USING TEACH-BACK GUIDED PATIENT EDUCATION TO IMPROVE HOSPITAL
CONSUMER ASSESSMENT OF HEALTHCARE PROVIDERS AND
SYSTEMS (HCAHPS) SCORES

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ABSTRACT

Ineffective communication practices, including patient education and discharge planning, that
fail to inform patients in clear terms, do not adequately satisfy patient expectations. Recent
changes that affect provider reimbursement have largely been the impetus for greater emphasis
on identifying best practices for efficient communication. The benchmark patient satisfaction
survey, Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS), uses
seven distinct composite areas, including satisfactory nurse-patient communication, to make fair
comparisons about performance from the patients' perspective. The purpose of this project was
to measure the impact of nurse-patient communication on patient satisfaction as evidenced by
HCAHPS scores. This quality improvement project (regarding this educational intervention)
used a convenience sample of 21 staff registered nurses (RN) on an immediate care unit (IMCU).
Slide style presentations were performed using standard Microsoft PowerPoint (PPT). Each
participant completed a 15-20 minute PPT presentation led by the principal investigator (PI) on
the intervention of teach-back (TB) as well as pre- and post-testing. TB was later used by staff
RNs for patient education specific to discharge planning and new medications. Select HCAHPS
items specific to nurse-patient communication were subsequently used to measure changes in
patient satisfaction. The PI-led training sessions were TB refresher sessions for this group who
had completed employer-mandated TB training 6 months earlier. TB training was found to yield

significant improvements in staff RN knowledge in post-testing (Z=3.044; p=.002) and (remediation) post-testing (t(20)=6.92; p <.002).

Resulting HCAHPS scores did demonstrate a trend of improvements; however, these findings were not statistically significant. Similar findings of improved HCAHPS scores were noted following mandated training; these results were also not significant. The use of TB training alone is not sufficient to remedy problems related to patient satisfaction regarding nurse-patient communication. Combining TB with better developed patient education practices must be used to efficiently address patient satisfaction. Examples of better developed patient education practices include input from pharmacy, simply printed medication materials listing indications and side effects, and bedside rounding that includes the patient feedback. Recommendations for future research should include how mixed and more robust patient education practices influence patient satisfaction.

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Chapter 1

Introduction

Efforts to better service the health and personal expectations of patients are beginning to take a central role in the healthcare delivery model. American hospitals discharged more than 35 million patients in the year 2010, and among Medicare patients, the 30-day readmission rate reached 20% (Alper, O'Malley, & Greenwald, 2016). Researchers are beginning to take a closer look at the pre-, post-, and bridging-intervention components of the discharge process and their ability to successfully prepare patients for the transition to home (Alper et al., 2016). One element of the pre-discharge process focuses on patient education. The importance of effective communication in patient education may appear obvious, but the healthcare community continues to struggle with consistently identifying an efficient means of achieving that goal. A recent *UpToDate* article reported that among patients aged >65 years who considered themselves to be well prepared by the discharge process, 40% could not state the reason for their hospitalization, and 54% were unable to remember details regarding their follow-up appointments (Alper et al., 2016).

The purpose of this chapter is to highlight those elements of patient education (within the inpatient care setting) which limit patients' capacity to self-manage their care, and negatively impact the goal of improving health outcomes. The theme of this proposed remedy will focus primarily on communication. By introducing evidence-based strategies for communicating with patients during key periods of education (i.e. medication teaching, symptomology, and discharge

planning), registered nurse (RN) staff can better engage and prepare patients to make responsible decisions which can contribute to the optimization of their health. In addition, the use of evidence-based communication strategies by the RN staff improves patients' perceptions of the RNs.

Description of the Problem

This project was intended to highlight the impact of provider to patient communication (relating to key periods of education) on patient satisfaction. Research from the Institute for Healthcare Communication (2011) showed a positive correlation between the healthcare agent's communication skills and the patient's adherence and satisfaction ("Impact of Communication," 2011). According to the survey, 25% of patients found that the instructions given by healthcare providers were too complicated ("Impact of Communication," 2011). A Robert Wood Johnson Foundation (Robert Wood Johnson Foundation [RWJF], 2013) report addressed a similar provider communication concern. This report referred to the healthcare community's failure to address the continued burden of 30-day readmission rates and cited "defective" communication as one of the contributing factors (RWJF, 2013).

Using evidence-based communication, such as the health literacy tool Teach-Back (TB), clarifies the information the patient receives in a way that maximizes understanding by verifying content translation. This project attempted to demonstrate how exchanging the current standard of care with TB-guided patient education can improve patient engagement, stimulate thoughtful questions, demonstrate respect for the patients' value sets, and strengthen trust and partnerships between RN providers and patients.

Effective metrics for assessing patients' perceptions of healthcare provider and systems' performance provide insightful data that prepare providers to meet the expectations of the

healthcare consumer. A chosen method of evaluating patient satisfaction must involve standardization. Most healthcare organizations have patient satisfaction surveys, but not all surveys are identical. Some systems modify conventional survey tools to gather information deemed important by their individual setting, while others may not consider how sampling impacts the results of the survey. Inconsistent means of assessing patient satisfaction negatively impacts their objective to better meet the desires of the patient, and do not inform the healthcare consumer on matters of comparability to other facilities. Creating an even playing-field that rates all participating agencies using a single barometer allows equitable comparison of healthcare systems.

Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) is a well-established validated 27-item standardized survey tool used to collect objective, comparable data regarding patients' experiences with hospital care including responsiveness, pain medication, provider to patient communication, and other elements of the patient care experience ("HCAPHS survey," 2015). Qualified participants who may complete the HCAHPS have at least a one-day hospitalization, are over 18 years of age, have no primary diagnosis of mental illness, and are presented with the questionnaire between two days and six weeks after hospital discharge (Hachem et al., 2014). The HCAHPS survey is the product of a collaboration between the Centers for Medicare & Medicaid Services (CMS) and the Agency for Healthcare Research and Quality (AHRQ), and is used for annual payment updates ("HCAPHS survey," 2015). HCAHPS public reporting systems motivate hospitals to improve quality of care, and enable public accountability of health care by using transparency ("HCAPHS survey," 2015). Centers for Medicare and Medicaid Services (CMS) use HCAHPS scores, readmissions, and improvements in both areas to assign value-based purchasing (VBP) scores which accounts for

up to 2% of hospital reimbursement (Hachem et al., 2014). HCAHPS scores account for 30% of the tota44l VBP score hospitals receive, while clinical, outcome, and efficiency measures account for the other 70% (Hachem et al., 2014). This system within CMS incentivizes organizations growth in areas of improving the patient care experience and quality.

The experience of provider to patient communication should not result in provider frustration nor a disinterested patient who is intimidated by complicated jargon or information overload. Patient-centered education methods like TB focus on providing only those elements of teaching that will best prepare the patient for favorable health outcomes. Patient-centeredness also encourages a two-way conversation where both parties are engaged and where decision-making is collaborative (Institute of Medicine [IOM], 2011).

Background and Significance of the Problem

Ineffective communication within the healthcare community is an under recognized asset that undermines efficiency and contributes to sluggish improvement of patient health outcomes. A clinician may perform thousands of patient encounters yearly. Patient encounters yield valuable information that affect the clinicians' decisions to manage the individual needs of each patient. However, factors like time constraints and competing clinical responsibilities frequently prevent providers from engaging in the collaborative conversations and shared decision-making which contribute to patient adherence, safety, and satisfaction. The Institute for Healthcare Communication (2011) pointed out how communication training for healthcare professionals is given significantly less consideration than other elements of clinical task development, and this is despite growing evidence that reveals a positive correlation between effective communication, healthcare delivery, and quality patient outcomes.

Use of skilled, proficient provider communication is a cornerstone of healthcare delivery and evidence reveals that it is particularly important to people of a lower socioeconomic status (SES). Educational level influences social and economic development including the life skills needed to access healthcare resources. Zimmerman, Woolf, & Haley (2015) cite the downstream benefits of education level and SES which are more often linked to healthier choices. These important educational factors contribute to population health. Those social determinants of health (e.g., education, employment, healthcare access, personal safety, access to healthy diet, clean water supply, and crime exposure) influence the quality of life of the individual throughout the lifespan (Zimmerman, Woolf, & Haley, 2015). The societal and physical circumstances of lower SES may result in damaged opinions of healthcare staff and providers, and frequently contribute to unhealthy decisions regarding personal health. This further affirms the Institutes for Healthcare Communications (2011) report on obstacles to patient adherence: 39% disagreed with the clinicians' recommendations, 27% expressed concerns regarding cost, 25% found instructions too difficult, and 20% felt the recommendations conflicted with their personal beliefs. Applying patient-centered methods of provider communication validates patient resources and enables optimal self-management. Improving patient responsibility and health outcomes also contributes to improving provider-patient relationships ("Impact of Communication," 2011).

Improved provider communication has far-reaching practical implications that could bolster efforts to improve patient health outcomes and satisfaction. Healthcare workers must acknowledge the importance of patient-centered communication and its contribution to patients' ability to navigate the healthcare experience successfully. Evidence has shown that regardless of their level of knowledge, a clinician's inability to effectively communicate can adversely affect a

patient's preparedness for self-management. The patient's impressions of their care experiences are influenced by their encounters with their clinicians and other staff members. Positive experiences that are clearly communicated and encourage patient engagement result in improved patient awareness, self-care efficacy, adherence, implications for informed consent, and health prevention ("Impact of Communication," 2011). The shared decision-making that results from patient-centered care addresses existing issues of health equity that seek to optimize the health of all people (Braveman et al., 2011).

TB is a research-based health literacy tool that uses a staged-approach to deliver clear, understandable messages by: (a) planning a focused approach, (b) using supplemental pictures or written materials to reinforce teaching, (c) assessing patient understanding (and revising content as needed), and (d) documenting the response to the education (Agency for Healthcare Research and Quality [AHRQ], 2010). AHRQ recommends a "universal precautions" approach to managing health literacy. Their Health Literacy Universal Precautions Toolkit recommends a standardized, routine use of TB to reduce risks associated with unclear provider-patient communication. This standardized approach is particularly important given the challenges that may result from attempting to accurately identify only those patients who would most benefit from TB (AHRQ, 2010).

Patient-centered communication tools like TB have implications for the three elements of the Institute for Healthcare Improvement's (IHI) Triple Aim: (a) improving patient care (also quality, satisfaction, and access), (b) improving the health outcomes of individuals and communities, and (c) reducing the cost of healthcare (Berwick, Nolan, & Whittington, 2008). Teach-back also addresses a growing burden among the healthcare community of workforce burnout, which negatively impacts patient satisfaction. Provider burnout is the fourth area of

focus added to the original Triple Aim, making it the Quadruple Aim, and shares the intention of improving the patient experience (Bodenheimer, 2014). Teach-back addresses issues of quality and patient satisfaction, and responds to access issues with efficiency. This well executed approach to clear and efficient communication reduces unnecessary costs related to repetitive and ineffective teaching or wasted opportunity costs, and better prepares patients for self-care.

Effective provider communication requires empathy and professionalism. Patient satisfaction can be improved through increased effort by healthcare team members and clinicians to understand more fully the complexities that prevent patient adherence. Another important element in attaining patient contentment is the development of provider-patient partnerships. This respectful form of collaboration engages the patient in a way that results in shared decision-making. Tailoring the healthcare plan to meet the individual needs of the patient provides a long-term approach to health maintenance and addressing preventative care.

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Organizational Needs Assessment

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The setting used for this project was a non-profit, community hospital in suburban Virginia. This 237-bed facility has been in existence for more than 50 years. The hospital has obtained designations of excellence for outstanding care in their Stroke Center, hip and knee replacements, and has earned a ranking in U.S. News & World Report's #6 Best Hospitals in the Washington, DC, metropolitan area. The immediate care unit (IMCU) primarily manages the care of the hospital's heart failure patients, and was used as the project's implementation site. The project included training of staff registered nurses (RNs) in proper use of TB. Those trained RNs were expected to perform all patient teaching using the teach-back method. Additionally, the staff was encouraged to include documentation of the patients' responses to the TB-guided patient education. However, no monitoring of the nurse documentation or chart reviews will

occur with this project. Intervention impact will be determined using the HCAHPS scores, specifically those sections that apply to patients' satisfaction relating to RN to patient communication and education.

The IMCU was chosen based on its care of heart failure patients and the significant connections between heart failure, hospital readmissions, and quality communication. Rising hospital readmissions are a costly reality that underscores the healthcare community's failure to address health outcomes. The Robert Wood Johnson Foundation (RWJF, 2013) created a report on the state of avoidable readmissions rates. According to that report, "…one in eight Medicare patients was readmitted to the hospital within 30 days of being released after surgery in 2010, while one in six patients returned to the hospital within a month of leaving the hospital after receiving medical care. Patients were no less likely to be readmitted in 2010 than in 2008" (RWJF, 2013). The article cited various factors that influence the growing burden of 30-day readmissions, namely care quality problems that ignore important comorbidities, poorly executed discharge planning, conflicting instructions, and a myriad of defective communication issues. Deficiencies in healthcare delivery, such as flawed communication, contribute to errors and patient safety issues, discourage patient adherence, and result in patients who are not prepared to self-manage care (RWJF, 2013). According to a recent study of 30,000 patients age 65 years and older with heart failure, the 30-day readmission rate was about 21% (White, Garbez, Carroll, Brinker, & Howie-Esquivel, 2013). This study goes on to report a 2009 cost of 37.2 billion dollars, which accounts for the largest Medicare expenditure nationally, and cites issues surrounding nonadherence (to medication regimen and recommendations for sodium restriction) and delays in seeking medical attention as the leading causes for these preventable readmissions (White et al., 2013).

An assessment of the IMCU communication and education practices was performed to plan most effectively for the project. The assessment type used was the Strengths, Weaknesses, Opportunities, and Threats (SWOT) Analysis. SWOT analyses are broad diagnostics of the setting's current performance state that can be used for comparison to a future or targeted performance state (Moran, Burson, & Conrad, 2014). What is known as the "gap" is the difference between the current state and your targeted outcome known also as the future state (Moran et al., 2014). The assessment allows identification of internal and external attributes of the area of interest, which can later be grouped as either positive or negative to the effort (Moran et al., 2014). The internal attributes are those that closely influence the actions of the area. External attributes are those that are more a component of the periphery of the project, but they could potentially impact the area (Moran et al., 2014).

An analysis of the project site was performed to determine fitness for the project. Once the initial assessment was completed, the attributes were categorized appropriately. Each of the four components of the SWOT analysis were made distinctly separate as their utility is different. A few SWOT items noted were: (a) *strengths* like using an existing electronic medical record (EMR) for monitoring every effort of patient education; (b) *weaknesses* include identifying gaps in critical elements of information by clinicians like inefficient communication methods for patient education, and not consistently documenting patient education; (c) *opportunities* identified were supporting staff members who manage the HCAHPS data (referred to as the patient experience team at this facility), and attending the monthly research team meetings; and (d) *threats*, identifying those issues (mostly external) that threaten the success of the project. A more thorough examination of the SWOT analysis findings will be shared in the methodology section of the scholarly paper.

Based on the needs assessment, it was determined that a gap existed in provider to patient communication. That disconnect was evident in the current lack of uniform documentation of patient education, deviating use of patient education materials, and missed opportunities to begin early patient education. One objective of this project was to bridge the existing communication gap by providing staff competency training that incorporated proper execution of TB to guide informed patient decision-making.

Identifying the setting and a need for change within their care delivery process creates a foundation for planning an organized execution of the project's implementation. The next step was to establish a pointed question(s) which will frame the purpose of the study. The project protocol provides the information and experiences needed to address the research questions.

Research Question

An organized approach was used to connect present conditions to the intended goal of the project. To succinctly summarize the research questions used and further investigate the teach-back intervention, a PICO question was used (Riva, Malik, Burnie, Endicott, & Busse, 2012). The PICO, a shortened version of the PICOT, refers to the study population, intervention, any comparison/control groups, outcomes, and timing details of the project (Riva et al., 2012). This research project's PICO was as follows: "*In the inpatient setting, does staff RN use of teach-back guided patient education improve select HCAHPS scores?*" This DNP project used: (a) Population- staff RNs of the setting's IMCU, (b) Intervention- TB training that was used for all patient education, (c) Comparison- comparisons of the potential impact of TB-guided patient education to the current method of patient education, and (d) Outcome- improved patient satisfaction scores as evidenced by select HCAHPS scores. Because this study focused on responses to select HCAHPS questions, only those items will be referenced throughout this

paper. Second, the goals of (a) improving nurse knowledge of the TB method, and (b)

improving patient satisfaction regarding nurse communication, were identified.

Evidence-Based Practice Model of Implementation

The evidence-based practice model is a carefully crafted step-by-step action plan that

details exactly how the objectives will be met. This DNP project used what is known as the

Evidence-Based Practice (EBP) Model (Appendix A). This Rosswurm and Larrabee developed

EBP model combines theory, communication, and careful transition planning to integrate the

EBP change (Larrabee, 2009). This model's six-step process takes a thoughtful approach to

change by enabling the system with appropriate skills throughout the process, and embeds a

change process within the actual model. The steps of Rosswrum and Larrabee model are: (1)

assessing the need for change in the process; (2) locating the best evidence; (3) critically

analyzing the evidence; (4) designing the practice change; (5) implementing and evaluating the

change in process; and (6) integrating and maintaining the change in process (Larrabee, 2009).

Step 1 - Assessing the Need for Change

Assessing the need for change involves identifying a problem, creating a team of

stakeholders to assist in correcting the problem, collecting external benchmarking data for

comparison to internal data, and developing an appropriate PICO statement that connects the

problem with the chosen intervention (Larrabee, 2009). The stakeholder team includes staff

RNs, clinical nurse educator (CNE), clinical resource director (CRD), informatics staff, patient

experience staff, unit management, and administration. Collection of data should focus on the

internal process of staff preparation for patient education and their implementation of the training

with patients. This collection step included discussing and/or reviewing mandated annual

competencies for the IMCU RN staff, reviewing select educational materials and assessing

consistency of use of those materials, examining specialty certifications obtained by staff nurses, and identifying appropriate language translation and interpretation systems. Internal data were then compared to external data. External data included dissemination of research findings, their work in shared-decision making, review of select HCAPHS scores, and workforce development. Finally, the problem of provider to patient communication deficiencies was linked to the intervention of integrating health literacy training of teach-back method. The desired outcome of the endeavor was competent and effective provider-patient communication that indirectly contributed to patient fulfillment.

Step 2 - Locating the Best Evidence

Locating the best evidence includes rigorous review of clinical practice guidelines, systematic reviews, single studies, and expert reports derived from print and electronic sources that enable the development of the study question and guide the search process (Larrabee, 2009). The Rosswurn & Larrabee model is best for integrating evidence-based changes into practice due to its patient-centered approach that aligns with the facility's mission (Larrabee, 2009). A thorough appraisal of several professional databases was performed; Cumulative Index to Nursing and Allied Health Literature (CINAHL), PubMed, and Medline. A Cochrane review was conducted to identify the best evidence to support the effort of improving patient communication. This DNP project used Cochrane evidence obtained directly from Cochrane's website. That website uses its database to build a library based on national and international contributors resulting in an authoritative body of evidence known as a "Cochrane Review" (Cochrane, n.d.). Each of the aforementioned reviews contributed to the refinement of the chosen PICO question.

Step 3 - Critically Analyzing the Evidence

Critical analysis includes weighing, appraising, and synthesizing best evidence based on its feasibility, benefits, and risks to the practice (Larrabee, 2009). The critical analysis process requires scoring a body of evidence, which includes the sum of all the information collected. This project used the American Family Physician's grading tool, called the Strength of Recommendation Taxonomy (SORT) tool (Ebell et al., 2004). The SORT system allows uniform assessment of research content based on (a) *strength* of consistent, quality evidence; (b) level of *quality* (e.g., study type*)*; and, (c) the degree of *consistency* (Ebell et al., 2004). First, leveling of each individual article was completed using an appraisal system. Next, the body of evidence was graded based on the features of strength, quality, and consistency. Once the chosen evidence was graded it was applied to the Rosswurm and Larrabee Practice Change Model. This model uses a method of integrating evidence-based changes into practice by aligning project objectives with the facility's mission and philosophy, making it feasible for use in practice (Larrabee, 2009).

Step 4 - Designing the Practice Change

This step in the process pairs defining the change, identifying needed resources, and designing the implementation plan (Larrabee, 2009). This proposed change was a quality improvement (QI) project that considered the identified deficiency in provider/staff to patient communication and addressed it with staff development training. Resources were comprised of printed materials, online/video resources, pre- and post-testing for staff RNs, PPT presentation used for staff RN training, and training space for the staff RNs. This educational intervention of refresher training on the TB method was intended for study participants, staff RNs seeking

optional repeat review of TB, and staff RNS who required remediation training. All refresher training occurred under the direction of the principal investigator (PI).

Step 5 - Implementation and Evaluation of the Change in Practice

This step of the process utilized the implementing a QI project, evaluating the process and outcomes, and developing a conclusion (based on the outcomes) from which to build clinical recommendations (Melnyk & Fineout-Overholt, 2011). Feedback from key stakeholders provided valuable insight about how to successfully accomplish the intervention around available resources and culture of the setting. Revisions to the implementation process should highlight successful components of the pilot and reject those components that do not suit the individual organization.

Step 6 - Integrate and Maintain Change in Practice

Integrating and maintaining the change in practice includes objectively analyzing the process activity. The analysis includes communicating with the stakeholders (including reporting findings); integrating the change into standards of practice (annual TB competency), monitoring the process and outcomes periodically (by assessing participation percentage and effectiveness measures), and celebrating and disseminating results (by congratulating the participants/stakeholders on percent participation and post-test measures of improvement (Melnyk & Fineout-Overholt, 2011). The results allowed a means of monitoring staff proficiency, efficacy in communication, and improvements in both patient satisfaction and engagement. Evidence of benefit from the practice change was communicated in a timely manner by the PI to key stakeholders. Sharing this information with the stakeholders reinforces their recent decision of a practice change and further supports sustainability with the chosen TB method.

The chosen model of implementation is a critical step in the transition process. Some models are best suited for a specific type of project. This applies to the evidence-based practice (EBP) model which was initially designed for the integration of evidence, but later added use of tools and quality improvement (QI) integration (Larrabee, 2009).

Definition of Terms

Definition of terms describes the utility of each term within the context of this scholarly project. Conceptual definitions will be used to define concepts, and operational definitions will be used to explain the method of measurement (Terry, 2015). The following is a list of terms used throughout this scholarly project:

- Teach-back (TB): Teach-back (TB) is an evidence-based health literacy tool that delivers small amounts of information that is then verified by the learner before additional information is presented (*Health Literacy*, 2010). The effect of TB is operationalized by having the listener repeat-back the stated information in their own words. This allows the speaker, or educator, the opportunity to refine their messaging and repeat their messaging until the listener correctly summarizes the content. The final step of teach-back includes documenting the patient's response to teaching. Again, no chart audits or other monitoring of patient education process, including patient responses, were monitored/reported in this scholarly project.

- Patient education: the provision of information and behavior modification techniques, which influence the way a patient experiences his/her illness and are aimed at improving, maintaining, or learning to cope with a condition (Pellise & Sell, 2009).

- Patient satisfaction: the product of how a service meets the expectations of the patient (Berkowitz, 2016). Patient satisfaction is operationalized by the select HCAHPS questions used within this DNP project.

- Health equity: social justice in health with an objective of addressing health differences and its determinants, and achieving the highest level of health of all people (Braveman et al., 2011).

- Health literacy: the ability to obtain and comprehend basic health information necessary to safe health decision-making (Agency for Healthcare Research and Quality [AHRQ], 2016). While this DNP project does reference discharge planning, it is important to note that the focus of this project did not only relate to discharge planning. Rather, the focus of the project was the use of TB training by staff RNs for all key patient education (i.e. discharge planning, symptomology, medication education). Consequently, health literacy was operationalized through the use of the TB technique. This will require the patients to outline important elements of the discharge plan (i.e. follow-up appointment details, symptoms that warrant medical intervention, how to titrate medications, use of sliding scales, etc…).

- Population: all staff registered nurses on the practice site's IMCU.

- HCAHPS (Hospital Consumer Assessment of Healthcare Providers and Systems) survey: a standardized patient satisfaction assessment tool. The HCAHPS were used for operationalization of patient satisfaction.

Chapter 2

Review of Literature

The literature review explores the current body of evidence regarding a topic. An expansive investigation that captures the full breadth of available knowledge on the topic informs a researcher's direction. With the development of a Quality Improvement (QI) project, it is best to provide evidence that the current state of practice is not effective and that the proposed change might help overcome deficiencies and improve practice. Outlining positive rewards directly related to the change, like cost savings or other financial benefit to the setting, add to the appeal of the practice change.

This scholarly project was evidence-based and attempted to show a relationship between patient satisfaction and efficient provider to patient communication. The literature review intentionally excluded unpublished works of research, and study findings related to children or the mentally handicapped. Most of the studies referenced in the literature review have revealed a positive connection between quality provider to patient communication and patient satisfaction. A significant number of studies exist in this area of quality, provider communication benefits.

Introduction to Search Criteria

The articles selected for this review were chosen based on their rigor and applicability to the topic of provider communication and/or health literacy. Search criteria included English language publications only. This DNP project review of the literature used research and reference materials which were published in the last 10 years. Each of the studies and/or articles used were easily accessible and in full-text versions via various reputable, professional databases

and search engines, including PubMed, Cumulative Index of Nursing and Allied Health Literature (CINAHL), Medline, Google Scholar, and Cochrane review of evidence.

The first database search was completed using Google Scholar. The literature review started by identifying key concepts. Search terms included various combinations of health literacy, patient education, patient satisfaction, patient adherence, teach-back, and discharge planning. A simple Boolean search was performed by stringing together terms with combinations of "AND" and "OR", or using asterisk to a base term was used to render more results. This researcher encountered difficulty locating studies specific to the impact of provider communication proficiency to patient health outcomes. This dearth of evidence warranted refining of search terms that connected effective provider-patient conversations, improved patient preparedness, and outcomes. During a hand search of the reference list of one article, other search terms were discovered such as "provider communication". This new search term was enlightening and became the catalyst to a slight change in the direction of the project's literature review. This adjustment became more specific to the determined research question.

That second literature search was performed using multiple databases including PubMed and CINHAL, and using the same search terms. This second search yielded several studies all relating to the relationship between communication quality and patient outcomes. Since that time, continued work has been done to investigate provider communication studies, and further exploration has included hand-searches of the reference lists of the study articles. Among those articles are (a) Zolnierek and Dimatteo (2009), which examined provider to patient communication in relation to patient adherence; (b) White, Garbed, Carroll, Brinker, and Howie-Esquivel (2013) which revealed how use of TB influenced retention of patient information, and ultimately influenced readmission rates; and (c) Wilson, Mayeta-Pearl, Parada-Webster, and

Nordstrom (2012) which demonstrated further the impact of efficient communication on health outcomes.

<div align="center">**Critique and Synthesis of Previous Evidence**</div>

Several studies conducted over the past three decades revealed patient health outcomes and satisfaction are highly influenced by clinician communication ("Impact of Communication," 2011). Positive patient experiences that include clear communication that encourages patient engagement results in improved patient awareness and self-care efficacy, and effect preventative health behaviors (AHRQ, 2016). Past research revealed the complexities of delivering a quality patient-care experience. Those experiences require a multi-faceted prescription that addresses patient attitudes about personal health management, understanding of disease process and medication use, assessment of health literacy levels, detailed transition plans, and customized education that is clear, iterative, and includes the primary caregiver.

Challenges of Measuring Patient Satisfaction

The concept of measuring the patient experience for the purpose of improving healthcare delivery and patient health outcomes is complex, and the interchangeable use of the terms patient satisfaction and patient experience make accurate measurement challenging (Berkowitz, 2016). The HCAHPS survey is intended to measure satisfaction from the patients' perspective. However, an argument exists that indicators of the HCAHPS merely underscore how well healthcare providers have met the patients' expectations (Hachem et al., 2014). Many of the items on this survey examine how patients' interactions with staff, staff responsiveness, pain control, hospital environment, and so forth, contribute to their overall level of satisfaction. A more informative marker for patient satisfaction, one that has also been revealed in HCAHPS

surveys, has been the positive feedback received regarding the role of provider communication in elevating patient satisfaction (Hachem et al., 2014).

Delivery of patient care that considers the broader scope of the patient experience best prepares the patient for self-management. Encouraging patient participation in the decision-making process results in provider-patient partnerships that are mindful of patients' values (Vahdat, Hamzehgardeshi, Hessam, & Hamzehgardeshi, 2014). Those same respectful and engaging conversations should result in approaches to self-care management that consider patients' resources, increase patient satisfaction, improve adherence to the treatment plan, and contribute to improved health outcomes.

Using Preparedness to Promote Positive Patient Experiences

Efficient communication is a cornerstone of positive patient experiences. However, communication can undermine healthcare workers' efforts if executed poorly. Peter et al. (2015) examined the relationship between care transition from the inpatient to the outpatient setting. This quality improvement initiative was piloted in a Magnet® facility. The study used the intervention of TB-guided patient education for discharge planning. Using a convenience sample of adults admitted to either the medical or surgical units for treatment of heart failure, the study surveyed participants over a three-day period for retention of knowledge. Issues of non-participation or refusal were reported to the assigned physician and/or case manager to allow proper adjustments to the patient's outpatient follow-up needs. The study results suggested that increased patient knowledge alone did not affect readmission rates. However, of the 469 readmissions, only 180 of the patients received prior TB-guided patient education. Those same patients had decreased readmission lengths-of-stay relative to patients who had not received past TB-guided education, which meant an overall cost-savings.

A second study examined ways to prepare human immunodeficiency virus (HIV) infected adolescents for navigation of healthcare systems from pediatrics to adult care (White, Howland, & Clark, 2015). This pilot study used an EBP model to integrate into practice TB-guided patient education at an adolescent HIV clinic. Using a patient outreach coordinator as the educator, TB was used to educate the adolescent patients on health and medication management. A convenience sample of 10 participants was used over a period of eight weeks. Both pre- and post-testing were used (demonstrating reliability). Findings demonstrated positive effects of patient preparedness for navigation of the healthcare systems. Limitations of the study included short testing window and a small sample size. The small sample size limits generalizability. In this same study, the short testing window prevented some participants from attending arranged follow-up testing.

Several citations have highlighted the value of patient comprehension as it relates to patient satisfaction. To better understand the breadth of research currently in existence regarding provider to patient communication and patient satisfaction, a taxonomy tool was chosen to critically appraise the literature. The tool chosen for this DNP project was the Strength of Recommendation Taxonomy (SORT) tool (Ebell et al., 2004).

Strength of Recommendation Taxonomy (SORT)

The SORT tool grades evidence based on its quality, consistency, and strength (Ebell et al., 2004). SORT is one of many taxonomy systems that applies objective standards for grading evidence and allows the reader/researcher to rate the merits of the evidence. SORT places focus on patient outcomes and its standardized means of grading allows thorough screening and identification of the best available evidence (Ebell et al., 2004). By using a system that pairs

leveling of evidence and strength of recommendation, SORT manages to filter the highest quality findings from those of lesser quality.

The level of evidence is categorized by numbers 1, 2, or 3, and refers to the validity of an individual study based on its design type. Higher rankings of evidence, those that would correspond with a "1" for an individual study, indicate good, quality evidence that is patient-oriented and includes a meta-analysis or systematic review of randomized-controlled trials which have steady findings. The second level, "2", is also patient-oriented; however, due to its use of cohort studies and case controls which carry variable findings, is of limited quality. Finally, a "3" applies to studies that use sources like consensus, opinion, usual practice, and case series. A level 3 study is not patient-oriented, has inconsistent findings, and is normally devoid of real quality (Ebell et al., 2004).

SORT is used to grade the body of evidence. Grading a body of evidence requires an assessment of the levels of evidence included within the individual studies, the measured outcomes (patient-oriented or disease-oriented), and the study's overall quality based on reliability as evidenced by study conditions and consistency (Ebell et al., 2004). The strength (or grade) of the recommendation also uses a scheme of A (highest), B, or C (lowest) to rank a body of evidence, and is only necessary if the evidence includes key recommendations for clinicians relating to either diagnosis or treatment (Ebell et al., 2004). Using grading systems highlights the most ideal evidence for translation of research into practice.

This taxonomy system was used to grade the empirical evidence used within this scholarly paper. Each of the graded studies was chosen based on a theme of effective communication. The studies focused on TB's effect on adherence, patient health outcomes, patient satisfaction, and patient and family engagement.

Teach-Back and the Relation to Readmissions

Two studies examined the connection between provider/staff use of TB and patient readmissions (Peter, Robinson, Jordan, Lawrence, & Casey, 2015; White, Garbez, Carroll, Brinker, & Howie-Esquivel, 2013). White et al (2013) examined whether hospitalized heart failure (HF) patients who received TB-guided patient education retained self-care knowledge and how that impacted readmission rates. White et al, (2013) followed 276 HF patients aged 65 years and older over a period of 13 months and compared self-care knowledge retention. Peter et al (2015) worked on identifying how to improve care transition plans to reduce the rates of patient readmissions. Peter et al. (2015) followed a group of more than 200 nursing facility residents during a six month period and looked at how better developed, interdisciplinary transition plans, ones that include a patient assessment, patient and caregiver education, patient handover, and post discharge management, correlated to changes in readmission rates.

Study design. White et al (2013) used a prospective cohort study which used the verifiable teach-back method to confirm patient education. Participants' level of knowledge retention was tested at seven days post-hospitalization using telephone calls and medical records. Retention was measured by the patients' ability to correctly answer three of four self-care questions.

Peter et al (2015) used an observational cohort study in which none of the study population members were blinded nor controlled. This study was limited by the fact that the nursing staff members did not always practice key learner education throughout each step of the admission process. Many of the cases found that education was not addressed until the very end of the admission where all education content was attempted to be addressed with the discharge instructions. Lastly the more effective communication delivered with the TB method resulted in

patients increased ability to self-manage care and to adhere to appropriate follow-up appointment(s).

Outcomes. White et al (2013) showed no significant reduction in all-cause 30-day readmissions rates for patients who answered a satisfactory percentage of self-care questions both during admission and at the time of follow-up, seven days later. However, a trend near significance was noted among patients who were readmitted for another episode of HF. Peter et al.'s (2015) findings revealed the importance of effective TB communication on overall comprehension and preparation of the key learner (patient or caregiver).

Strength of research. Using the SORT tool, White et al. (2013) received a level of evidence score of "2" because while the study used a high quality, prospective cohort, the surrogate endpoints chosen for measurement (correctly answering self-care questions), did not describe the individuals' condition of health, and the less than the desired 80% follow-up. The Peter et al. (2015) study also received a score of "2". Both studies were given a quality level of 2 based on their use of lower-quality diagnostic cohort studies. In the case of Peter et al. (2015) the absence of blinding and inconsistent research procedural protocol was problematic. The initial protocol instructed the nurses to document the outcome of the patients' experience with TB without prompting. However, a subsequent hospital-initiated process implemented hardwired documentation that queued nursing documentation of patient teaching. Alterations in the protocol may have influenced outcomes.

HCAHPS and the Relationship to Readmissions

Hachem et al. (2014) examined the link between provider communication, patient satisfaction, and hospital readmissions. The Hachem et al. (2014) study took the approach of using the patients' perspectives to gauge provider performance, and identified indicators for

anticipating future readmissions. Study findings demonstrated a link between HCAHPS scores in areas of nurse or provider communication and risk for readmission. Readmission rates were lower among patients who chose higher or highest ratings, known as top box scores, to grade provider communication. However, this phenomenon of top box selections did not apply to dependent patients or patients with other scenarios that required continued assistance in the home. When examining HCAHPS scores that apply to patients' needing assistance after discharge to home, higher scores were linked to increased rates of readmission. Hachem et al (2014) found that the higher HCAHPS scores specific to the area of discharge assistance corresponded with patients with higher severity of illness (SOI) and were therefore at greater risk for hospital readmission.

Study design. Hachem et al. (2014) looked at the contradictory link between discharge communication, patient satisfaction, and readmissions. This study used a retrospective, cross-sectional study with a sample size over 30,000 participants from 10 different hospitals. Of the eight HCAHPS questions analyzed, higher scores on questions regarding "nurses listening" and "doctors explaining information" were linked to a decreased risk of readmission, while higher scores regarding "help after discharge" were linked to an increased risk for readmission (Hachem et al., 2014, p. 71).

Outcomes. Hachem et al. (2014) provided strong evidence for the connection between SOI and readmission. In fact, this study noted a statistically significant relationship among SOI and readmission rates. Confounding factors like evidence of SOI on readmissions gives better context for the usefulness of the HCAHPS scores and may become useful predictors of patient behaviors.

Strength of research. Hachem et al. (2014) used a patient oriented, key citation of provider to patient communication and patient satisfaction as a point of evidence. This study's use of case studies makes the outcome findings unreliable and garners a SORT level of 3.

Effective Provider Communication & Patient Adherence

A single study was examined for the correlation between effective communication and patient adherence. Zolnierek and Dimatteo (2009) proposed a link between patient adherence and provider to patient communication (as evidenced by the clarity and understandability of the instructions). The study argued for more effective provider communication training due to its indirect impact on patient health outcomes.

Study design. This meta-analysis study used 106 correlational and 21 experimental interventions to support its hypothesis. Patient adherence was coded to allow fair comparison of data. Quantitative assessment was made of patient adherence, effect size, and physical communication.

Outcome. The study findings showed a positive connection between respondents' adherence and physicians' communication in all but two of the 106 correlation studies used (Zolnierek & Dimatteo, 2009). The connection was also reported as significant ($p<.001$). According to this study, a 19% higher risk of non-adherence was noted in patients who were managed by a physician who communicated ineffectively. The odds of improved patient adherence are significant when compared to the adherence shown by a patient managed by a physician who has not received training in effective communication. Using a patient-centered care model, the study demonstrated the best approach to improving adherence is by developing better provider communication skills.

Strength of research. The strength of this recommendation is a "1". The "1" rating is determined based on its use of the highly favorable study called meta-analysis, which analyzes the combined data of multiple studies. The quantitative assessments noted within the study are more reliable and valid than a qualitative assessment. Additionally, the increased reliability and validity represent increased study strength.

Social Support and Patient Health Outcomes

To date, only one study has been used to examine the impact of social support on patient outcomes. This is of interest for this study as TB encourages family and caregiver involvement in patient education. Strom and Egede (2013) of type 2 diabetes examined the relationship between social support and increased clinical outcomes, decision-making, motivation, self-management, medication adherence, and adoption of healthy lifestyle. Social support was defined as emotional; tangible, including provisions; informational, counsel, guidance; and companionship (Strom & Egede, 2013). In this case, higher levels of support coincided with greater levels of compliance and control of diabetes. Some evidence suggests that it is the patients' perception of existing support that affects his/her health outcomes.

Study design. This was a systematic review which included 27 articles. Sample sizes ranged from 12-3535. Studies included in the review were cross-sectional, cohort, or interventional studies.

Outcomes. The study's purpose was to look at the relationship between social support and patient outcomes in adults with type 2 diabetes. Nearly half the studies included in the review reported on clinical outcomes, one-third on behavior modification, and the remaining studies reported on psychosocial and support findings (Strom & Egede, 2013). The evidence suggested that higher levels of social support positively influence outcomes in participants.

However, the method of delivering social support varied depending upon racial background. According to study findings, minorities tended to rely on support from family and peers, while Whites were more likely to receive support from media and healthcare providers (Strom & Egede, 2013). Unfortunately, the use of cross-sectional studies makes causality difficult to infer. Additionally, the presence of considerable homogeneity of the samples across the 27 studies limits transferability of findings.

Strength of research. Most of the samples showed improved outcomes. The strength of this recommendation is a "2" based on its limits to quality. Systematic reviews are among the highest levels of research. These reviews address a research question by compiling empirical evidence. Despite the systematic review, the inclusion of weaker, cross-sectional studies and gaps in the literature on different sample populations, the study's reliability was damaged.

Overall State of the Evidence

Grading the body of evidence involves the examination of *key recommendations*, *patient-oriented outcomes*, and the *type of research studies* that were used (Ebell et al., 2004). Each of the studies appraised addressed a key recommendation that influences clinician decisions regarding patient treatment and diagnosis. These key recommendations apply directly to clinician-patient communication and advance care-planning, professional development, and/or public engagement (Ebell et al., 2004) These recommendations consider outcomes which are of importance to the patient (i.e. cost reduction, improvement of symptoms, and decreased mortality). Despite these favorable characteristics found in the body of evidence, the mix of studies failed to meet the minimum requirement of consistent findings among acceptable study types. For this reason, the overall body of evidence was given a SORT score of a "B".

Rationale for Project

As the supportive research reveals, both communication and thorough transition planning have a clear link to patient outcomes. Shifting to a patient-centered health care model (with regards to teaching) encourages a partnership between the patient and provider. A patient-centered approach to care should include information that is well communicated, and should involve the active involvement of the patient and caregiver to improve health care quality and reduce costs. To that same end of improving patient knowledge related to individual health and disease process, the healthcare community should not only prepare to communicate effectively, they should also be prepared to accommodate low health literacy.

Empirical evidence shows the importance of effective provider-patient communication on patient health outcomes. The current approach to patient education at the project site was less than effective. Changes to the original methods of patient education at the project site were warranted for several reasons. First, at the onset of this project, the unit's standard of care for discharge teaching included the use of printed materials from a hospital-approved internet-based patient-education website. Second, staff nurses selected the materials most appropriate for the patient's condition and provided it to the patient and/or family; however, the choice of printed materials often differed depending on the assigned nurse. Third, those materials were not normally used during the nurses' communication of instructions with the patients and/or their caregivers. This incongruence did not optimize understanding for the patient.

Teach-back has been proven to increase patient comprehension and satisfaction. Given this evidence of benefit, it seems reasonable to pursue application of the proposed evidence-based intervention for patient education in the identified practice setting. The practice setting's well-developed electronic medical record (EMR) make it plausible to embed standardized

documentation of the patients' responses to education. Consistent documentation that is prompted by the EMR, may improve the chance for sustainability of the project.

In the early phases of site approval of this project, the project site announced a hospital-wide mandate requiring all staff RNs complete TB training which was delivered under the guidance of their staff educators. It was later determined that a slight shift needed to occur in the implementation of this DNP project. This shift in the implementation plan meant that in lieu of the DNP student conducting the initial education about TB to staff nurses, she would instead provide refresher training on the TB method. As the staff RNs received their mandated training in the Spring of 2017, the refresher training would be used primarily as a six-month refresher. However, this refresher teaching will also introduce new details regarding the TB method which were not detailed during the mandated sessions. The outcome measurement of selected HCAHPS scores to determine patient satisfaction remained as originally intended.

Chapter 3

Methods

This chapter gives both a detailed description of the implementation process and explains how its inherent strategy will be used to generate the project's findings. The project methodology used each element of its strategy to remind the reader of the project's purpose (Moran, Burson, & Conrad, 2014). By combining available resources with a realistic timeline, a researcher can deliver on project milestones in a way that is timely and demonstrates progress. A well formulated methods chapter bolsters the validity of the project and offers measurable findings that verify impact. This chapter will articulate the various components of the DNP project including the design, framework, procedures and outcomes.

Design and Framework for Change

Design

This QI project used a before-and-after design. Before-and-after studies are a form of non-experimental study which allow measurement of intervention impact. Before-and-after (BAA) studies examine changes within an environment and make comparisons between different points of time, usually before and after an intervention (Thompson & Panacek, 2007). The BAA design is good for short-running studies, but less useful with longer studies due to threats to internal validity. Internal validity threats like confounders, drop-outs, and maturation, are those naturally occurring changes to an environment that also impact the outcomes being evaluated within the experiment. These threats make it difficult to make strong arguments for the impact of the experiment's intervention. The predictability of BAA studies can be strengthened by taking multiple before and after measurements. The data from those multiple measurements can

be used to verify the presence of consistency with the observed change to the environment, thereby reducing concerns regarding the influence of the internal threats to validity (Thompson & Panacek, 2007). This DNP project included univariate analyses which examined characteristics of patient satisfaction information derived from the select HCAPHS scores at baseline and post-intervention.

The design protocol explains the sequence of the intervention and subsequent measurement that was used throughout the project. The primary objective of the project was to show a relationship between TB-guided patient education and HCAHPS scores. The independent variable in this project was the intervention of TB-guided patient education. The dependent variable was select HCAPHS scores which reflect patient satisfaction with staff RN teaching and nurse-patient communication.

The first step of this DNP project's protocol involved introducing the role of the independent variable, patient education. The second step included full TB-refresher training to all interested staff RNs on the IMCU. Again, this facility changed their standard of care for patient education six months prior to the start of the project. All RNs completed mandatory, hospital-led TB training with the intent of using their training to improve patient education and patient comprehension. HCAHPS survey return timeframes that corresponded to pre- and post-refresher training was reviewed to assess patients' satisfaction regarding TB-guided patient education.

Frameworks for Evidence-Based Practice (EBP) Change

EBP model. The Rosswurm and Larrabee model (2009) addresses an area of weakness within the care delivery process integrating a more reliable alternative, and mindfully embeds the process for future consistent use. The EBP model (Appendix A) was originally titled the "Model

for Change to Evidence-Based Practice"; however, that name gave a false perception that the model was only suitable for integrating evidence-based practice changes (Melnyk & Fineout-Overholt, 2011). The newer, current model was revised to make it useful for quality improvement, integration of EBP, and other changes to practice (Melnyk & Fineout-Overholt, 2011). This six-step process includes an in depth review of the literature, which is appraised for quality and consistency. The strongest evidence is used to reveal the best approach to addressing an existing flaw within the system. The impact of the TB-refresher training findings were shared with the stakeholder group explaining its benefit to practice. The replacement process was then monitored closely to ensure continued success and appropriateness for the setting. That benefit was intended to serve as the impetus for integrating the new process.

 Six Sigma®. Six Sigma® is a process improvement methodology used to improve customer satisfaction and eliminate defects improving business processes (Six Sigma, n.d.). Initially introduced in 1986, Six Sigma® was originally used to reduce manufacturing variability at Motorola™. Six Sigma® is now used in various manufacturing areas including healthcare. Six Sigma® identifies the correct interventions, answers the corresponding who, when, where and how of the intervention, and the means of measuring the outcome (Six Sigma, n.d.). Six Sigma's® methodology is based on a five-step process called the DMAIC® which refers to its steps of defining, measuring, analyzing, improving, and controlling, and has a focus on correcting problems with unidentified solutions. *Define* includes identifying a quantifiable issue, like effective communication, and developing corrective actions that align with the values of the organization and its customers; *measure* refers to existing process steps, those relating to nurse patient communication and education, and examines how they contribute to faults within production; *analyze* applies to identifying opportunities to bridge the gap between currently

delivered nurse-patient communication and desired practice; *improvement* means using corrective solutions (i.e. integrating TB-guided patient education) to addressing problems unveiled during the analyze step; and *control* refers to identifying the tools that will limit variances (i.e. standardized use of TB-guided patient education), ensuring optimal performance, and creating a routine for sustainability of the process.

After completion of steps of the DMAIC® there is an informal step called the *synergize* step. The synergize step is a celebration intended to honor the contributions of the team members, to encourage their continued dedication to the success of the new process, and to develop learning resources (Six Sigma, n.d.). The DMAIC® method was used throughout this DNP project to address any variability to the TB-guided patient education process.

Project Sponsors and Resources

Sponsors of and resources for this DNP project included all individuals, services, and physical amenities necessary for the execution of the project. *Sponsors* played a role in leading, contributing, assisting in the management of the project, and overall responsibility for its outcomes. These sponsors are key stakeholders who contributed to a multidisciplinary team for this DNP project.

Other resources included:

- Technological: Computers, PowerPoint® video presentation including links to Institute for Healthcare Improvement (IHI) video demonstration scenarios.

- Human: Sponsors consisted of multiple staff members (Clinical Nurse Educator; Nursing Research and Evidence Based Practice Coordinator; staff RNs, contract RN staff; patient experience staff; information technology (IT) staff; unit managers; clinical director IMCU; senior director critical care). Other sponsors

were the project mentor and a university-affiliated QI content expert, both of

whom were members of the DNP project team.

- Physical: Training rooms were selected by project site management. All staff RN

    training was performed at the practice site, either in the IMCU break room or a

    conference room adjacent to the unit.

Marketing Plan

From its earliest stages of development, key stakeholders were approached with the DNP

project's purpose of improving patient satisfaction by transforming nurse to patient

communication. A series of flier announcements, PowerPoint® presentation, and frequent

debriefing sessions with the stakeholders were used to notify all parties of the purpose,

intervention, objective, and any relevant unforeseen factors that may serve to obstruct the

success of the DNP project. Findings of the study were shared with key stakeholders at the

project site.

Human Subject Review

This DNP project optimized the protection of human subjects. The project did not

require any direct contact with patients, the sample consisted entirely of staff RNs. All

participants provided written informed consent. This consent informed the researcher of the

participants' authorization to publish aggregate study findings. Each participant was made aware

that the study was voluntary and that they may withdraw from the project at any time.

Safeguards were taken to protect the privacy and identities of the study participants.

Whenever possible, information was de-identified to maintain anonymity; however, information

that required identifying information was coded and stored in a locked space within research

directors' hospital-based office.

This DNP project required Institutional Review Board (IRB) approval prior to beginning any onsite implementation. IRB represents a committee that oversees all research conducted with human subjects; its intent is to assure ethical research standards, research integrity, and appropriate informed consent processes (Moran, Burson, & Conrad, 2014). Approval was obtained from both the researcher's DNP program (Georgetown University) and the project site. Because this study's intervention was a teaching program for staff, the project carried a minimum level of risk to the study subjects. Due to its minimal risk, the proposal qualified for an expedited IRB review from both entities. IRB for the practice setting was completed first, and the practice setting also became the IRB of Record.

Population

This study used a convenience sampling method that was open to all staff RNs (part- and full-time) on the immediate care unit (IMCU) of the project setting. *Convenience sampling* was used to select the study population. Convenience sampling uses a sample population that is easily accessible to the researcher, and is normally based on volunteer participants (Terry, 2015). In convenience sampling, the population is based on volunteers or other obtainable contributors, which limits the generalizability of findings to the greater population (Terry, 2015). Data regarding study participant characteristics were collected to monitor their impact on the project and its outcomes. Selected characteristics included gender, employment status, degree earned, and years of nursing experience.

Determination of the proper sample size depends upon the chosen sampling method. Convenience sampling method choses its participants based on their easy accessibility. In convenience sampling, it is possible to achieve sample representation even with relatively small sample sizes (i.e. less than 100 participants). Optimizing sample representation among small

participant pools is done by including as many participants from the pool as possible (Terry, 2015). Because the project's IMCU setting had 36 eligible staff members, all staff RNs were invited to participate in the project. Inclusion criteria for the study were as follows: (1) English-speaking staff RNs who were regular employees on the project's unit, (2) 18 years of age and over, and (3) completed TB refresher training led by the PI. Exclusion criteria for the study were as follows: (1) staff members who were unable to successfully complete refresher TB training, (2) contracted staff from outside agencies or per diem staff members who had not completed the requisite TB refresher enrollment/training session, and (3) staff pulled to the IMCU from other units.

The management personnel from the project site encouraged all staff RNs to participate in this DNP project, however, for the purposes of the project only staff RNs who volunteered were included. Due to a recent hospital-wide mandate, all staff RNs completed mandated TB training as a requirement of continued employment. Staff were educated by the hospital staff educators on the proper use of the TB method of communication for all patient education. While use of TB within the setting had been mandated, participation in this study was optional and not a requirement for continued employment.

<p align="center">**Procedures and Timeline**</p>

The procedures and timeline consist of a single procedure, TB refresh training, and a timeline that thoroughly outlines the schedule of milestone moments and other important tasks. Project site management and impacted staff RNs were kept updated on the project timeline. The PI carefully coordinated refresher training sessions.

Recruitment

A flyer announcing the research study was conspicuously posted within the employee break area of the project's unit. Flyers were posted immediately following IRB approval. Recruitment occurred two to three weeks prior to TB refresher training/enrollment. To notify as many interested staff RNs as possible, the facility research staff shared the flyer in group fashion using employee email accounts. The flyer indicated that RN staff participants were being sought for a research study.

Informed Consent

The consent document gave a detailed account of the purpose of the study, risks and benefits, protection of participants, and whom to contact for any questions/concerns. In response to the flyer and announced TB refresher training/enrollment dates, interested staff RNs arrived at a selected room within the IMCU. The refresher-training and enrollment process started with the PI reviewing the entire consent document aloud for the group. To further ensure anonymity, a signature waiver process was chosen. Once review of the informed consent form was completed, questions by staff RNs were answered fully. Individuals were reminded that participation in the study was voluntary and they could elect to rescind their participation in the study at any time. Staff RNs interested in moving forward with the study stayed for the pre-testing, full presentation, and post-testing.

Refresher Education Session

Training materials used during the refresher training sessions were created by the PI. These materials were used to aid in the refresher training process, which entailed a written pre-test to evaluate baseline knowledge of the method, a brief PowerPoint® (PPT) presentation detailing the steps of the process and demonstration scenario, and post-testing of the method to

determine effectiveness. Training packets were provided to each participant and included the consent form and two identical survey testing tools. The survey testing tool was a 10-question tool used for both pre-testing and post-testing. The pre- and post-tests were color coded, yellow for pre-tests, and blue for post-tests. Participants completed a pre-test to assess baseline knowledge of TB. Pre-testing was followed by PI-led TB-refresher training. Training was followed by post-testing. Each participant was required to achieve a minimum score of 80% to be considered successfully trained. Tests were coded using the last four digits of the participants' phone number to allow correct pairing of the pre- and post-tests and consent verification of each study enrollee. Participants were allowed to take the post-test as many times as needed to achieve a score of 80%; however, to accurately measure the effect of TB training, only scores were designated as post- and remediation post-testing. The full enrollment process (consent, pre-test, refresher training presentation, and post-test) occurred in a single session of approximately 30 minutes. Training occurred in a pre-arranged teaching space within the hospital, and was chosen by the facility. For the convenience of the staff, various times and dates were chosen for training.

Data Collection Timeline

Official project implementation began during the summer of 2017 and ran for a period of approximately two months. The data collection was completed using pre-, post-testing surveys and demographic data from RN participants, and compiling select HCAHPS scores generated from discharged patients. The PI was present on-site for the first few weeks of the staff RNs' implementation of TB-guided patient education, and on a less frequent basis thereafter. During the first two to three days of the implementation process, the PI worked closely with the facility coordinator to support staff and encourage seamless continuance of the desired use of teach-

back. While documentation of patient education was encouraged during the refresher training sessions, no surveillance or chart reviews were conducted to verify documentation.

Project Instruments

There were several instruments used in this DNP project. Those included a TB survey completed by the RNs at the time of training and the HCAHPS survey completed by the patients after discharge. By using the TB survey and the HCAHPS survey, the researcher gave neutral insight that can be used to determine current state of the patient satisfaction and staff nurses' awareness of the TB method. TB-guided patient education performed by the staff RNs was not directly observed; therefore, it was not possible to ensure that staff RN participants used the method correctly.

TB Survey

The researcher-created TB testing tool (Appendix B) was developed specifically for the training portion of this project. The 10-question testing tool was created directly from information covered during the teaching sessions. The 10-question tool was initially used as a pre-test and assessed baseline knowledge of TB. After the pre-test was completed, refresher training occurred. Post-testing was performed using the same 10-question tool as was given for the pre-test. Each item on the test was worth 10 points, creating a total possible score of 100. The TB survey tool was not evaluated for validity or reliability prior to completion of the data collection period, which presented weakness to the measurement component of the project. Finally, the TB survey testing tool also captured important demographic (Appendix B) information deemed pertinent to the outcome of the DNP project. Those pertinent demographic items included employment status, gender, degree type, and years of nursing experience.

Patient Outcome Data

HCAPHS surveys are voluntary patient satisfaction surveys conducted by independent agencies and later publicly posted for review. The HCAHPS is a 27-item (combined Likert and yes/no), nationally standardized patient satisfaction tool that uses seven composite areas to rank provider performance ("HCAPHS survey," 2015). This DNP project focused on two composite areas of the HCAHPS survey (a) nurse communication, and (b) medication management, using items # three, sixteen, seventeen, twenty, and twenty-five (Appendix C). Medication management was not a focus of this study; although, medication management was affected by nurse communication. Thus, the medication management items were included in this study. HCAPHS survey participants include eligible discharged patients. Discharged patients have the option of completing their surveys via telephone or by mail.

HCAPHS survey results were monitored closely by the PI and key players of the stakeholder team. Responses to those select HCAHPS items were obtained directly from a member of the project setting's patient experience team. The patient experience team manages all HCAHPS survey responses and data. While results of the HCAHPS are made public quarterly, those same results are available to participating hospitals in real-time allowing them to be aggregated or de-aggregated to suit the examination needs of the healthcare system. For the purposes of this DNP project, HCAHPS scores were initially planned to be reviewed for the first quarter of the calendar year. This pre-refresher TB training data would have been considered the project's baseline data. Data collected from the third quarter HCAHPS scores represented surveys that capture relevant patient education which occurred post-TB refresher implementation. These data were considered the project's post-implementation data.

The project goal was pursued by enhancing provider-patient communication that promotes patient satisfaction. Each staff RN had attended TB training provided directly by the facility. Study participants received supplemental, refresher training on TB provided by the project PI. This goal of enhanced communication with content delivered by staff RNs were evaluated through the examination of a series of select HCAHPS survey questions (Appendix C) that correspond with patients' satisfaction.

Data Analysis Plan

Quantitative studies use both descriptive statistics, which explain the data that has been collected, and inferential statistics, that test hypotheses related to a population (Terry, 2015). This quantitative study was a quality improvement project and was conducted with the intent of demonstrating the effect of the intervention, TB (guided patient education), on patient satisfaction. The TB method was chosen because of its reputation of optimizing patient comprehension, and the proven link between patient satisfaction and clear provider-patient communication. This knowledge also influenced the chosen approaches to implementation and evaluation for this DNP project.

Addressing Goals and Objectives

The goals and objectives of this project were achieved. These goals were chosen to address the primary research question, "*In the inpatient setting, does staff RN use of teach-back guided patient education improve select HCAHPS scores?*" There were two goals for this DNP project (a) improving nurse knowledge and comfort level with use of the TB method, and (b) improving patient satisfaction regarding staff RN performance with effective communication. Objective one was achieved by using the TB training and assessment tool, (i.e. TB survey tool) to measure increased knowledge of the TB method. Objective two, improving patient

satisfaction, was accomplished by comparing mandated- and refresher-training group data from HCAHPS scores.

Goals and objectives were addressed by utilizing data collected throughout the project including its descriptive statistics. Data collected from the TB survey also allowed comparisons and measurements to be made of staff RN knowledge of TB method, and analyses of participant demographic characteristics. The TB survey was analyzed using IBM™ Statistical Package for Social Sciences (SPSS) Statistics for Windows (Version 24.0). Select HCAHPS scores were evaluated for changes in performance. Mandated- and refresher-training groups' data regarding pre- and post-intervention HCAHPS scores were used to evaluate staff RN performance in communication. Analyses for select HCAHPS were achieved by using data analysis software called STATA® (version 15).

Conclusion

Based on the initial needs assessment, it was determined that a gap existed in (RN) provider to patient communication. That disconnection was evident in the lack of standardized method of performing patient education, deviations in consistent use of patient education materials, missed opportunities to begin early patient education, and patient satisfaction scores regarding ineffective communication. Staff competency training that incorporates proper execution of TB method was used to address the identified gap in performance. This use of TB is intended to guide informed patient decision-making. Data analysis of findings will look for improved patient satisfaction as evidenced by rises in scores for the selected HCAHPS questions.

Chapter 4

Results

This chapter presents a thorough two-part analysis of the data yielded from this DNP project. The intervention, TB training, was provided to a group of staff RNs. Select HCAHPS scores were subsequently used to evaluate patients' levels of satisfaction with the nurse-patient communication utilized when performing patient education. The study also examined how variables such as gender, years of nursing experience, full and/or part-time status, and nursing degree type, influenced registered nurses' perceptions and abilities to perform patient education. Data were collected in an expansive way that would demonstrate a link between the intervention and outcome(s). The assumption was that improved nurse-patient communication would be associated with improved patient satisfaction. Goals of this project included increasing staff RN knowledge of teach-back method, and improving select HCAHPS scores relating to patients' satisfaction regarding nurse-patient communication.

Analysis of Data

The data analysis involved a two-part process which examined information collected from the TB and HCAHPS survey tools. Part one of the data analysis focused on the TB survey tool which was completed by the staff nurses. Only individuals who completed the full enrollment process, which included the consent process and meeting the minimum score requirement (pre-, post-test, and appropriate remediation on survey), were included in the final sample.

The second stage of analysis looked at HCAHPS scores from patients. Completion of the HCAHPS survey is voluntary and efforts to improve response rates may continue for up to six weeks after hospital discharge. Because of this collection practice, response rates for HCAHPS surveys vary substantially. This study did not focus on response rates for the HCAHPS survey. However, the total number of HCAPHS surveys was important as it directly impacted the overall performance scores for participating providers and systems. Lower survey counts within a single month that include as much as a single score that does not meet the benchmark, can cause notable fluctuations in performance scores. For this reason, evaluations of longer time periods give more robust data with findings that are more useful.

Demographic Characteristics

A total of 22 of the eligible 36 staff RNs completed the enrollment process; however, one RN failed to complete the requisite remediation. That one staff RN was not included in the final sample size. Thus, total sample size for the study was 21. The response rate (RR) for the study was 58.3%.

Demographic data were used to describe the characteristics of the sample participants (Table 1). The demographic variables consisted of (a) education or degree type, (b) work/employment status (full- or part-time), (c) years of RN experience, and (d) gender (male or female). Most participants (76.2%) were BSN prepared. Of the participant sample size (N = 21), nearly all were employed full-time (n=20), which accounted for 95.2% of the sample. Fifty-two percent (52.4%) of the sample had between one and four years of experience as an RN; 28.6% had more than 10 years; and, 19% with five to ten years of RN experience. Finally, there was only one male in the entire sample, (n=1), or 4.8%. Only one participant in the categories of

work status and gender participated; therefore, no comparisons could be made about significant differences or comparisons within those subpopulations.

Table 1

Characteristics of Sample Participants (N = 21)

	n	%
Education/Degree Type		
Associate's Degree (AD)	3	14.3
Bachelor of Sci/Nurs (BSN)	16	76.2
Masters/Doctorate (M/N)	2	9.5
Work Status		
Part Time	1	4.8
Full Time	20	95.2
Gender		
Female	20	95.2
Male	1	4.8
Years of Experience		
($M = 7.5$; $SD = 6.2$)		
1-4 years	11	52.4
5-10 years	4	19.0
More than 10 years	6	28.6

Summary of Findings

Based on the initial needs assessment, a gap existed in (RN) provider to patient communication. That disconnection was evident in the lack of standardized method of performing patient education, deviations in consistent use of patient education materials, missed opportunities to begin early patient education, and patient satisfaction scores regarding ineffective communication. The gap was addressed by providing staff competency training that incorporates proper execution of TB to guide informed patient decision-making.

Descriptive Results from Teach-Back Test

The ten questions included in the TB survey (Appendix B) were evaluated individually. Frequencies of responses taken from the post-test only are reported here. Of note, the questions

are not intended to be presented in a specific order; however, to improve clarity, the questions are numbered in this analysis:

Question #1: The Teach-Back method uses true & false questions to evaluate the patient/client's understanding.

Question 1 was intended to test staff RNs awareness of the importance of open-ended questions in the TB process. A predominant number of the staff RNs seem to demonstrate knowledge of this fact as evidenced by their post-test scores. There were 2 individuals (9.5%) who responded incorrectly to this question.

Question #2: Which response best describes the Teach-Back method?

This question was intended to identify groups or populations for which TB would be appropriate). The options included different educational levels, English-speaking individuals, age, and visually impaired. Data from this item was impressive as there were no incorrect responses noted for this question.

Question #3: Teach-Back's *Universal Precautions* refers to (which of the following)?

In evaluating staff RNS awareness of the recommendation that TB be applied using Universal Precautions. There were 5 participants who answered this question incorrectly. However, one of those participants was excluded from the sample pool. Consequently, 19% of the participants (n=4) were not aware of the intent of Universal Precautions in this context which refers simply to a practice of always using the method.

Question #4: Teach-Back is a test of patient comprehension.

This true/false item yielded poor post-test scores. A total of 16 participants responded incorrectly (71.4%). The question should have demonstrated an understanding that patient comprehension is the responsibility of the staff RN who, in this case, was the educator.

Question #5: The Teach-Back method places the responsibility of communicating clearly on (one of the following)?

Scores for this item suggested a lack of understanding with regards to the onus of responsibility when using TB. Like the responses noted to item 4, which could be argued as a rewording of the same question, only 38% of the participants answered this question correctly. Nine individuals answered this question incorrectly.

Question #6: Teach-Back uses visual aids (in which of the following circumstances)? The understanding of the role for visual aids in reinforcing the education/concepts addressed in TB seemed too high. Of the 21 participants, 90.4% answered appropriately.

Question #7: The client's response to Teach-Back should be documented when? The item evaluated staff knowledge of when TB documentation is to be done. All staff RNs recognized the importance of this task. Addressing this item after each patient encounter addresses the matter of timeliness and aids in improved communication to other staff and/or providers that also assist in the management of the patients' care. There were no incorrect responses for this question.

Question #8: Teach-Back should only be used by nurses. This true/false question was asked to identify staff RNs awareness of the utility and value of TB in elevating clarity for all providers and staff. Among all test participants, three individuals answered incorrectly. One of the three individuals was excluded from the study, this meant there was only 9.5% of the population that answered incorrectly (n=2).

Question #9: Teach-Back should not be used on nurse, physician, or other healthcare providers who are admitted for patient care. There were no incorrect responses for this question. All participants correctly affirmed that TB is appropriate for all patients.

Question #10: Teach-Back is a research-based health literacy tool, and it is patient-centered? There were 2 participants who answered this question incorrectly. This true/false item was intended to detect RN staff awareness of the patient-centered feature of TB. The presentation opened with an introduction to tool citing its effectiveness at addressing health literacy and engaging patients using patient centeredness.

The TB survey was analyzed using IBM™ SPSS Statistics for Windows (Version 24.0). Scores used were based on percent correct answers. Reliability testing was performed during the data analysis (by a contracted statistician) and gave context to the consistency of the TB survey tool. The Cronbach's alpha of .585 for this 10-question survey indicates low reliability. There was one question, item ten (10), that negatively correlated with the other questions. Removal of item ten (10), raised Cronbach's alpha to .666; however, this value also failed to meet the desired score of .70 or higher which indicates reliability for a new tool (Tavakol & Dennick, 2011). One could argue that the nature of these questions may not be of a scale-type variety, a feature most effectively measured by Cronbach's alpha. Because various aspects of knowledge were tested, it is not surprising that Cronbach's alpha was relatively low. Cronbach's alpha measures the correlations among the items of a similar construct (Tavakol & Dennick, 2011); however, when different aspects of knowledge are being assessed, correlations may be relatively lower. It is also important to acknowledge that Cronbach's alpha is influenced by the number of items on the scale (Tavakol & Dennick, 2011). This pre- and post-test tool contained only 10 items.

Comparisons of TB Survey Pre- and Post-Testing

Review of pre- and post-intervention testing data were compared. Reviews of the post-intervention mean values were separated into either post-testing or remediation (post-testing). Post-test scores were examined first. Paired *t* test was initially chosen to compare changes in

mean scores (for full sample) from pre-test to post-test. However, the high levels of skewness among post-test score data violated the normality assumption required for the paired t test. Consequently, non-parametric, Wilcoxon-signed ranks tests were run. Wilcoxon testing showed statistically significant differences between pre- and post-testing for the full sample ($Z=3.044$, $p = .002$). Mean percentage correct pre-intervention was 71.1% ($SD = 9.4$); at post-intervention mean percentage correct was 82.9% ($SD = 15.2$).

Four participants failed to meet the requisite 80% score necessary for passing the post-test. Those four participants (3 BSNs; 1 AD) were positioned for remediation training. In the case of remediation testing, the remediation scores would replace the original post-test scores. The remediation post-test scores were normally distributed; therefore, appropriate for paired t-testing. Mean scores after remediation showed an increase in mean to 90.0 ($SD= 7.1$). Those results showed greater (remediation) post-training values than pre-training values ($t(20) = 6.92$; p<.001).

Differences between pre-, post- and post with remediation scores were compared by education level. Pre-test scores by degree type indicated (AD) 73.35%; (BSN) 69.3%; and, (Master's/Doctorate) 80%. Post-testing scores were: (AD) 80%; (BSN) 83.12%; and, (Master's/Doctorate) 85%. These examinations reflect higher pre-testing scores among Master's-prepared participants. However, greater post-testing scores and overall improvement were noted among Bachelor's-prepared nurses (19.94% mean increase) (Figure 1.). Repeated measures ANOVA evaluating the 3 groups (pre-, post-, post-test remediation) could not be done because, the small sample sizes of two of the three educational groups (MSN/D= 2; AD=3) and data skewness violated ANOVA assumptions. Therefore, Kruskal Wallis testing was used to evaluate differences based on education level. Kruskal Wallis was applied to difference scores

(post- minus pre-testing) for the three groups. Results showed no difference in performance, $X^2(2)=2.97$, $p=.226$. Using remediation adjusted post scores also showed not differences by educational level, $X^2(2)=4.12$, $p=.127$.
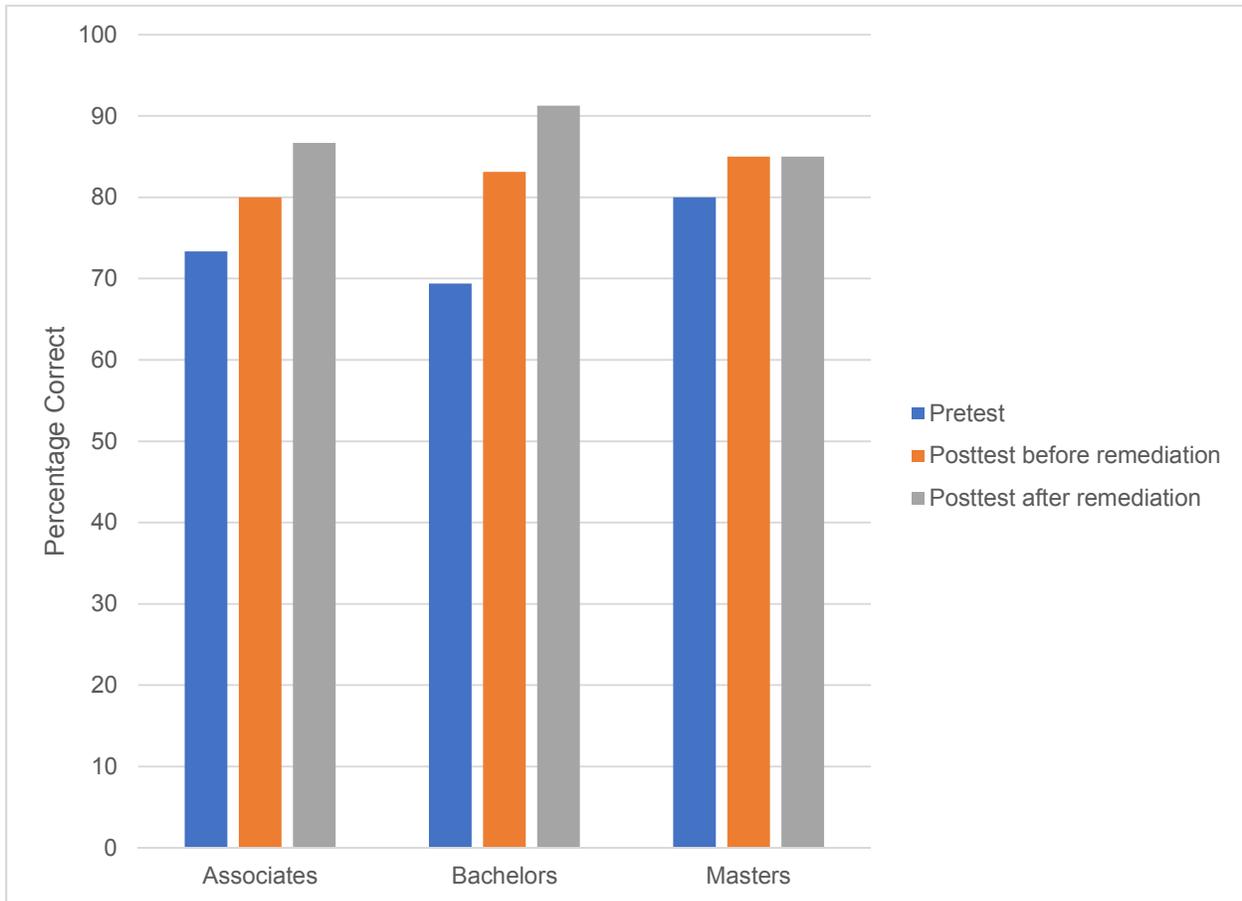
Figure 1. Pre-test to Post-test of TB Survey, Education Level

Secondly, examinations were made based on years of RN experience. Evaluations of mean differences in scores (years RN experience) showed a 14.6% increase among participants with 1-4 years of experience, 12.5% increase among 5-10 years of experience, and 6.7% increase among participants with greater than 10 years of experience (see Figure 2). Kruskal Wallis testing for data relating to years of RN experience showed no significant differences in percentage correct by years of experience, $X^2(2)=1.714$, $p=.424$. When remediation adjusted post test scores were considered, there were no significant differences by years of experience, $X^2(2)=0.007$, $p=.996$.
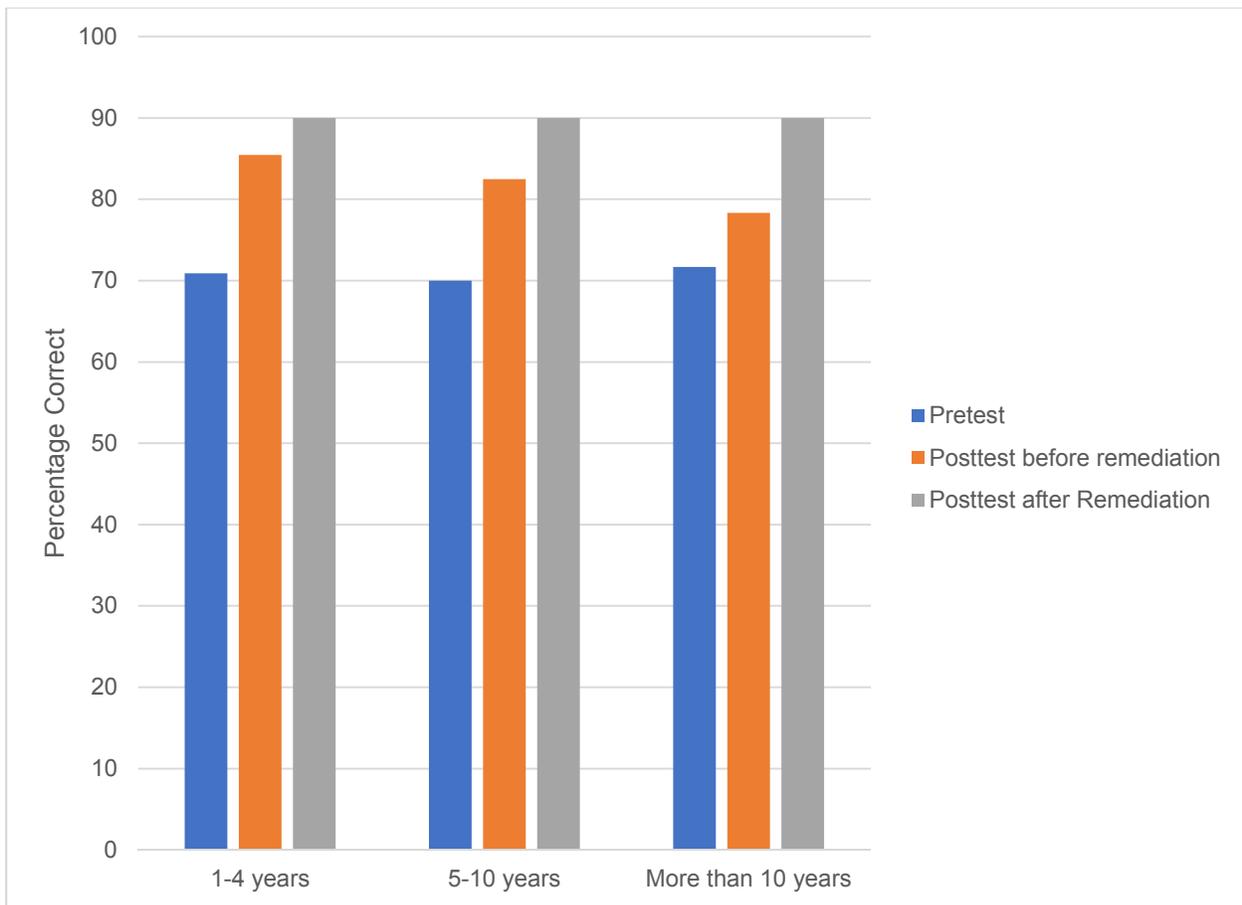
Figure 2. Pre-test to Post-test of TB Survey, Years of RN Experience

Select HCAHPS Scores

Select HCAHPS scores were compared to measure impact of this DNP project's intervention on patients' satisfaction with the education communicated by staff RNs. An unexpected development in this study was the announcement of hospital-wide mandate the required all staff registered nurses to complete facility-led TB training. That *mandated training,* completed by the organization, began in late February 2017, and was completed by March 8, 2017. This mandated training corresponded with the HCAHPS measuring period of the first quarter of the calendar year. *Refresher training,* completed by the PI of the study, began in August, and ended in September.

Refresher training began and ended in two separate quarters presenting unique circumstances that would influence the final data interpretation. The refresher training began and ended in August. Data collection for this DNP project began August 2017 and ended in September 2017; therefore, the project covered two different quarters of the calendar year.

To equitably compare the selected HCAHPS scores following mandated training and following refresher training, equal amounts of time prior to and following training were scrutinized. The total number of HCAPHS surveys returned during the month of August was two. This was followed by a total of 14 surveys returned in the month of September. Because of the low survey response rate for August, comparisons to September surveys would misleadingly show significant increases in select HCAHPS scores. Those scores would not reflect actual impact of DNP-lead refresher training. HCAHPS survey response rate for February and March were, respectively, 15 and 12. Based on the combined numbers of HCAHPS survey in February and March, more accurate analyses could be made with regards to the benefits of the mandated training.

For purposes of fairness, timeframes for comparison were equally mapped within respective quarters. Measuring baseline HCAHPS scores at July and final scores one month after training completion (in October) was determined to best reflect the influence of refresher training. A corresponding analysis period that included the months of February and May where selected for mandated training.

Analyses for select HCAHPS were achieved by using data analysis software called STATA® (version 15). A data table (Table 2) was created for comparison of HCAHPS data. The data demonstrated evidence of increased top box scores post training. Top box scores are the benchmark and represent best performance. Data analyses showed no statistically significant

changes to HCAHPS or top box scores after either training type, organization-mandated or PI-

taught refresher.

Select HCAHPS items (Appendix C) were reviewed individually. Each question

investigated for changes in improved top box scores and patient satisfaction. The goal for the

Table 2

HCAHPS Data Table

MANDATED					
	Feb/Mar 17 %	**Apr/May 17 %**	**z**	**p**	**Upper box Percentile After**
Nurses explain in a way you understand	70.37	75.86	0.464	.643	43
Tell you what new medicine is for	84.21	84.21	0.00	1.00	**91**
Staff describes medicine side effects	55.00	57.89	0.182	.856	1
Info re symptoms	86.36	83.33	-0.286	.775	**89**
Understood purposes of all medication	65.22	60.71	-0.332	.740	1
REFRESHER					
	Jul/Aug 17 %	**Sept/Oct 17 %**	**z**	**p**	**Upper box Percentile After**
Nurses explain in a way you understand	57.14	69.57	0.541	.611	10
Tell you what new medicine is for	40.00	73.33	1.353	.176	26
Staff describes medicine side effects	40.00	57.14	0.659	.510	1
Info re symptoms	100.00	89.47	0.894	.372	**98**
Understood purposes of all medication	20.00	52.63	1.303	.193	1

This table has been formatted to distinguish between mandated and refresher training, and
highlight top box scores (always, yes or strongly agree) greater than or equal to 78.6%.

practice location is a percentile rank of 65, which corresponds to a top box percentile of approximately 78.6 percent or benchmark.

Two separate graphs were created to facilitate HCAHPS score comparisons between mandated (Figure 3) and refresher (Figure 4) groups. Each graph compares patient satisfaction scores based on five selected HCAHPS questions both before and after the TB intervention. The five select HCAHPS items are numbered within the analysis only for purposes of orderliness; these numbers do not correspond to the numbering used within the full HCAHPS survey. Within the full HCAHPS survey, these items are numbered: 3, 16, 17, 20, and 25.

Item #1: Q#3: Nurses explain in a way that you understand?

A measure of both the clarity and consistency in which the staff RNs explained information to patients revealed evidence of less than optimal patient satisfaction. Baseline mandated training scores of 70.3% and 75.86% were also not at par with the benchmark goal. Refresher training survey counts more than doubled between baseline and post-intervention, the respective scores of 57.1% and 69.5% failed to meet the benchmark of 78.6%.

Item #2: Q#16: Tell you what new medicine is for?

In examining how consistent staff RNs were at informing patients of the indication of the new medication, and doing so before the med was given, analysis did not reveal significant improvement of HCAHPS scores. However, data did demonstrate benchmark findings for baseline 82.4% and post-intervention scores 84.2% based on mandated training data. Their top box percentile score for this question was 91. Refresher training top box percentile score was 26.

Item #3: Q#17: Staff describes medication side effects?

Patients showed low satisfaction with staff RN performance in describing medication side effects. Both mandated and refresher interventions gave rise to low percentile scores, post

intervention. Post intervention scores were 57.14% for refresher training, and 57.89% for the

mandated counterpart. Those percentile scores correspond to top box percentile scores of one (1)

for both test periods.

Item #4: Q#20: Information regarding symptoms?

Effective descriptions of symptomology resulted in consistent patient appreciation for both test

periods. Mandated testing periods show impressive scores that remained relatively stable with a

baseline of 86.3% and subsequent score of 83.3%, consistent with top box percentile of 89.

While the baseline remediation score was 100% score at baseline, this group experienced a dip in

subsequent performance to 89.47%. Notwithstanding the potential implications of this dip, this

group still succeeded in meeting the benchmark with a top box percentile of 98, which is 9 points

higher than that of the comparison group.

Item #5: Q#25: Understood purposes of all medications?

Both groups underperformed in the area of educating patients on the indication for their

medications. Mandated group baseline, 65.2%, and post-intervention, 60.7%, remained

relatively consistent. Refresher training scores showed an increase from the 20% baseline, to

52.63% post-intervention scores. Both groups achieved a top box percentile score of one, which

was well below the 78.6% benchmark.

<div align="center">

Outcomes

</div>

Data collected from two sources were used in this study. The TB survey was used to

determine knowledge of TB, verify impact of TB training, and capture nurse demographic data.

The HCAHPS survey provided empirical data on the various elements of the patient experience

or "patient satisfaction" including efficient nurse-patient communication.
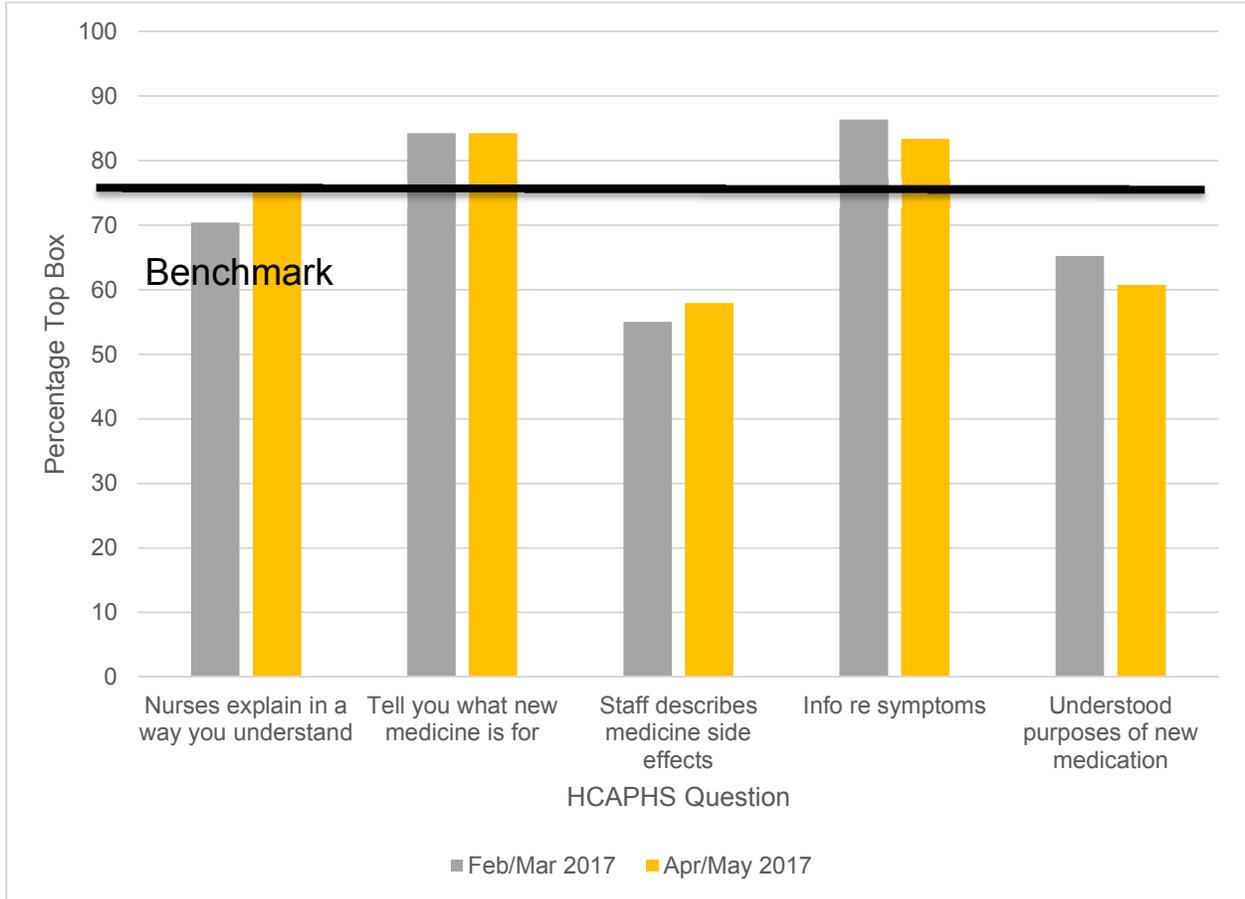
Figure 3. Mandated Training Results: Comparison of HCAHPS Percentage of Top Box Scores Before and After Mandated Training

This study used a single research question: "*In the inpatient setting, does staff RN use of teach-back guided patient education improve select HCAHPS scores*?" The research question was specifically designed to consider those elements of the HCAHPS survey which measured effective RN communication (Appendix C) and did not address other areas of the patient experience. The hypothesis for this study was that more efficient communication would result in increased knowledge and awareness of the TB method among staff RNS, and improved patient satisfaction regarding staff RN to patient communication.

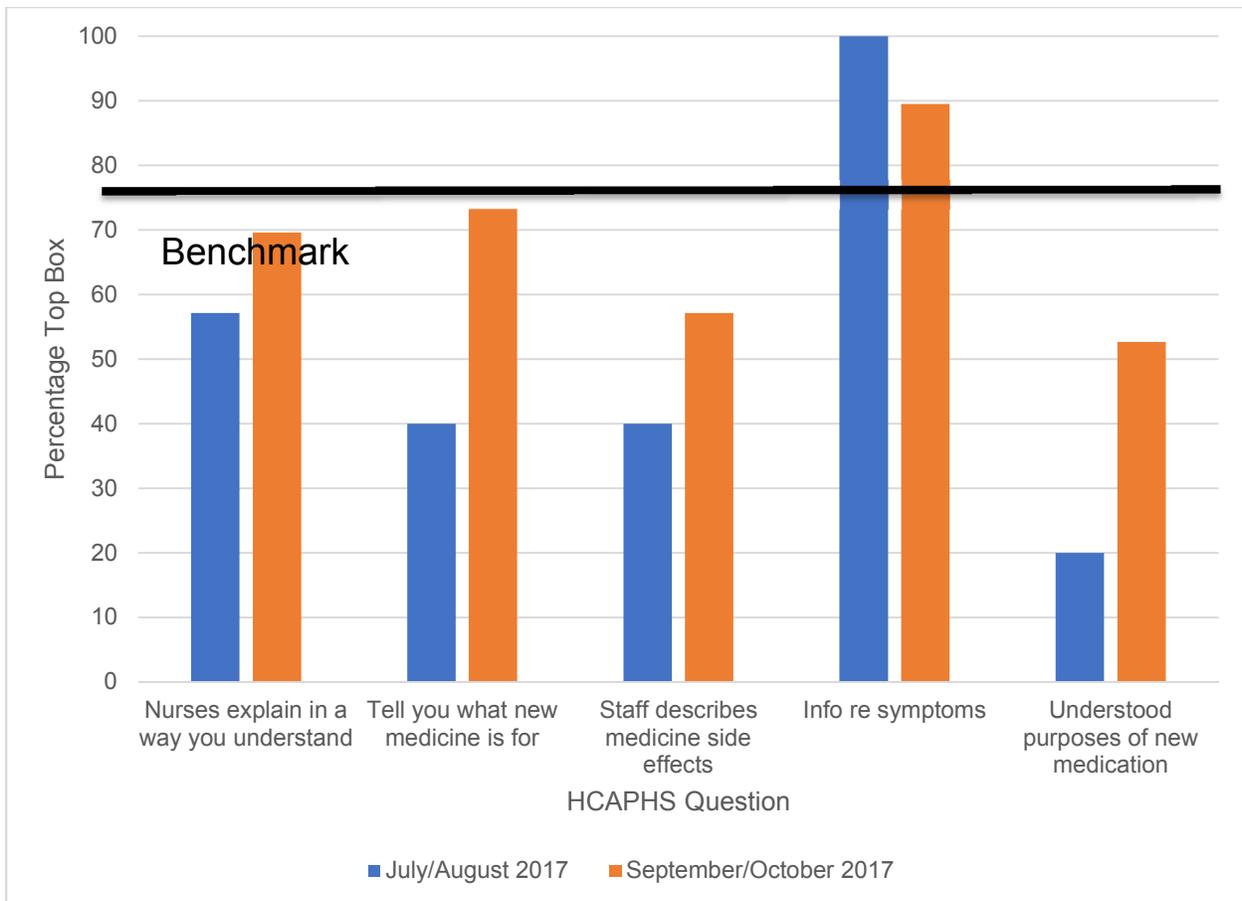*Figure 4*. Refresher Training Results: Comparison of HCAHPS Percentage of Top Box Scores Before and After Refresher Training

The results for this study were presented using a combination of the study participants, research question, and the source of data used. A broad review of nurse-patient communication and the factors which contribute to patient appreciation revealed the complex nature of addressing patients' expectations. Using baseline and post-test comparisons, it is clear that training interventions used on staff RNs which covered the teach-back method do improve knowledge and comfort level to this efficient form of communication. Additionally, review of select HCAHPS scores show that patients responded to the method with increased gratitude. Numerical metrics intended to categorize patients' levels of satisfaction may not render the sort of meaningful data required to yield effective growth in provider and staff performance. Barriers to HCAHPs data collection which included large disparities in response rates made the

evaluation of trends difficult and created artificially inflated evidence of performance growth. Similarly, inconsistencies like use of float/transient staff RNs who did not complete refresher training or instances where a staff RN failed to use the method consistently, may have undermined the positive effect of the intervention.

The importance of improving provider performance and its impact on patient satisfaction was noted throughout this project. Continued growth and improvement of select HCAHPS scores noted during the data analysis of this project also justified continued use of this recently implemented measure. Interpretation of the project findings promoted understanding of the desires and expectations of patients in the inpatient setting. While the TB survey used during refresher sessions was not validated prior to the project, there was evidenced growth noted among staff RNs. Statistical testing used in data review separated findings of significance to ones that were not; addressing concerns regarding differences in RN abilities based on demographic characteristics or HCAHPS data changes among the mandated and refresher groups. Despite the rise in HCAHPS percentile scores in both groups, neither group achieved statistical significance nor did they reach the 76.8% benchmark. This summary underscores the complex nature of measuring patient satisfaction and uncovers limitations within the study which may be a potential area for future research.

Chapter 5

Discussion and Conclusions

Chapter five is intended to review and discuss the findings of this study. The purpose of this project was to demonstrate how TB prepares members of the nursing profession to improve the patient experience, measured by patient satisfaction scores noted on HCAHPS surveys. This chapter provides a larger context to factors (ie. limitations) which were impactful to this project's purpose, and outline evidence that supports or rejects the project hypothesis. Using the two chosen survey tools, TB and HCAHPS, data were collected and analyzed to provide key insights that inform the nursing profession of the value of efficient communication on the patient experience. This discussion concludes with recommendations for practice and research.

The hypothesis for this project was that "Efficient nurse-patient communication results in increased patient satisfaction". To prove the hypothesis, a study was coordinated that began with providing PI-led, TB-refresher training to a group of staff RNs. The training provided TB-guided patient education, and specifically focused on medication education and discharge planning. No chart audits were completed and no direct observation was done to evaluate the nurses' execution of the TB method. Select HCAHPS data were collected over a two-month period post TB-refresher training, and were later compared to baseline HCAHPS. Only select HCAHPS questions, five select questions that measure nurse-patient communication and medication teaching, were used in the data analyses. Results demonstrated statistically significant improvements in nurses' knowledge regarding TB. HCAHPS scores also improved; however, those improvements were not statistically significant.

The project's findings revealed the limited effect of TB on patient satisfaction, which was an unexpected finding. While there was a trend towards increased patient satisfaction, the

statistics revealed an only marginal impact on patients' satisfaction regarding nurse-patient communication. Analysis of the data yielded a more meaningful interpretation of the true impact of TB and gave a clearer understanding of how improvements could be integrated into practice to better utilize teach-back's evidence-based method of communication.

Discussion of Findings

Use of the teaching intervention to increase efficiency with nurse communication has been shown to promote awareness and results in spikes of HCAHPS scores (Association for Patient Experience, 2016; Berkowitz, 2016; Oni, 2012). This DNP project noted improved patient satisfaction when comparing HCAHPS scores at points pre- and post-TB training/implementation. The refresher group's overall HCAHPS score differences were visibly larger than those of the mandated group. Although, neither group achieved statistically significant findings.

The findings of the data analysis support the hypothesis of the study. Based on this study, efficient nurse-patient communication does improve patient satisfaction. The metrics described within this scholarly paper, TB survey (nurse data) and HCAHPS survey (patient data), were chosen based on their ability to provide empirical data regarding the impact or outcomes identified within the goals and objectives. The two chosen survey tools did serve the intended measurement purposes of this study. Empirical data from the tools were used to answer the primary research question, "*Does staff RN use of TB-guided patient education improve select HCAHPS scores?*" Specific details on collected data will be discussed separately.

Teach-Back Survey Findings

The TB method highlights the importance of engaging the patient, and caregiver where appropriate, in the patient education process. Patient/caregiver engagement is an important

component of the TB method as it is critical to reinforcing patient understanding, and aids in the development of nurses' mastery of TB. More traditional teaching methods, ones that do not include elements of interactivity, may not yield the highest levels of understanding (Chan, Ha, & Ng, 2016). That more traditional approach to teaching may encourage students to focus on memorization of content, rather than applying skills or understanding the individual steps or elements of the topic. Demonstration assessments promote mastery of knowledge by encouraging elaboration and utilization of one's own words, thereby improving student awareness (Chan et al., 2016).

TB was utilized throughout this project to improve nurse awareness and mastery of its efficient method of communication. A PI-created TB survey was used to measure changes in participants' knowledge of TB. Findings from this study showed improved participant knowledge, and signaled readiness for use with (key) patient education. However, the low reliability of the TB survey may have impacted the participants' scores, giving the false impression of participant readiness. Participants appeared willing and ready to begin TB-guided patient education, but mitigating factors likely played a role in the effectiveness of TB implementation. Mitigating factors included construction at the project organization and patient assignment or workload commitment for the nurses. Scheduled construction that displaced staff RNs from other units to the IMCU affected the establishment of the new TB routine. Patient assignments for the nurses were not adjusted to accommodate the slower patient education processes that were expected during early implementation of this new teaching technique.

Participants were grouped by personal characteristics to determine potential performance differences noted on TB survey scores. Characteristic groupings included gender, years of RN experience, full- or part-time status, and degree type. Master's-prepared participants began with

slightly higher pre-test scores. Bachelor's-prepared participants achieved the highest post-testing and remediation post-testing scores. Pre- to post-testing performance noted with the refresher-TB intervention showed no statistically significant differences between staff RNs with different degree types and years of experience. This finding may have been explained by the original, mandated training which occurred six months prior to this DNP project's intervention. That mandated training may have established a common level of the awareness and knowledge regarding the TB method.

HCAHPS Survey Findings

The HCAHPS survey was used to measure patients' level of satisfaction with RN staff member performance of nurse-patient communication. The HCAHPS is a 27-item nationally standardized patient satisfaction tool used to rank provider performance ("HCAPHS survey," 2015). This study focused specifically on five HCAPHS items that relate to performance during discharge instructions and medication education. Provider/organization participation with HCAHPS is voluntary. However, there are benefits to participation including its publicly reported findings which allow customers to carefully select which providers and healthcare organizations will manage their healthcare needs. Another benefit to participation is the reimbursement incentive that is managed by Centers for Medicare & Medicaid Services (CMS). CMS uses HCAHPS scores, readmissions, and improvements in both areas to assign value-based purchasing (VBP) scores which are used to determine hospital reimbursement (Hachem et al., 2014). As such, improved nurse to patient communication may improve HCAPHS scores, which then benefits the healthcare organization.

This DNP project focused on three composite areas of the HCAHPS survey (a) nurse communication, (b) symptomology, and (c) medication management, using items # three,

sixteen, seventeen, twenty, and twenty-five (Appendix C). Again, medications and symptomology per se were not an area of focus for this study. Although, education regarding those two items are directly influenced by the efficient communication used by the RN staff. Consequently, the medication and symptomology items were included in this study.

HCAHPS (mandated) patient survey scores showed most improvement with two questions: (a) #3: "Did nurses explain things in a way that you could understand?", and (b) #17: "Staff describes medication side effects?" Question #3 scores improved from baseline mean of 70.3%, to post-intervention mean of 75.86%. Question #17 scores increased from 55% to 57.89%. Unfortunately, the corresponding p-values were .643 and .856, respectively. These scores were not statistically significant. HCAHPS (refresher) patient survey score comparisons showed the most improvement these questions: (a) #16: "Tell you what new medicine is for?", and (b) #25: "Understood purposes of all medications?" Those comparisons showed improvements from 40% to 73.33% for question #16, and 20% to 52.63% for question #25. These HCAHPS scores showed greater improvement to performance; however, these values ($p = $ .176 and .193) were not statistically significant. Neither group's scores managed to improve performance to the top box (benchmark) position. Patient satisfaction scores relating to question #20, "Information regarding symptoms?", consistently dropped among the mandated and refresher groups. Comparisons of baseline and post-intervention HCAHPS scores for question #20 showed consistent decreases in patient satisfaction (mandated) 86.5% and 83.3%, and (refresher) 100% and 89.47%. Despite these dips in performance, both the mandated and refresher groups managed to remain above the benchmark position.

Differences in performance between mandated and refresher groups may not accurately reflect levels of patient satisfaction. The voluntary nature of customer satisfaction surveys

makes responsiveness challenging. Patient satisfactions surveys, like the HCAHPS, are slightly different based on the importance of the patient experience. HCAHPS survey response rate averages 32%, with nearly 3/4 of participating hospitals achieving >27% response rate (Siegrist, 2013). At the time of this project's data analysis, the survey counts from February through October of 2017 ranged between two and fifteen per month. Differences in respondent survey numbers can misleadingly influence performance scores in a negative or positive direction, and was likely a factor in this study. Additionally, given the relatively low response rate it is difficult to make predictive generalizations about similar populations.

Limitations

This section of the paper discusses the limiting factors that impacted the overall findings of this study. These limitations, including confounding variables, were beyond the control of the PI. Limitations to this study include small sample population, short data collection period, execution of TB, and few respondent HCAHPS surveys

The small sample size for this study may limit generalizability of the study findings. Representative sample groups manage to capture the most realistic depictions of a population. This convenience sample was successful in capturing most characteristics of a typical nurse population, primarily BSN-prepared, full-time, female gender, and less than five years RN experience. The study population failed to represent the impact of male gender or part-time employment status. Among the total study population (N=21), male gender (n=1) and part-time employment (n=1). Due to such small numbers, those characteristics were eliminated from the data analysis.

The brief, two-month data collection period limits the study's accuracy in detecting consistent nurse behaviors and patient satisfaction scores. Before-and-after studies are most

useful in measuring impacts of short-term programs because they avoid naturally occurring changes that happen over time, like staff changes, culture transitions, and participant drop outs (Thompson & Pancek, 2007). Those changes, known as threats to internal validity, blur the effect of the intervention. Optimizing the effects of before-and-after studies requires multiple test points to verify consistency and exclude random changes in outcomes (Thompson & Pancek, 2007). A review of the HCAHPS (mandated) scores at six months post-TB intervention showed substantial decreases in staff RN communication performance. Because of the relative short data collection window, no similar data exists for the HCAHPS (refresher) scores. Consequently, it is difficult to make estimates about sustainable staff RN performance based on TB-refresher training.

Better execution of the TB process may have resulted in improved participant performance. This limiting factor was impacted by a few factors: oversight, survey tool validation, training deficits, and untrained staff. First, there was no oversight of the participants' use of TB during patient education. The absence of performance monitoring and chart reviews, to monitor consistent use and/or patient response to the TB method, limited the ability to directly observe the impact of this relatively new patient education process. Secondly, the TB survey tool was not validated prior to using the tool for refresher training. This lack of validation is an important step to eliminating errors which may occur within the measurement phase of the study (Kimberlin & Winterstein, 2008). Determinations made regarding the requisite 80% pass score may not have correctly identified testing performance. Thirdly, nurse participation was challenging and training sessions were suspended frequently due patient care responsibilities. To assuage nurse distress, many training sessions were accelerated; therefore, creating a possible scenario of different levels of training efficacy. Lastly, there were IMCU staff RNs and transient

staff (displaced by hospital construction) who never completed TB refresher training. Population

contamination resulting from the presence of untrained and/or less effectively trained individuals

affected the HCAHPS (refresher) scores.

The chosen patient satisfaction metric also impacted the overall numeric performance

values. An important element to identifying limitations includes the identification and use of

tools which possess the ability to accurately measure the intended behavior or outcome are key

to identifying intervention effect. Limited respondent HCAHPS surveys can artificially inflate

or deflate provider performance scores. HCAHPS scores show the averages for provider

performance based on patients' satisfaction. Comparisons of those averages between to different

groups with different survey counts (ie. small vs. large) can give the false impression of

differences in scores. It is likely that the hospital mandate of TB-guided patient education

corresponded with increased efforts to encourage patients to complete the HCAHPS surveys.

Additionally, there are emerging questions in research about HCAHPs ability to accurately

measure patient satisfaction. Hachem et al. (2014) clarifies that the current HCAPHS measure

patient perception of how well providers perform, but they do not truly measure patient

satisfaction. Siegrist (2013) discusses emerging technology called "sentiment analysis" which

utilizes technology that detect grades of emotions within words that are used in the comment

sections of patient satisfaction survey. The results of these analyses are said to be more

meaningful and allow providers an opportunity to create more effective approaches to improving

patient satisfaction. One could argue that even in the presence of a favorable HCAHPS score,

the patient could add comments that may counter the points currently measured on HCAHPS.

This could also explain the limited impact of TB on this study's patient satisfaction scores.

A significant influence on this study was the unexpected hospital mandate for TB training which preceded the start of this DNP project. This unpredicted change to the setting created an environment that was ripe for transition and willing to create the means necessary to ensure success. The support and encouragement of management as well as the staff RNs' desire to improve their communication performance played a significant role in this QI project.

Implications for Research

The use of effective nurse to patient communication is critical to patients' self-management of care and improves patient satisfaction. This study seems to support the argument for a change in standard of practice. Nursing may have little influence on the development of standardized patient satisfaction tools. However, there is opportunity to standardize effective nurse-patient communication by improving nurses' comfort levels and consistent use of TB. To achieve this goal, it is important that the profession re-examine the approach to integrating TB into practice. Implications for nursing practice include proper use of: (a) provider staff, (b) educational resources, and (c) caregiver inclusion. As patient educators, staff RNs must be provided the support necessary to integrate TB into practice. Support includes appropriate TB training for staff RNs, and time needed to complete the training. Educational resources should be available in various, readily available forms to reinforce the patient understanding and foster improved staff RN comfort level with the TB method. Patients' caregivers and/or identified family member should be included in the education/decision-making process. Each of these steps contribute to the success of effective integration of TB-guided patient education by utilizing a patient-centered approach to nurse-patient communication.

Recommendations for Research

This study uncovered the limits of traditional TB training and HCAHPS scores. Another important factor evidenced through this project is the benefit of increased interactivity between staff RN and patients. This interactivity centers around improved patient engagement and shared decision-making. Recommendations for future studies may consider (a) inclusion of comment augmented satisfaction surveys (i.e. sentiment analysis), (b) impact of personal customer service representatives that broker satisfaction (using a combination of feedback from the current patient and former patients), and (c) the role of increased nurse-patient interactions on patient satisfaction.

Recommendations for Nursing Practice

The identification of the best approach to addressing the patient care experience is both intricate and elusive. While identifying areas of ineffective performance may contribute to overall performance improvements, it is likely that true patient satisfaction cannot be achieved without mastery of effective nurse to patient communication. Competence alone is not sufficient to arrive at improved patient satisfaction.

Addressing practice flaws related to TB use could be managed with collaboration and resources. Support and resources that stimulate continued use might include conspicuously posted notices which serve to remind staff and inform patients of the TB method; video access for patients (and staff RNs) that feature TB-led education specific to a particular disease process; and mandatory documentation of responses to training. There may be a benefit to creating a dedicated role of healthcare customer service representative who meets with the individual patients early into their inpatient stay with the intent of identifying patient expectations regarding

their care experiences. Coordinated measures of this variety promote awareness of healthcare providers' intentions, identify patient desires, and aid in sustainability.

Focus on delivering education and later evaluating scores failed to identify the deeper elements of the patient experience that are at the root of satisfaction. The study did uncover a continued need for growth necessary to advance the success of TB and maximize use of HCAHPS data.

Conclusion

RN use of TB-guided patient satisfaction does appear to positively contribute to improved patient HCAHPS scores. However, the performance on the TB survey used around the nurses TB training was questionable, and the extent to which HCAHPS scores report true patient satisfaction is not exactly known. Additional methods must be developed to better detect the desires of patients. What remains apparent is the patients' desire to feel informed and included in every aspect of the patient care experience. To this end, it is important that DNP leaders draw from the successes of past approaches to improve provider performance and promote proficiency. These new methods of improved communication should retire the role of the patients as passive structures in their healthcare experience. The new method for achieving patient satisfaction must consider the sophistication of today's patients and embrace the inclusion of patients as team members who seek to contribute to the decision-making process regarding their healthcare experience.

Appendices

Appendix A
Evidence-Based Practice Model

22   Nurse to Nurse: Evidence-Based Practice

Step 1: Assess the need for change in practice
- Include stakeholders
- Collect internal data about current practice
- Compare external data with internal data
- Identify problem
- Link problem, interventions, and outcomes

Step 2: Locate the best evidence
- Identify types and sources of evidence
- Review research concepts
- Plan the search and review
- Conduct the search

Step 6: Integrate and maintain change in practice
- Communicate recommended change to stakeholders
- Integrate into standards of practice
- Monitor process and outcomes periodically
- Celebrate and disseminate results of project

Step 3: Critically analyze the evidence
- Critically appraise and weigh the evidence
- Synthesize the best evidence
- Assess feasibility, benefits, and risks of new practice

Step 5: Implement and evaluate change in practice
- Implement pilot study
- Evaluate processes, outcomes, and costs
- Develop conclusions and recommendations

Step 4: Design practice change
- Define proposed change
- Identify needed resources
- Design the evaluation of the pilot
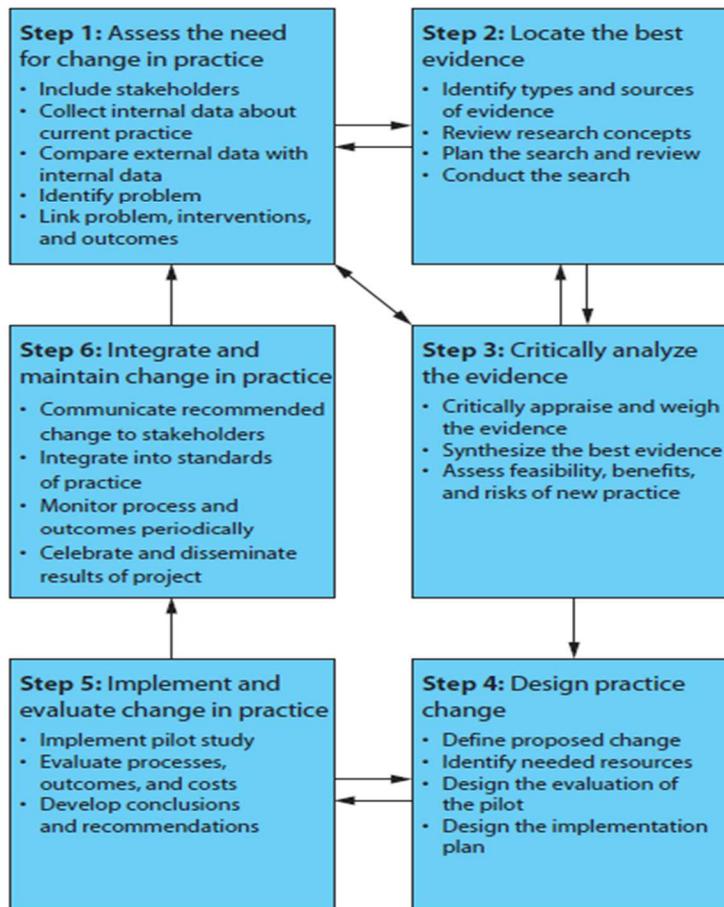- Design the implementation plan

Figure 2-1   Schematic for the Model for Evidence-Based Practice Change. Reprinted modified schematic from Rosswurm MA, Larrabee JH. A model for change to evidence-based practice. *Image J Nurs Sch.* 1999;31(4):317–322, with permission from Blackwell Publishing.

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Teach-Back Training and Assessment Tool
Heidi S. Durden, MSN
Georgetown University
(Instructions: Clearly circle your selections. Only one correct answer per question)

Last 4 Digits of Phone Number: _____
Number of Years (RN) Experience: _____
Educational Level (choose one): Diploma___; Associates ___; Bachelor's __; Master's/Doctorate __
Employment Status (choose one): Full-time _____; Part-time_____

1. The Teach-Back method uses true & false questions to evaluate the patient/client's understanding.
    a. True
    b. False

2. Which response best describes the Teach-Back method?
    a. Teach-Back is used to evaluate the recipient's level of education
    b. Teach-Back is only to be used on English-speaking individuals
    c. Teach-Back should be used for all patient education regardless of the recipient's level of education or age
    d. Teach-Back is not appropriate for blind or visually impaired recipients

3. Teach-Back's Universal Precautions refers to:
    a. The clinicians duty to wash their hands before starting the Teach-Back training
    b. The clinicians duty to wash and glove their hands before starting the Teach-Back training
    c. The clinicians duty to be cautious in protecting the patients PHI in the presence of all other patients
    d. The clinicians duty to use the Teach-Back method for education with all patients
    e. The clinicians duty to recognize cultural differences that affect patient learning

4. Teach-Back is a test of patient comprehension.
    a. True
    b. False

5. The Teach-Back method places the responsibility of communicating clearly on:
    a. The patient, who should inform the clinician if they do not understand the information that has been provided
    b. The clinician provider
    c. The patient and caregiver, who should inform the clinician if they do not understand the information that has been provided.
    d. The clinician and administrative staff that trains the nursing staff

6. Teach-Back uses visual aids:
   a. To allow the clinician to write down what was discussed
   b. To reinforce education
   c. Only for deaf patients
   d. To replace patient teaching for uncooperative patients

7. The client's response to Teach-Back should be documented:
   a. Only at the time of discharge
   b. After each patient education encounter
   c. Only if the caregiver was present for the patient education
   d. After the patient demonstrate understanding of the education

8. Teach-Back should only be used by nurses:
   a. True
   b. False

9. Teach-Back should not be used on nurse, physician, or other healthcare providers who are admitted for patient care.
   a. True
   b. False

10. Teach-Back is a research-based health literacy tool, and it is patient-centered?
    a. True
    b. False

HCAHPS Survey

(adapted from: *HCAHPS Hospital Survey, 2007. Used with permission.*)

#3: "During this hospital stay, how often did the nurses explain things in a way you could understand?"

Choose one: Never, Sometimes, Usually, Always

#16: "Before giving you any new medicine, how often did hospital staff tell you what the medicine was for?"

Choose one: Never, Sometimes, Usually, Always

#17: "Before giving you any new medicine, how often did hospital staff describe possible side effects in a way you could understand?"

Choose one: Never, Sometimes, Usually, Always

#20: "During this hospital stay, did you get information in writing about what symptoms or health problems to look out for after you left the hospital?"

Chose one: No, Yes

#25:   When I left the hospital, I clearly understood the purpose of taking each of my medications.

Choose one: Strongly Disagree, Disagree, Agree, Strongly Agree, Not Given Meds

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