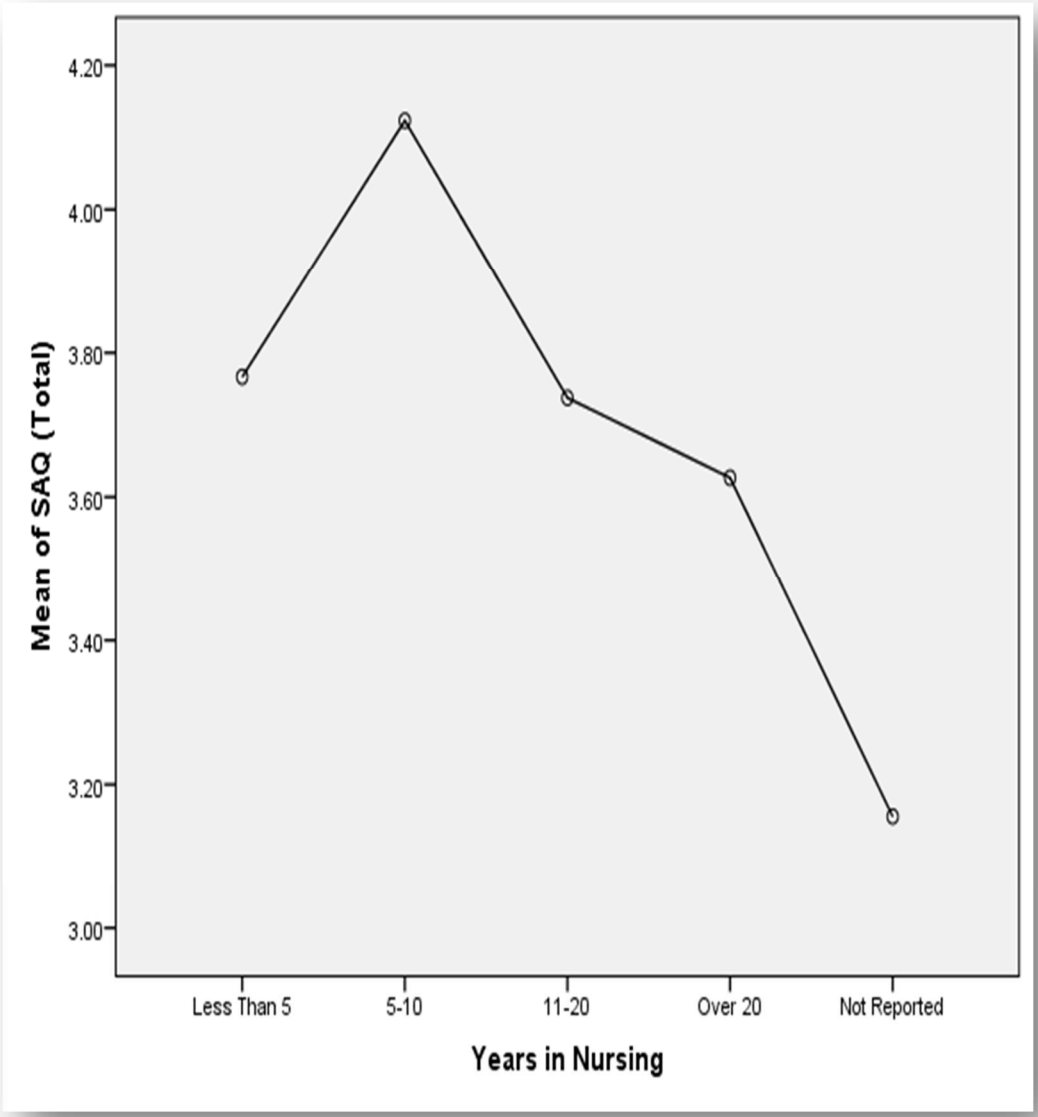

Figure 9. Total SAQ score by years in nursing ($N = 22$).

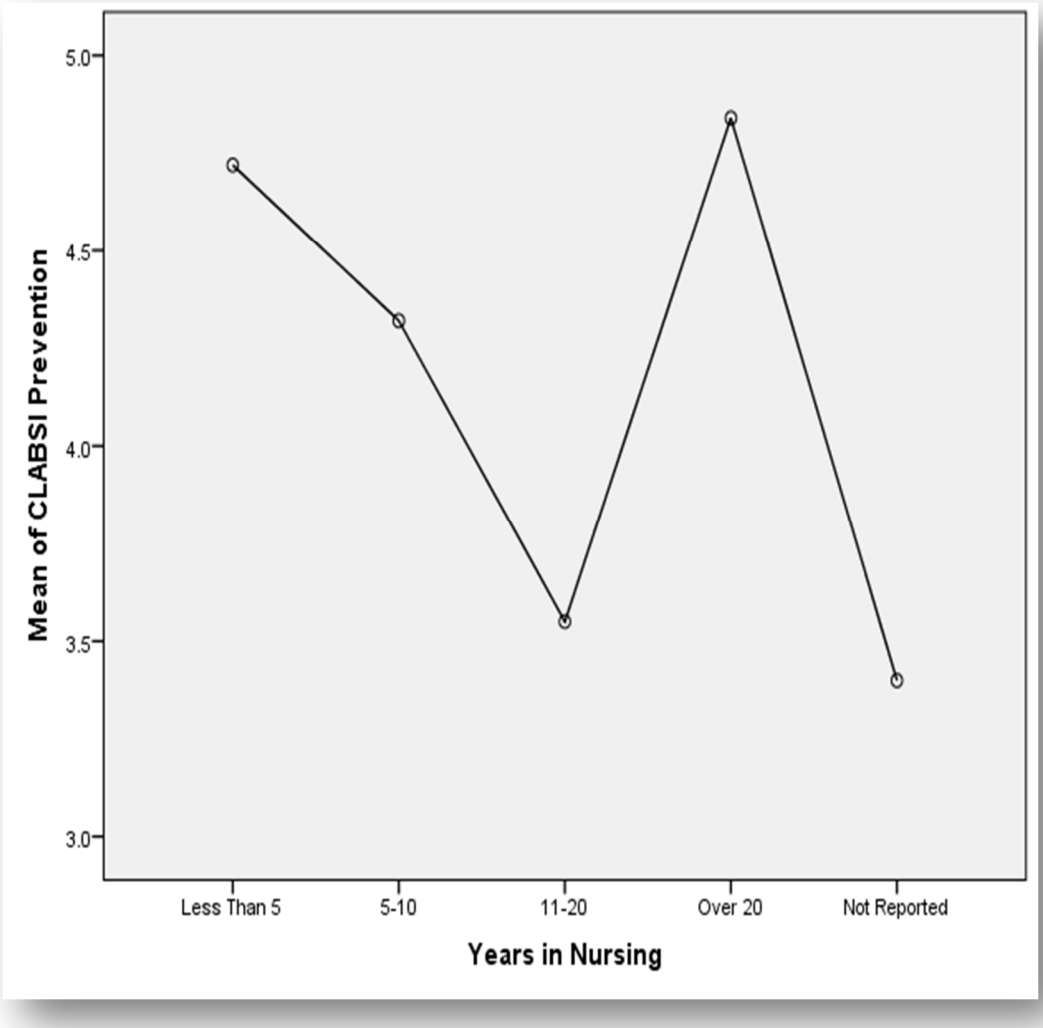

Figure 10. CLASBI prevention by years in nursing *(N* = 22).

Analysis of the data suggests that the nurses practicing at this particular med-surgical unit share a moderate level of agreement with most aspects of the department's safety culture. It was noted that in general, levels of agreement with SAQ subscales were moderate (3.35-3.95) while agreement with the unit's approaches to prevent CLASBI was relatively strong at 4.26. Agreement appeared to decrease as the number of years in practice increased. Attitudes regarding SAQ subscales and CLASBI prevention were

comparable between genders and staff position but were quite variable by years in practice. Here it was noted that most levels of agreement peaked for those nursing between 5 and 10 years and declining steadily thereafter. By comparison, agreement with CLABSI Prevention peaked for those who were in nursing for 20 or more years. As a group, those who did not report the number of years in nursing scored the lowest level of agreement on both the SAQ and CLASBI Prevention scales. This suggests that those who were in least agreement with the current practices in the facility were most concerned with maintaining anonymity.

When responses to specific questions were examined, mean scores as low as 2.45 were noted. Responses to two particular questions cause for alarm. They include

1. Q9. In which the current culture made it difficult to understand who to direct questions regarding patient safety and
2. Q29. In which the current culture does not promote levels of staffing to adequately care for the number of patients served.

The meaningful measure of the various dimensions of safety attitudes among frontline workers will allow for opportunities to raise awareness of safety concerns, foster open communication, enhance collaborative efforts, and involve management in planning and implementing evidence-based interventions. The levels of agreement with the clinical facility's SAQ sub-domain and CLASBI prevention cultures are illustrated in Figure 11 below and are placed in cyclical formation with the highest score (CLASBI) placed on the top (M=4.26) and decreases clockwise with the lowest score for agreement

with safety culture at (M=3.35) (See Figure 11). These findings help to identify ways in which safety culture improvements can be approached.

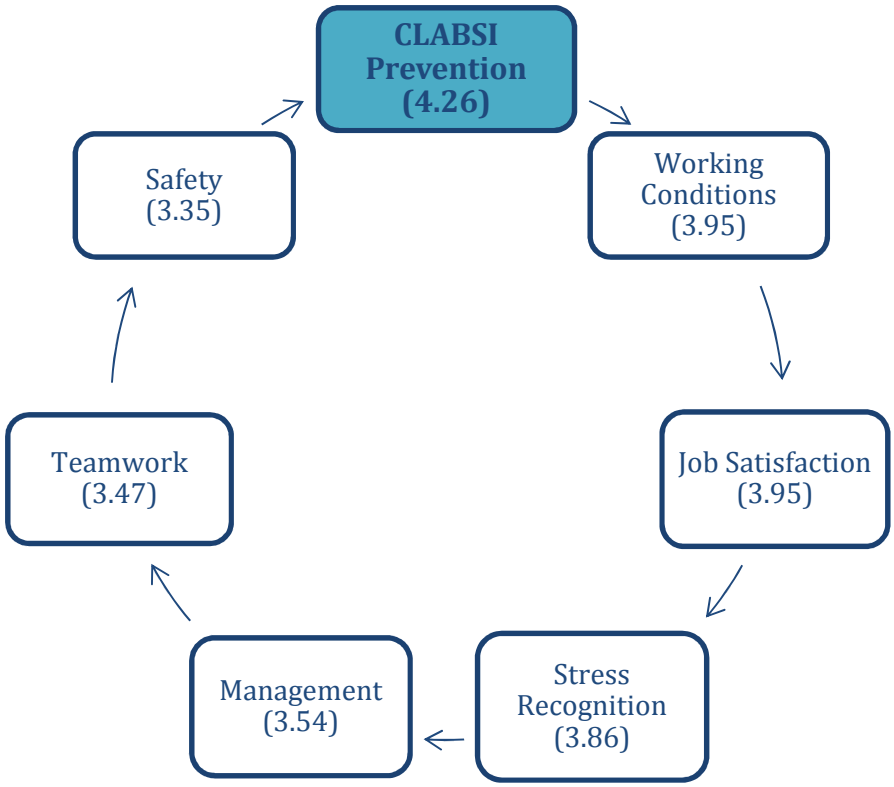

Figure 11. Level of Agreement with SAQ Sub-Scales and CLABSI Prevention (N=22)

Recommendations

Based on the findings obtained, registered nurses in this response group, share a moderate level of agreement with most aspects of work culture in the med-surgical unit. Although outcomes on the SAQ subscales proved to reflect moderate levels of agreement, respondents appeared to be in stronger agreement with the facility's practices towards CLABSI prevention efforts. When levels of agreement for each question are examined separately, it is noted that the lowest agreements are found for understanding the proper channels to direct safety concerns and having adequate staff to handle patient care and work load. These comparatively low scores suggest that these may point to two major deficiencies that demand attention for creating a safer work environment.

It is recommended that management look closer at these deficiencies, with emphasis on providing staff with resources to deal with safety concerns, and address staffing issues. These findings can be used for unit planning, and to foster dialogue among staff. A multidisciplinary approach is required for successful unit function, to maintain positive attitudes, increase staff confidence and prevent CLABSI. Direct care staff must approach leadership with their concerns and challenges in the delivery of care. Those who exhibit positive attitudes should be supported and encouraged to maintain favorable standards. Other staff members that are deemed with poor attributes need to be empowered and equipped to take ownership to improve performance.

This quality-improvement project was meant to shed light on safety attitudes of registered nurses on the medical-surgical unit. Other workers such as physicians, managers, and ancillary staff, may affect the overall attitude and performance of the unit.

It is recommended that other staff members be evaluated to find out how they may influence safety on the unit.

Limitations of the Project

A significant limitation of this project was the low response rate from the registered nurses. A low response rate may not reflect a true picture of the unit status on attitude. Another limitation was the time allocated for the survey. There were only two weeks assigned to collect data from the staff. A longer time would likely generate more participation and a greater response rate. Respondents could answer the questionnaire only during their free time. Nurses are frequently engaged in their professional duty and had a short time to participate in the survey. Owing to the limited time frame, nurses who were not on the unit during that period were unable to participate. The project was confined to one unit, and nurses on the unit may not be exposed to central lines as often as other units such as the ICU or nephrology department, where central lines are more common in that patient population. The inclusion of other units could have resulted in different outcomes. A limited time frame and a low response rate may have contributed to the overall findings.

Implications for Social Change

The SAQ looks at various dimensions, including job satisfaction, teamwork, safety climate, perception of management, and communication. Results can be used to assess issues in the workplace, benchmark against individual units at the organizational levels, and compare with other national and international findings. Management can utilize findings to raise awareness of safety concerns among front-line staff. Findings

from the study also can be used to inform stakeholders to influence change in areas that should change. This, in turn, could enhance collaborative efforts for implementing change and introducing evidence-based interventions to improve patient outcomes.

Nurses play an important role in maintaining and promoting patient safety owing to the nature of their work. They foster open communication about safety issues such as stress, fatigue, and other work-related problems. Nurses also ensure the delivery of quality health care to patients, families, and society. In addition, the public recognizes nurses for upholding high ethical standards. They have a critical responsibility to uphold the highest level of quality and standards in their practice, including fostering a safe work environment. Nursing leaders ensure resources are available to achieve safety results, providing resources for adequate staffing, equipment, and education. Therefore, it is important that nurses' attitudes toward safety are understood to have a positive effect on their work and maintain or improve quality.

Summary

Results from the project were analyzed and presented to reflect each domain of the SAQ. Gender and years of work experience were also presented. Recommendations were provided for future interventions. There were limitations encountered with and during the project. There is a great potential for the project to influence and impact quality, knowledge and practice.

The attitude of registered nurses who are considered front-line workers can determine the outcomes of their performance and how their unit operates. It is imperative that front-line workers are committed in ensuring accountability for the function of their

unit, which in turn will influence prevention of CLABSI. Management and others in leadership can use input from staff in planning and implementing programs to equip staff to achieve good outcomes. This quality- improvement project is a step to heighten awareness and can be used in future efforts to make changes. More effort should be made to understand safety attitude and the relationship between safety attitude measures to prevent CLABSI and outcomes.

Section 5: Dissemination Plan

Assessing safety attitudes domains such as teamwork, safety climate, and job satisfaction can help understand the underlying influences of outcomes. Findings from this project provide insight into registered nurses' agreement on issues such as management support, job satisfaction, and work-related stress. The project revealed significant information that can serve as a starting point to address areas needing improvement such as those staffing issues and communication concerns.

Registered nurses on the unit, nurse managers, and those who will influence policies inclusive of the Nursing Director and Research Council will be invited to a PowerPoint presentation and roundtable discussion. All presentation participants will also be presented with a summary of the project with highlights of the results and be provided with a hard copy of the study. This presentation session will take place during a regularly scheduled unit staff meeting. Project results obtained will be shared with nurse managers on the unit. This information will be used to guide a discussion on staffing issues and concerns that may ultimately affect working conditions. Presenting the findings regarding nurses' attitudes in preventing CLABSI to those who need to be informed is vital to foster dialogue and educate staff and other stakeholders about issues that are crucial to health care and health-related matters.

Analysis of Self

The purpose of earning the Doctor of Nursing Practice degree is to acquire the skills and obtain the credentials needed rise to new levels of leadership, develop specialized expertise, and become an agent for change in the evolving health care

environment. Finally, I hope that I can serve as an example to others in the nursing profession. The process of completing this project has made me reflect deeply on what it means to be a scholar, a project manager, and a professional. Although ultimately rewarding, the process presented many challenges. I met with other doctorate level clinicians who had similar experiences and shared their own challenges and successes. Discussions with fellow DNP candidates and doctorate level clinicians provided me with greater insight into what it meant to be patient, maintain focus, and stay disciplined and committed while attempting to accomplish my goals.

As project manager, it meant taking charge to meet deadlines and to engage leadership, supporters, and participants to ensure that the project met its required objectives. Time constraints were a big factor that added to the stress of working on a project like this. Exhaustion often made it difficult to meet deadlines as I worked on project. This journey has had both a positive and negative impact. I had a greater momentum at the beginning of the project. However, my enthusiasm and pace slowed down considerably, and it became more difficult to stay on task. In retrospect, I am grateful to have had the opportunity to reach a higher level in my educational experience. I have gained a wealth of knowledge and feel more confident in my ability to impact my profession, organization, community, and become an agent of social change. Finally, the experience has reminded me of what is involved to achieve one's goals despite the many challenges and potential obstacles. In summary, the process served as both a personal exercise in resilience and an opportunity to create positive change in one clinical environment.

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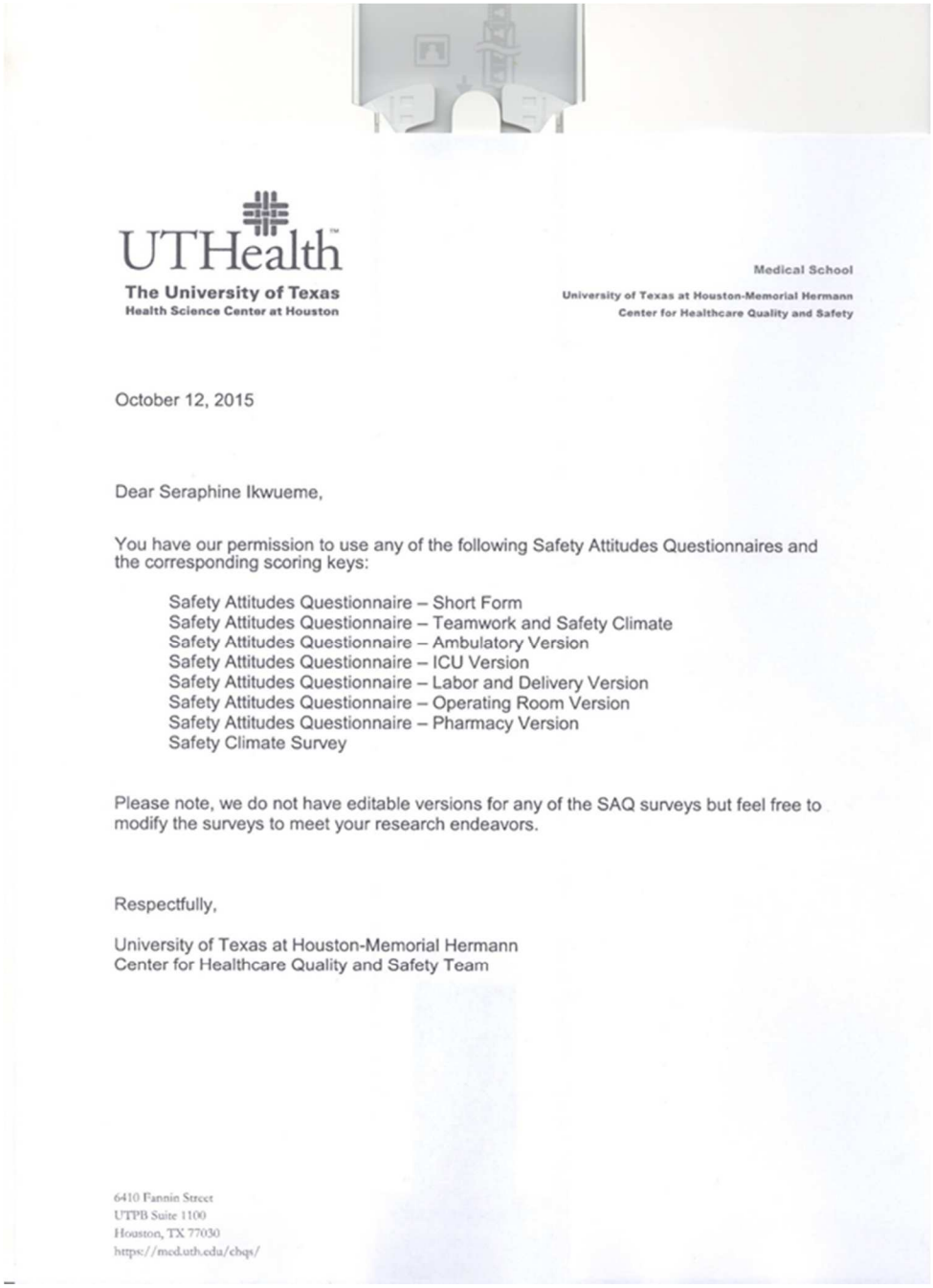
Appendix A: SAQ Use Permission Letter From University of Texas



UTHealth
The University of Texas
Health Science Center at Houston

Medical School
University of Texas at Houston-Memorial Hermann
Center for Healthcare Quality and Safety

October 12, 2015

Dear Seraphine Ikwueme,

You have our permission to use any of the following Safety Attitudes Questionnaires and the corresponding scoring keys:

- Safety Attitudes Questionnaire – Short Form
- Safety Attitudes Questionnaire – Teamwork and Safety Climate
- Safety Attitudes Questionnaire – Ambulatory Version
- Safety Attitudes Questionnaire – ICU Version
- Safety Attitudes Questionnaire – Labor and Delivery Version
- Safety Attitudes Questionnaire – Operating Room Version
- Safety Attitudes Questionnaire – Pharmacy Version
- Safety Climate Survey

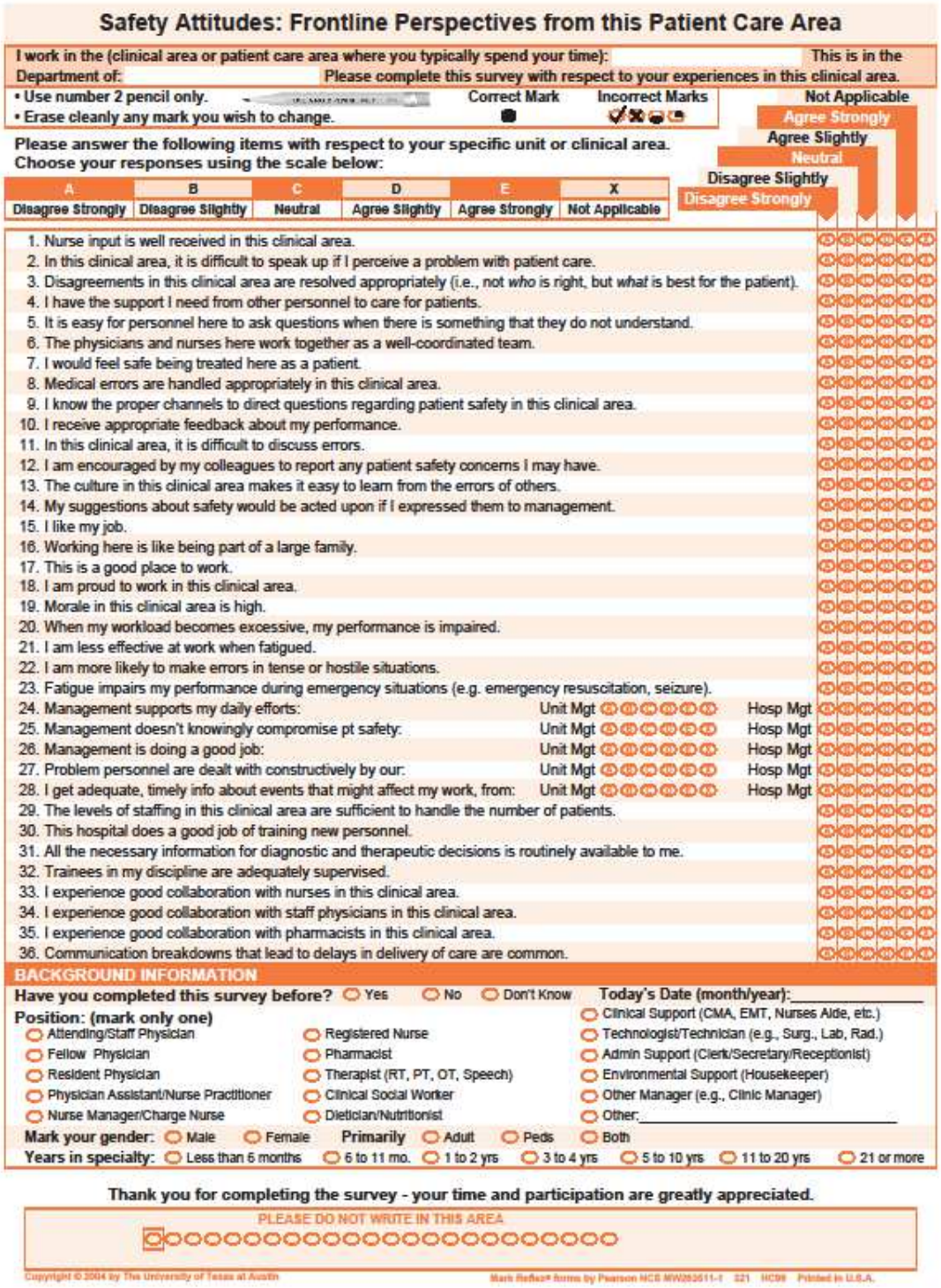
Please note, we do not have editable versions for any of the SAQ surveys but feel free to modify the surveys to meet your research endeavors.

Respectfully,

University of Texas at Houston-Memorial Hermann
Center for Healthcare Quality and Safety Team

6410 Fannin Street
UTPB Suite 1100
Houston, TX 77030
https://med.uth.edu/chqs/

Appendix B: Safety Attitude Questionnaire (SAQ)



Safety Attitudes: Frontline Perspectives from this Patient Care Area

I work in the (clinical area or patient care area where you typically spend your time): This is in the Department of: Please complete this survey with respect to your experiences in this clinical area.

- Use number 2 pencil only.
- Erase cleanly any mark you wish to change.

Correct Mark ● Incorrect Marks ✓ ✗

Not Applicable
Agree Strongly
Agree Slightly
Neutral
Disagree Slightly
Disagree Strongly

Please answer the following items with respect to your specific unit or clinical area.
Choose your responses using the scale below:

A	B	C	D	E	X
Disagree Strongly	Disagree Slightly	Neutral	Agree Slightly	Agree Strongly	Not Applicable

1. Nurse input is well received in this clinical area.
2. In this clinical area, it is difficult to speak up if I perceive a problem with patient care.
3. Disagreements in this clinical area are resolved appropriately (i.e., not *who* is right, but *what* is best for the patient).
4. I have the support I need from other personnel to care for patients.
5. It is easy for personnel here to ask questions when there is something that they do not understand.
6. The physicians and nurses here work together as a well-coordinated team.
7. I would feel safe being treated here as a patient.
8. Medical errors are handled appropriately in this clinical area.
9. I know the proper channels to direct questions regarding patient safety in this clinical area.
10. I receive appropriate feedback about my performance.
11. In this clinical area, it is difficult to discuss errors.
12. I am encouraged by my colleagues to report any patient safety concerns I may have.
13. The culture in this clinical area makes it easy to learn from the errors of others.
14. My suggestions about safety would be acted upon if I expressed them to management.
15. I like my job.
16. Working here is like being part of a large family.
17. This is a good place to work.
18. I am proud to work in this clinical area.
19. Morale in this clinical area is high.
20. When my workload becomes excessive, my performance is impaired.
21. I am less effective at work when fatigued.
22. I am more likely to make errors in tense or hostile situations.
23. Fatigue impairs my performance during emergency situations (e.g. emergency resuscitation, seizure).
24. Management supports my daily efforts: Unit Mgt Hosp Mgt
25. Management doesn't knowingly compromise pt safety: Unit Mgt Hosp Mgt
26. Management is doing a good job: Unit Mgt Hosp Mgt
27. Problem personnel are dealt with constructively by our: Unit Mgt Hosp Mgt
28. I get adequate, timely info about events that might affect my work, from: Unit Mgt Hosp Mgt
29. The levels of staffing in this clinical area are sufficient to handle the number of patients.
30. This hospital does a good job of training new personnel.
31. All the necessary information for diagnostic and therapeutic decisions is routinely available to me.
32. Trainees in my discipline are adequately supervised.
33. I experience good collaboration with nurses in this clinical area.
34. I experience good collaboration with staff physicians in this clinical area.
35. I experience good collaboration with pharmacists in this clinical area.
36. Communication breakdowns that lead to delays in delivery of care are common.

BACKGROUND INFORMATION

Have you completed this survey before? Yes No Don't Know Today's Date (month/year):_____

Position: (mark only one)

- Attending/Staff Physician
- Fellow Physician
- Resident Physician
- Physician Assistant/Nurse Practitioner
- Nurse Manager/Charge Nurse
- Registered Nurse
- Pharmacist
- Therapist (RT, PT, OT, Speech)
- Clinical Social Worker
- Dietician/Nutritionist
- Clinical Support (CMA, EMT, Nurses Aide, etc.)
- Technologist/Technician (e.g., Surg., Lab, Rad.)
- Admin Support (Clerk/Secretary/Receptionist)
- Environmental Support (Housekeeper)
- Other Manager (e.g., Clinic Manager)
- Other:_____

Mark your gender: Male Female Primarily Adult Peds Both

Years in specialty: Less than 6 months 6 to 11 mo. 1 to 2 yrs 3 to 4 yrs 5 to 10 yrs 11 to 20 yrs 21 or more

Thank you for completing the survey - your time and participation are greatly appreciated.

PLEASE DO NOT WRITE IN THIS AREA

Mark Reflex® forms by Pearson NCS MW263511-1 321 HC99 Printed in U.S.A.

Appendix C: CLABSI Prevention Questions

Please circle one answer to the following questions with respect to your clinical area.

A = Strongly Disagree
B = Slightly Disagree
C = Neutral
D = Slightly Agree
E = Strongly Agree

1. Infection control policies and procedures are available to staff.	A B C D E
2. There are regular training programs geared toward CLABSI prevention.	A B C D E
3. Staff has a good understanding of current CLABSI protocols.	A B C D E
4. Infection prevention education is provided to staff, patients, and families.	A B C D E
5. Data obtained about CLABSI are used to direct prevention activities.	A B C D E

Appendix D: Sample Letter to Participate in Study

Dear participant,

This evidence-based practice project is being conducted in partial fulfillment of the Doctor of Nursing Practice degree. The aim of the project is to assess the safety perceptions and attitudes among registered nurses on the medical-surgical unit at this facility. Because of your position as a registered nurse, your involvement is very important. Participation is voluntary and your decision to accept or decline this invitation will in no way affect your job or benefits to which you are currently entitled. The survey takes about 20 minutes to complete. No compensation is available for participating. If you choose to participate, please do outside your work time.

The study is completely confidential and anonymous. No identifying questions will be asked. Results will be analyzed and reported only in the collective. A box will be provided in which you can leave your completed survey. All surveys will be kept in a locked cabinet.

Please feel free to direct any questions or concerns by phone or by email (seraphine.ikwueme@waldenu.edu).

Thank you for your participation.

Seraphine Ikwueme, RN
Doctor of Nursing Practice Candidate
Walden University

Appendix E: Agreement Scores SAQ Questions and CLASBI Prevention

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q1	22	1.0	5.0	3.000	1.2344
Q2	22	2.0	5.0	3.559	1.2462
Q3	22	1.0	5.0	3.518	1.3319
Q4	22	1.0	5.0	3.573	1.2178
Q5	22	1.0	5.0	4.286	.9829
Q6	22	1.0	5.0	4.191	.9571
Teamwork	22	1.7	4.3	3.688	.7150
Q7	22	1.0	5.0	3.591	1.4362
Q8	22	2.0	5.0	4.164	.9394
Q9	22	1.0	4.5	2.455	1.5268
Q10	22	1.0	5.0	4.300	1.0282
Q11	22	1.0	5.0	2.523	1.2954
Q12	22	2.0	5.0	3.855	.9400
Q13	22	1.0	5.0	3.895	1.1082
Q14	22	1.0	5.0	3.950	1.1329
Safety	22	1.9	4.1	3.348	.5631
Q15	22	2.0	5.0	4.182	1.0065
Q16	22	1.0	5.0	3.673	1.1548
Q17	22	1.0	5.0	4.095	1.1086
Q18	22	1.0	5.0	3.900	1.3767
Q19	22	1.0	5.0	3.905	1.3768
Job Satisfaction	22	1.4	5.0	3.951	1.0429
Q20	22	1.0	5.0	4.045	1.2902
Q21	22	1.0	5.0	4.000	1.2724
Q22	22	1.0	5.0	3.809	1.5312
Q23	22	1.0	5.0	3.582	1.2078
Stress Recognition	22	1.0	5.0	3.859	1.1916
Q24	22	1.0	5.0	3.573	1.2936
Q25	22	1.0	5.0	3.905	1.1086
Q26	22	1.0	5.0	3.714	1.2009
Q27	22	1.0	5.0	3.755	1.1074
Q28	22	1.0	5.0	3.618	1.2141
Q29	22	1.0	5.0	2.682	1.5852
Management	22	1.0	4.8	3.541	.9707
Q30	22	1.0	5.0	3.573	1.2936
Q31	22	1.0	5.0	3.941	1.0901
Q32	22	1.0	5.0	4.045	1.1329
Q33	22	1.0	5.0	4.391	.9827
Q34	22	1.0	5.0	4.141	1.1665
Q35	22	2.0	5.0	4.045	.9989
Q36	22	1.0	5.0	3.523	1.2581
Working Conditions	22	2.1	5.0	3.951	.7526
Q37	22	1.0	5.0	4.500	1.0118
Q38	22	1.0	5.0	4.000	1.3801
Q39	22	1.0	5.0	4.182	1.0970
Q40	22	1.0	5.0	4.273	1.0771
Q41	22	2.0	5.0	4.364	.9021
CLABSI Prevention	22	2.2	5.0	4.264	.8471
Valid N (listwise)	22				

Appendix F: Stetler Model Use Permission Letter

RE: Use of Stetler model,

Today, 4:52 PM
Seraphine Ikwueme

Dear Ms. Ikwueme,

You certainly have my permission to use the model [both parts, please] as you have described, with of course appropriate citation. I have attached its latest and last iteration. It can be found in

Stetler, C. Chapter 3: Stetler Model. Evidence-based Practice Series. Models and frameworks for implementing evidence-based practice: Linking evidence to action, Ed. By J. Rycroft-Malone & T.

Bucknall, Oxford: Wiley-Blackwell; 2010. [A Sigma-related publication]

Best of luck with your project,

Dr. Stetler

From: Seraphine Ikwueme [mailto:seraphine.ikwueme@waldenu.edu]
Sent: Thursday, March 1, 2018 4:48 PM
To: Cheryl.Stetler@comcast.net
Subject: Use of Stetler model,

Dear Ms Stetler,

I am a student at Walden University and I am doing a project for a DNP program.
I would like to use the Stelter Model with my paper, however I need permission to use the model.