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Improving a medical unit's medication education by integration of a teach-back program

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Improving a Medical Unit's Medication Education by Integration of a Teach-Back Program

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Submitted by __Jolly M. Punchamannil_____ in partial fulfillment of the requirements for the degree of Doctor of Nursing Practice and accepted on behalf of the Faculty of the School of Graduate Studies by the DNP project committee.

We, the undersigned members of the Graduate Faculty of The University of Alabama in Huntsville, certify that we have advised and/or supervised the candidate on the work described in this DNP project. We further certify that we have reviewed the DNP project manuscript and approve it in partial fulfillment of the requirements for the degree of Doctor of Nursing Practice.

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ABSTRACT
The School of Graduate Studies
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Title: Improving a Medical Unit's Medication Education by Integration of a Teach-Back Program

Effective communication is crucial in healthcare, as it plays a major role in patient outcomes. Medication errors, a common occurrence in hospitals, are harmful and costly. The use of effective communication to achieve adequate medication education for patients is key to preventing medication errors and related adverse events. Teach-back method is an excellent approach in verifying that the information has successfully reached the recipient. Using the teach-back approach makes the communication individualized. Individualized communication that addresses patient's concerns and challenges promote trust in the healthcare provider and increase patient satisfaction.

The Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) is a standardized survey tool utilized by hospitals throughout the United States to measure patients' perspectives on hospital care. The HCAHPS survey includes 21 patient perspectives on care relevant in nursing domains such as communication with nurses and communication about medications. The HCAHPS question addressed by this study was related to the nurses teaching patients of new medication and potential side effects.

Teach-back is an evidence-based strategy that has successfully been used to educate individuals of any age or culture. This methodology is suggested and supported by healthcare

accrediting agencies to promote patient-centered care. Teach-back verifies the patient's understanding by asking the patient for a return demonstration regarding the understanding of provided teaching.

This project focused on an acute care facility's consistently low HCAHPS satisfaction scores on medication education. Despite patient medication education provided by nurses, this acute care facility's HCAHPS scores reflected low and erratic patient satisfaction. Guided by the logic model, this process improvement project aimed at improving the nurse to patient communication on a medical unit using the teach-back method.

TABLE OF CONTENTS

List of Tables and Figures

Improving a Medical Unit's Medication Education by Integration of a Teach-Back Program

Effective communication in healthcare settings has a substantial impact on patient satisfaction, quality of care and patient safety (Tamura-Lis, 2013). Adherence to treatment determines the patient outcome; however, this is a joint responsibility of the patient and the healthcare provider (Brown & Bussell, 2011). Patient's adherence to treatment largely depends on patient satisfaction with medication teaching (Bakar, Fahrni, & Khan, 2016). Patient satisfaction with the teaching depends on how well the education was personalized to meet patient needs and principles (Linn, van Weert, van Dijk, Horne, & Smit, 2016). Patient satisfaction and compliance to treatment could be improved by incorporating patients' individual characteristics such as educational level, health-related challenges, and the complexity of medications into medication education (Jin, Kim, & Rhie, 2016). Improving medication education is necessary to improve the organizational performance and patient perception of care as well. Effective medication education increases patient safety, decreases mortality and morbidity, and reduces healthcare costs (Ahrens & Wirges, 2013). Nurses believe they do their best regarding patient education; however available data suggest the patient's perception of the teaching effectiveness is not up to the standards (Van Biesen, van der Veer, Sabine N, Murphey, Loblova, & Davies, 2014).

Problem Background

Since the Centers for Medicare and Medicaid Services [CMS] implemented value-based purchasing [VBP], the acute care facilities are reimbursed based on their performance. According to the VBP, hospitals are paid for the quality of care and not the services (CMS, 2017). In 2017, 75% of a hospital's VBP score is based on clinical care, safety, and efficiency

and cost reduction measures. The other 25% of this score is assigned to patient and caregiver perception of care as measured by the Hospital Consumer Assessment of Healthcare Providers and Systems [HCAHPS] survey (CMS, 2017). The rating scale used in HCAHPS survey is 'never,' 'sometimes,' 'usually,' and 'always.' The hospital's HCAHPS score is based on the percentage of patients who answer "always" to questions that are categorized into eight domains, one of which is nurse communication and education on new medications. Nationally the HCAHPS score on medication education represents the second lowest score among all other areas (Jones & Coke, 2016).

Medication errors are expensive to patients, healthcare, and the nation. A report by the Institute of Medicine [IOM], and the National League for Nursing [NLN] maintained that medication errors lead to 1.5 million injuries annually in the United States [U. S], and treating these mistakes cost the nation $20.9 billion (IOM, 2006). In the U. S, 2% of all inpatients experience a medication error that prolongs their hospital stay by an average of 4.6 days and increases hospital cost by $4700 per admission (Harder et al., 2016). Manias (2010) argued that two third of the hospitalized patients did not know the course or side effects of their medicines. Agency for Healthcare Research and Quality [AHRQ] reported that 40-80% of medication information given to patients was forgotten immediately, and 50% of the retained material is misunderstood or misinterpreted (AHRQ, 2015).

Nursing shifts are so hectic that patient education takes less priority compared to other tasks (Smith & Zsohar, 2013). Mardanian et al. (as cited in Farahani, Mohammadi, Ahmadi, & Mohammadi, 2013) argued that patient education is the 7th priority for nurses compared to other nursing tasks, and done partially or inappropriately which made it ineffective. Bastable (2014) argued that the organizational leaders were not giving high priority to patient education till

recently because patient education has no billing code, and is not considered by third parties in reimbursement. Aghakhani, Nia, Ranjbar and Behesti (2012) reasoned that patient education is not recognized as necessary as other nursing tasks due to the nurses' unawareness of its importance in improving the quality of care, and a lack of interest in engaging in patient education.

Although patient education is fundamental to improving patient outcomes, lack of education is a common patient complaint (Aghakhani, Nia, Ranjbar, Rahbar, & Beheshti, 2012). Healthcare recipients demand more healthcare education, knowledge and skills as they are becoming more aware of the diseases, treatments and their rights (Bastable, 2014). Failure to educate patients regarding medication hampers patient safety (Borgsteede, Karapinar-Çarkit, Hoffmann, Zoer, & Van den Bemt, 2011). Although various education models may be used for patient education, teach-back method has been considered a cost-effective and cost-efficient way of teaching to promote patient engagement in their care (Caplin & Saunders, 2015). Teach-back method makes the communication efficient, verifies understanding, clears misunderstanding, and improves health outcomes.

Limited health literacy is a grave concern in healthcare. According to the National Assessment of Adult Literacy [NAAL], only 12% of the nationals are proficient in health literacy (National Center for Education Statistics, 2004). The Calgary Charter on health literacy defines health literacy as the use of "wide range of skills that improve the ability of people to act on information to live healthier lives. These skills include reading, writing, listening, speaking, numeracy, and critical analysis, as well as communication and interaction skills." (Coleman et al., 2011, page 1). Health literacy affects all racial and ethnic groups. Nearly half of all U.S adults have low health literacy (Sawkin et al., 2015). Over a third of all adults in the nation have

difficulty using the commonly available health information (Sawkin et al., 2015). Health information is written at a higher level that makes it hard for the public to read and understand.(Stossel, Segar, Gliatto, Fallar, & Karani, 2012). Limited health literacy together with the scarcity of health information at a basic literacy level could challenge the healthcare professionals in efficiently educating the patients.

Patient perception of lack of medication teaching has been a challenge in healthcare (Jones & Coke, 2016). Studies done in various countries on medication teaching found that the patients' understanding of side effects of medication is consistently low (Jones & Coke, 2016). Patient's ability to recall the information given depends on the individual, information, and communication (Richard, Glaser, & Lussier, 2016). Patient's literacy level, physical and emotional status, characteristics of information, and the communication skill of the provider could influence the extent of recall. Encouraging communication and involving the patient in discussions promotes shared interest and empowerment (Richard et al., 2016). Despite the requirement of patient education as a standard of nursing practice, and the efficiency of the teach-back approach on patient outcomes, studies demonstrate the practice in hospitals is inconsistent (White, Garbez, Carroll, Brinker, & Howie-Esquivel, 2013).

A systematic review of articles on patient education found that patient teaching was ineffective and inconsistent despite the nurses' belief it was a primary constituent of their job (Friberb, Granum, & Bergh, 2012). A New York-based study of patients at the time of discharge found that 37.2 % of patients knew about the indication of medication, whereas only 14% knew about the side effects (Makaryus & Friedman, 2005). Another study of 100 discharged patients from an internal medicine residency program found that the 86% of patients knew that they were

prescribed new medications, while only 11% could remember receiving information on side effects (Maniaci, Heckman, & Dawson, 2008).

Approximately half of the U. S adults live with chronic diseases (Centers for Disease Prevention and Control, 2017). Chronic diseases require medications and rehabilitation to maintain life quality. The necessity of continuation of treatment require nurses to give more importance to patient education to make them self-manage their health conditions; however only personalized education is beneficial in bringing positive outcomes (Murdock & Griffin, 2013). Considering patient's physical and emotional characteristics, culture and beliefs, learning style, living environment, and the settings makes the education personalized and improves the effectiveness of education. The inclusion of patient family in teaching is also an essential aspect of patient education. Effective education keeps the patient informed of care, which promotes the trust in healthcare and improves patient satisfaction (Murdock & Griffin, 2013).

In the medical unit of a large healthcare facility in southwest Texas, the patient teaching on medication indications, and side effects are low and unpredictable. This has been echoed in patients' responses to the post-discharge satisfaction question: "Before giving you any new medicine, how often did the staff tell you what the medicine was for", and "did they describe possible side effects in a way you could understand?" (HCAHPS, 2017). The problem identified in this quality improvement [QI] project was the low and inconsistent patient satisfaction scores on medication teachings rebounded from the survey. Daily leader rounds with the patients, and the observation of nurses also have provided evidence of inadequate teaching.

Purpose statement

Caring with respect, and demonstrating an interest in their well-being meets the patients' expectation of care and improves their satisfaction. Satisfied patients are compliant with

medications and treatments, and have fewer occurrences of readmissions (Mehta, 2015). In the current healthcare arena, patient satisfaction reflects the quality of care, and the hospitals are reimbursed or penalized based on patient satisfaction (CMS, 2013). This policy has made patient satisfaction a top priority by many hospitals. With current changes in healthcare policies and reimbursement based on performance, it has become important to improve the patient satisfaction to get maximum reimbursement. Low patient satisfaction on medication education is a big challenge for healthcare providers. Stakeholders prefer high patient satisfaction in an organization as it represents strong leadership, compliance with clinical standards, working conditions, and ongoing quality improvement process (Mehta, 2015). An integrative review of articles by Friberg and colleagues (2012) found that nurses lack confidence in teaching. Bastable (2014) argues that the nursing curriculum require revisions to prepare the nurses in the role of patient educators. Various other studies also claim on nurses' lack of competency in assessing the patients' health literacy and making education individualized (Coleman, Hudson, & Maine, 2013; Tamura-Lis, 2013). The purpose of this project was to fill the gap between the available knowledge and the current practice of patient teaching by educating the nurses on teach-back method to integrate it in the patient medication education and evaluate its' effect. The teach-back toolkit by the AHRQ provided the guidance for the independent variable. The dependent variables in this project were the nurses' competency and the patient satisfaction on medication teachings. The dependent variables were measured by surveys of nurses on their competency, AHRQ's conviction and confidence survey, and the patient satisfaction as measured by the HCAHPS survey.

PICOT Question

The PICOT question is:

What is the effect of the integration of a teach-back method into medication teaching on a medical unit of an acute care facility on patient satisfaction of medication teaching, compared to the routine practice of nurse stating the medicine and side effects each time?

Project Objectives

The objectives of the project are:

1. Seventy percent of nurses will complete the pre and post survey on competency in teach-back.
2. Seventy percent of the nurses of the medical unit of Methodist hospital will attend the teach-back education classes.
3. Seventy percent of the nurses working in the medical unit of Methodist hospital will use the teach-back method for medication teaching.
4. Ten percent of nurses working in the medical unit of the Methodist Hospital will be trained as super users of teach-back method.
5. HCAHPS score on medication communication by nurses will reach 75% in four months**.**

Definition of concepts

The concepts that would be discussed in the project include teach-back method, patient education, medication communication (education), patient satisfaction, and HCAHPS survey.

Teach-Back Method

Teach-back approach is a strategy that promotes patient-centered care. It is also called "closing the loop" or "show-me' method and validates the patient understanding by saying back or demonstrating the learning (Missouri Hospital Association., 2015). In the teach-back

approach, the provider uses plain language and short statements, while speaking slowly and clearly (AHRQ, 2015). Information given at a time is limited to less than three ideas. In the teach-back method, all the questions asked are open-ended to promote communication (AHRQ, 2015; Tamura-Lis, 2013). Questions and remarks used in teach-back are framed to encourage discussion, and to avoid the patient perception of being judgmental or lofty.

Patient Satisfaction

Patient satisfaction represents the expression of patient's perception of the quality of care received compared to their expectation. The interpersonal relationship developed between the provider and the patient is a crucial factor in patient satisfaction (Al-Abri & Al-Baluchi, 2014). Treating a patient with respect and demonstrating an interest in their well-being meets their expectation of care and improves their satisfaction with care. Satisfied patients are compliant with medications and treatments, and have fewer incidents of readmissions (Mehta, 2015), which makes patient satisfaction an important indicator of the quality of care and patient outcomes.

HCAHPS survey

The commonly used survey that measures patient perception of care is Press Ganey. This survey integrates the previously used HCAHPS survey to provide more qualitative results by surveying how well a service was provided than how often it was offered (PressGaney, 2015). HCAHPS is a standardized national survey tool that measures patients' perspective of care. The survey results are publically reported and provide information for the organizations to compare their performance with the national benchmark (CMS, 2016). In this article, HCAHPS and Press Ganey are interchangeably used, as the facility uses a combined version of Press Ganey and HCAHPS surveys (personal communication, Roberta Tremper, Vice President of clinical operations, October 1, 2016).

Patient Education

Patient education is a process of assisting people to learn health-related activities with the intention of making them independent of caring for themselves to accomplish optimum health (Bastable, 2014). According to Manias (2010), effective education occurs when the responsibility of teaching and learning is shared between the patient, family, caregivers, and healthcare provider. The defining feature of patient education is the effectiveness of teaching. Six characteristics of effective education are identifying the individuals who are leading the discussion, identifying the one who is silent and the reasons for silence, making the conversation patient-centered, prioritizing the teaching based on patient's needs, using open body language that values patient opinions and using simple language to educate. The factors that could influence the effectivity of education and patient and family engagement are the cultural and personal factors, and the environment of the healthcare organization (Manias, 2010).

Medication Education

Miller Keane Encyclopedia (2003) describes teaching as purposeful teaching based on identified teaching needs to maintain, or improve knowledge, skills, behavior or beliefs, and prescribed medication teaching as a nursing intervention of coaching a patient to be competent in taking the medicines safely. In simple words, medication education is teaching the patient about the medication and medication safety in a way it is understood.

Assumptions

The central assumption to the project was that nurses accept the teaching as a primary function of their job and spent time in the education; however, the patients conceive the teaching inadequate. Teach-back is an evidence-based strategy that verifies patient understanding. Since teach-back method is supported by healthcare maintenance organizations such as American

Academy of Family Physicians, American College of Surgeons, Agency for Healthcare Research and Quality, American Hospital Associations [AHA], American Medical Association [AMA], American Nursing Association [ANA], Institute for Healthcare Improvement [IHI], National Quality Forum [NQF] and The Joint Commission [TJC] as an evidence-based practice to verify patient understanding, it was assumed that teach-back should be a standard of practice for patient education (AHRQ, 2015; IHI, 2016; Mahramus et al., 2014; Milner-Fenwick White Paper, 2016; TJC, 2007). The DNP student also assumed that nurses are committed to continuous learning and evidence-based practices to promote patient care and to meet the ongoing healthcare challenges. Since the organization is committed to excellence in care with a vision of becoming a world-class provider, it was assumed that this doctoral student would get the full support from the organizational leaders.

Significance of the project

This quality improvement project is aimed at improving nursing competency on patient education and promoting patient teaching as a standard of practice within the organization. Patient education enhances health literacy and enables the patient to take ownership of own health and health decisions. Medication teaching promotes patient-centered care which leads to increased patient engagement in self-care, adherence to medication, decreased medication errors, and complications and readmissions. The increased satisfaction of patients in the care received from a hospital brings increased reputation and incentives to hospitals, and reduces penalties and healthcare costs (Peter et al., 2015). This project supports the Quality and Safety Education for Nurses (QSEN) by Robert Wood Johnson Foundation. The QSEN prepares the nurses to have the knowledge, skills, and attitude (KSA) to be competent in patient-centered care, teamwork and collaboration, evidence-based practice, quality improvement, safety, and informatics

(Pollard et al., 2014). Implementing teach-back as the standard of practice aligns with recognized national guidelines in promoting patient and family-centered communication. The Picker Institute has recommended the practice of teach-back as an "Always Event," whereas the National Quality Forum [NQF] suggested it as one of 50 essential practices to bring optimum patient outcomes (Fidyk, Ventura, & Green, 2014).

Professional nursing practice translates research findings and best evidence into clinical practice. This project supported the essentials of baccalaureate nursing education developed by American Association of Colleges of Nursing [AACN]. The essentials supported by this project are: (a) leadership for the quality of care and patient safety; (b) scholarship for evidence-based practice; (c) information management and application of patient care technology; (d) inter-professional communication and collaboration for clinical prevention; and (e) practice of professional values. These essentials mandated nurses to identify gaps in practice and to improve quality of nursing practices based on available best practices and disseminate the results (AACN, 2009).

This quality improvement project reinforced the Code of Ethics for Nurses. The Code of Ethics was developed by American Nurses Association to inform and guide the nurses in practicing quality care that is supported by professional morale (Winland-Brown, Lachman, & Swanson, 2015). According to the third provision of Code of Ethics, the nurse promotes, advocates and protects the rights, health, and safety of the patient. The fourth interpretive statement of the third provision of the Code addresses the nurses' responsibility to promote safety. This provision of the Code holds the nurses accountable and responsible for assuring patient safety (Winland-Brown et al., 2015). Coaching the patient on medication and side effects promote patient's knowledge of expected and unexpected outcomes of treatment and promote

compliance to treatment. Being knowledgeable about the medicines, the patient can recognize the warning symptoms of the ineffectiveness of medications, and when to contact the physician. The fifth statement of the fourth provision requires nurses to question unsafe practices to improve patient safety. The fifth provision of Code of Ethics highlights the importance of maintaining competence and commitment to professional growth (Lachman, Swanson, & Winland-Brown, 2015). This provision urges nurses to be committed to professional growth, which includes the practice of best evidence. Provision seven of the Code of Ethics holds the nurses accountable to know the research findings and best practices and to formulate, practice, maintain and implement professional standards of practice (Lachman et al., 2015).

The Joint Commission addresses medication safety as one of its national patient safety goals [NPSG] (TJC, 2016). According to NPSG 03.06, the nurse is required to teach the patient about their medicines accurately. This rule mandates the nurse to give written information on medications that are to be taken at home. The nurses are also required to teach the patient about the importance of maintaining and communicating medication information to healthcare providers to assure safety with dosage changes or addition of medicines or over the counter medication usage. NPSG 03.06.04 (2013) explains the medication management of self-administered medicines. At discharge, the patient should know the name, type, and reason for the use of the medicines that will be continued at home. The other indicators of patient education include knowledge regarding the medications that will be taken at home and how to take the medicines (process, time, dose, frequency, and route), monitoring for expected outcome, and possible side effects.

In healthcare, nurses are recognized as patient advocates. Nurses have an ethical responsibility to patients to provide health teachings and verify their understanding. Healthcare

is continuously evolving due to rapid changes in technology and health policies. National health literacy is low, and the health information is difficult to obtain or comprehend. Health information is widely available, and many are not from reliable sources. Patients have difficulty in identifying which sources are credible. People are living longer. Chronic diseases are prevalent, and patients are on multiple medications (CDC, 2015). Becoming competent in the teach-back method, and educating the patients on their medication contributes to nurses' role as a patient advocate.

Summary

Patient teaching is an essential aspect of nursing. National patient safety goals of 2017 mandates that patients be instructed on medications that are to be continued at home (TJC, 2017). Discharged patients are surveyed by CMS on medication teaching by nurses. Teach-back has been demonstrated as an effective method of teaching patients of all age, culture and literacy level. This method has been endorsed by all major healthcare accrediting and maintenance organizations in promoting the patient teaching of health information. Teach-back approach supports the QSEN competency education for nurses and the role of the nurse as a patient advocate. Teach-back complies with the ANA's Code of Ethics and TJC's national patient safety goals in supporting quality of care and patient safety. Teach-back method promotes patient-centered care and patient advocacy. Despite the evidence on its efficiency and positive outcomes, teach-back has not been adopted as a standardized practice in many organizations. This QI project used an evidence-based practice model to integrate teach-back method in patient teaching by coaching the staff nurses the teach-back method to promote patient satisfaction on medication teaching.

Review of the Evidence

Patient teaching is a fundamental aspect of nursing. Effective patient teaching has many advantages. Efficient teaching requires commitment and skills. Without effective teaching, healthcare outcomes may not be optimal. In today's healthcare arena nurses are faced with many challenges in providing effective teaching to patients and families. Nursing shifts may be so hectic, that nurses tend to make education a less priority, and concentrate more on other nursing tasks and procedures. These busy nursing work hours makes patient teachings unidirectional and fails to evaluate the patient's understanding of the teaching. Effective teaching could influence all aspects of patient care and may have long-lasting effects on patient outcomes.

A multi-step strategy was used for finding the articles on teach-back approach. An initial literature search was done from Journal/Author Name Estimator (JANE Semantics) using the word "teach-back" to find articles that were published between 2012 and 2017. The selected articles were searched in CINAHL, PubMed, Scopus, and Cochrane library for abstracts which yielded 22 articles. The search criteria concentrated on articles that studied the effectiveness of teach-back method on various chronic illness, readmission, health literacy, knowledge retention, compliance, medication compliance, treatment adherence, self-management, self-efficacy, and quality of life. In addition to the database search, a web-based search of public and private healthcare maintaining and accrediting organizations' policies and guidelines were done to find the best practices and recommendations on health literacy, patient education, and teach-back. The most searched organizations are the Institute for Healthcare Improvement [IHI], The Joint Commission [TJC], Agency for Healthcare Research and Quality [AHRQ], Robert Wood Johnson Foundation [RWJF], National Quality Forum [NQF], Centers for Medicare and Medicaid Services [CMS], and the Institute of Medicine [IOM]. Although the search revealed

22 articles on teach-back, they were mostly related to different aspects of health, and no article was published relating solely to patient satisfaction on medication teaching.

Numerous studies recommend teach-back as an effective tool in teaching complex material and verify understanding (DeWalt et al., 2010). AHRQ argues that this approach builds trust in the healthcare provider and increases the satisfaction of the patient (2015). Tingle (2014) in a study about healthcare in the United Kingdom, asserted that miscommunication and misconceptions are reduced by using the teach-back approach in educating the patients. Portz and Johnston (2014) conducted a study among the oncology patients to evaluate the effectiveness of teach-back method session and found significant improvement in patient satisfaction with care compared to the effectiveness of routine teaching practice. In another study of 44 children with asthma, Badaczewski and colleagues (2017) studied the effect of teach-back in children with asthma, and found that effective teach-back occurred only in 39% of encounters; however, those who received instructions using teach-back method demonstrated improved communication and engagement in self-care. These authors suggested standardizing the teach-back approach in coaching for more positive outcomes (Badaczewski et al., 2017). Porter et al. (2016) studied the effect of health literacy in patients' ability to self-monitor and perform diet and activities found that teach-back improves these outcomes in people with low health literacy. Nouri and Rudd (2015) conducted a systematic review of 12 articles on communication in healthcare and found inconsistency in the provider to patient teaching. They stated that a high literacy demand affected the patient learning negatively which led to poor patient outcomes. The authors assumed this variation of health-related knowledge might be changed with improved communication using the teach-back approach.

Ha Dinh, Bonner, Clark, Ramsbotham, and Hines (2016), in a systematic review of 12 articles found that using teach-back methodology in patient education improved adherence to diet and medication among type 2 diabetes patients. Other outcomes of this study were increased knowledge retention, adherence to diet and treatment, self-efficacy and management, and reduced readmissions. However, this study failed to support any positive outcomes on quality of life and suggested future studies on this variable. A randomized controlled study was done on 127 low literacy patients with type 2 diabetes using three strategies: teach-back, pictorial image, and control groups revealed that both the interventions were effective in improving adherence to diet and medication. Both of the interventional groups received individual sessions of teachings for 20 minutes weekly for three weeks. The control group received pamphlets on diabetes control, and any questions or concerns were answered by the interventional nurse. A statistical analysis of the effectiveness of interventions discovered a statistically significant improvement in knowledge, and adherence to medication with both intervention groups ($p=<0.05$) (Negarandeh, Mahmmoodi, Noktehdan, Heshmat, & Shakibazzadeh, 2013).

A prospective cohort study at University of California hospitals on the effect of the teach-back method on heart failure patients concluded that it improved retention of teaching material in heart failure patients during the hospital stay and up to eight days after discharge. The participants in this study were elderly patients, who were independent of their activities of daily living [ADL]. Although the teach-back approach had a positive impact on learning, no change in readmission rate was found in this study (White et al., 2013). However, an Arkansas based out-patient study of 23 high-risk heart failure patients reported a 12% reduction in 30- day readmissions when they were educated using teach-back method (Haney & Shepherd, 2014). Peter and colleagues (2015) studied the effect of teach-back approach in patient education in

reducing readmissions in heart failure patients in **a** territory Magnet hospital. In this study, 200 participants were taught on attitudes, behaviors, and identified teaching needs using teach-back method. The study resulted in improved patient satisfaction, handover communication, decreased hospital stay and decline in readmissions (Peter et al., 2015). Likewise, an Iran based randomized controlled trial of 70 patients with myocardial infarction found an increased quality of life, when the participants were given three sessions of 45 minutes education on self-care activities using teach-back method (Mohsen, Behnaz, Mahnaz, & Alireza, 2017).

A large community hospital in Florida reported improved patient satisfaction among heart failure patients when a teach-back method was incorporated into medication teachings in medication teachings in heart failure patients (Putney & Kelly, 2015). In this study, the cardiac educator and the heart failure coordinator of the hospital initiated a nurse education program to train the nurses on teach-back strategy, which included classroom lectures, video, discussion and role play related to heart failure. After gaining competency, the nurses started teaching the patients using teach-back method. Patient satisfaction with medication-related education was measured by analyzing the pre and post implementation HCAHPS Survey results pertinent to medication teaching. The percentage of patients who answered 'always' to the medication teaching increased from 56% to 67% with a statistically significant difference (p=.01) and a clinically meaningful improvement in discharge instruction from 79% to 96% (Putney & Kelly, 2015).

A randomized controlled study of Chronic Obstructive Pulmonary Disease [COPD] on the use of metered dose inhalers was done in Chicago using the brief intervention [BI] and teach to goal [TTG] interventions. The brief intervention included one-time verbal instructions and a printed material explaining the steps of use. The TTG was aimed at teaching the patient till the

patient was able to do a proper return demonstration of the inhaler use. This study revealed that the patients who were trained using the TTG intervention demonstrated the more efficient use of inhalers compared to the BI group (Press et al., 2012; Press et al., 2017). Another systemic review of nine studies reported improved correct usage of metered dose inhalers in COPD patients when teach-back methodology was used in patient education (Dantic, 2014). However, the researcher suggested future studies to understand the long-term effect of teach-back in patients with COPD.

A study conducted on the discharge process of emergency departments (ED) of two tertiary health centers (pediatric and adult) on the impact of a teach-back method on discharge instructions of asthma confirmed the effectiveness of teach-back in promoting provider to patient communication and retention of learning by the patient. People with low literacy thought teach-back approach as condescending, although they gave valuable suggestion to avoid this perception (Samuels-Kalow, Hardy, Rhodes, & Mollen, 2016). The authors suggested future studies using wordings that were suggested by patients.

A recent study combining discharge bundle with teach-back reported 8% reduction in 7-day readmission and 10% reduction in 30-day readmission among children admitted to a large urban tertiary pediatric hospital (Shermont, Pignataro, Humphrey, & Bukoye, 2016). Peter et al. (2015) reported reduced readmissions and decreased hospital stay in heart failure patients in a Magnet hospital with the use of a teach-back method. When a teach-back method in conjunction with scheduling of follow up appointments was used among 189 post coronary artery bypass patients, the 30-day readmissions were reduced from 25% to 12% (Bates, O'Connor, Dunn, & Hasenau, 2014).

A quality improvement process that incorporated teach-back method into discharge education of total joint replacements demonstrated increased patient compliance with pain management, anticoagulation, and physical therapy when the intervention was supplemented with follow up post-discharge calls (Darcy, Murphy, & DeSanto-Madeya, 2014). When a teach-back method was used in veterans for discharge teachings in total joint replacement patients, the 30-day readmission was reduced by 36% (Green, Dearmon, & Taggart, 2015). Both the authors suggested complementing the in-hospital teach-back of discharge instructions with post-discharge calls for better outcomes.

A New Jersey-based study on the effect of teach-back on HCAHPS scores on discharge information demonstrated increased knowledge of teaching by nurses when they underwent an hour teach-back class using various modalities of teaching. The nurses found teach-back method effective and supported its' effectiveness on patient education. Although the HCAHPS scores went high on discharge teaching with this process, the overall patient satisfaction did not show any significant improvement on medication teaching. The authors suggest further studies to determine the effect of teach-back (Centrella-Nigro & Alexander, 2017).

When nurses practiced teach-back methodology in discharge teaching of children, 98% of the study group thought that the patients and families understood the discharge instruction better. Fifty-eight percent felt that they were able to clarify miscommunication on medication with the use of teach-back. Although the study claimed safer transition from hospital to home, the authors suggested future studies to identify barriers in using teach-back (Kornburger, Gibson, Sadowski, Maletta, & Klingbeil, 2013). Nursing students retained more information and felt more confident in the patient teaching of heart failure when they were peer taught using teach-back as one strategy (Avallone & Cantwell, 2016). Mahramus et al. (2014) used teach-back as

an intervention to educate nurses on self-care principles of heart failure found increased knowledge, retention of material and proficiency in practice.

Conceptual and Theoretical Framework

The logic model provided the framework for the project and summarized the project into one document to increase communication, teamwork, and clearness of ideas among the participants (Goeschel, Weiss, & Pronovost, 2012). This framework outlined the links between resources, activities, and outcomes specific to this project, and promotes critical thinking in planning the resources (Royse et al., 2016). Logic model promoted transparency in communication and provided an opportunity for the organizational leaders to recognize the resources available, and to involve in the management in the continuum of the project (Hayes, Parchman, & Howard, 2011; Royse et al., 2016). The logic model was created in the planning stage to assess the resources and plan the process to bring out the expected outcome. Once the project got initiated, the only resource required was time to educate the nurses and train super users or to-go persons, to support its proper practice and ongoing. The process included surveying the nurses on their competency in patient education, educating the nurses on how to effectively use the available resources, teaching them in groups and in a one-to-one session, and monitoring and supporting their practice on the teach-back method. Outputs included the participation of nurses in the surveys and the teachings. Immediate short-term outcomes identified in the model were a self-reported increase in competency in patient education, improved usage of resources in patient teaching, and patient verbalization of increased medication communication on daily leader rounds. The long-term outcomes were analyzed based on post-discharge calls and HCAHPS survey.

Rosswurm and Larrabee's evidence-based practice model (Appendix A) was utilized as the theoretical framework for this study. Evidence-based practice [EBP] is a frequently used term in nursing, especially in quality improvement projects. EBP help nurses to use the best

available practices to fill the gap between research, theory, and practice (McEwen & Wills, 2014). The Sigma Theta Tau defines EBP as "integration of the best evidence available, nursing expertise, and the values and preferences of the individuals, families, and communities who are served" (Sigma Theta Tau, 2005, para 4). Ingersoll describes EBP as "the conscientious, explicit, and judicious use of theory-derived, research-based information in making care delivery to individuals or groups of patients and in consideration of individual needs and preferences" (Ingersoll, 2000, p 151).

Use of EBP models guide the nurses in an organized method of problem-solving, which saves time and resources. Through the implementation of high-quality care, EBP promotes patient safety and outcomes (Melnyk & Fineout-Overholt, 2015). There are many EBP models available, and these models vary in their steps and have its benefits and drawbacks. The selection of one over the other model mostly depends on the applicability of the model to the institutional needs and practice environment. Although the EBP models differ, their main domains remain the same: clinical expertise, research evidence and patient preferences in guiding the practice (Hall & Roussel, 2014). The stages of EBP may differ in steps, level of detail, and types of evidence-based practices on the required changes (Hall & Roussel, 2014). Despite the positive effects of practicing EBP, it is not employed regularly by healthcare professionals (Melnyk & Fineout-Overholt, 2015). IOM recommends that 90% of practices in healthcare should base on evidence by 2020 (Connor, Dwyer, & Oliveira, 2016). Barriers in practicing EBP could be related to reasons that are individual to nurses or organizational. The nurse-related barriers include lack of knowledge about the EBP, lack of time to search for EBP and the lack of authority to change the practice. Identified organizational barriers are lack of resources, administrative support, leadership, mentorship and lack of budget (Connor et al.,

2016). Overwhelming patient loads, patients' preference to treatments, peer pressure to continue the traditional methods, inadequate content and skills regarding EBP in nursing education are other factors that challenge practices based on evidence (Melnyk & Fineout-Overholt, 2015). Factors that facilitate EBP are an organizational culture that supports EBP, availability of resources, colleague support, and mentorship (Melnyk & Fineout-Overholt, 2015). Availability of resources and organizational support in implementing EBP makes the positive environment for practice change by addressing the barriers.

Rosswurm and Larrabee's model incorporates research literature, research utilization, standard language and change theory in developing the EBP model. This model is suitable for acute care settings, and starts with the identification of a problem and ends with an integration of an evidence-based protocol (Melnyk & Fineout-Overholt, 2015). The identified need for a change in this model comes from comparing organizational data with external data such as national benchmarks (Gawlinski & Rutledge, 2008). Following identification of the problem, the evidence is sought on available best practices to solve the problem, and the most suitable practice is adopted, and a protocol for implementation is developed and tested. The staff adherence to the protocol and the outcome of the process is measured to analyze the effect of the QI project. In this QI project, the identified need came from comparing the patient satisfaction scores of the organization on medication teaching with the national benchmarks. Based on patient reports and direct observation of practice, the cause of the below standard performance was recognized as the nurses' overestimation of their teaching practice, and patients' health literacy. As the next step, the problem of low patient satisfaction was linked to the sub-standard communication style in practice. When research articles were searched for interventions to promote communication, the teach-back method was identified as the best strategy for promoting

discussion and patient teaching. A practice change was designed and conveyed to the organizational leaders using a logic model. The leaders approved implementing the intervention to change the practice.

Implementation

This DNP student met with the vice president of clinical operations of the facility on identifying the challenges of the organization related to health literacy with the goal of conducting a quality improvement project based on evidence-based practices. The preceptor verbalized that one of the units in the facility has consistently low patient satisfaction in medication communication by nurses. The concern was identified by HCAHPS surveys, leader rounds, and post-discharge calls. Data collection from the HCAHPS surveys were reviewed and found low and inconsistent patient satisfaction on medication education (Appendix B). Teach-back method was introduced to this unit by this DNP student in the previous year (April 2016-August 2016) which resulted in positive responses from patients. The teach-back practice continued less than two months after initiation, and then the satisfaction dropped towards the fourth quarter of 2016. The DNP student analyzed literature further for other evidence-based practices on improving communication, though found that the teach-back method as the most appropriate EBP in promoting communication in all age groups and cultures. The DNP student also learned that it is difficult for the nurses to get the practice correct, and more than 80% of healthcare providers who claim to practice teach-back are not using open-ended questions to promote communication (Milner-Fenwick White Paper, 2016). Kemp, Floyd, McCord-Duncan and Lang (2008) argued that only two percent of healthcare providers reassess patient understanding after providing information. Another study among the medical students found that only 10% of the 74 participants were confident in their ability to teach using teach-back to

educate low health literacy patients, despite some previous training in teach-back method (Ali, Ferguson, Mitha, & Hanlon, 2014). These authors claim that the medical students overestimate their skills in the teach-back method. Kemp and colleagues (2008) claimed that teach-back method of coaching was perceived as the most preferred method of learning by patients. These claims convinced the DNP student to consider re-educating the nurses on teach-back approach in coaching the patients on medications.

The preceptor arranged an initial meeting for the DNP student with the unit director, nurse manager and educators to discuss the planned quality improvement [QI] project. The preceptor requested the nursing director of the unit to support the DNP student in analyzing the situation and implementing a quality improvement project on medication teaching to improve patient satisfaction. The DNP student prepared a logic model (Appendix C) on planned interventions and expected outcomes, and discussed it with the preceptor and the unit director. After getting the approval from the preceptor and the unit director, the doctoral student met the nursing staff in a staff meeting and explained the proposed plan, its implementation details and the features of the teach-back method.

The QI project was introduced to the unit in May 2017. The project's expected timeline was 6 months (Appendix D). Twenty-eight out of the forty-two nurses (67%) participated in the survey that studied the nurses' perceived competency on teach-back method (Appendix E). From the last week of May until end of June 2017, the nurses were observed and taught on a one-to-one basis on the use of teach-back methodology. This author was able to observe and teach 34 nurses on a one to one basis, which included float nurses from other units. Two weeks after the initial observation and teaching, the DNP student followed randomly selected nurses to validate the practice of the teach-back method (Appendix F). Three months after the

implementation of the intervention, the nurses completed two online surveys. These surveys used the conviction and confidence scale developed by IHI (Appendix G permission to use and Appendix H) and the initial competency questionnaire as a post-survey. This post-survey on competency was done to assess the effect of the group and one-to-one teachings of nurses. Twenty-four of the original 28 nurses completed these surveys.

Settings

The quality improvement process was implemented in a medical unit of an acute care hospital with a mission and vision that supports growth and quality. The macro system has nine acute care facilities and 27 outpatient clinics providing healthcare to San Antonio and 26 surrounding counties. The mesosystem is 1000 bed capacity multi-specialty hospital. The existence of the organization is focused on providing safe and efficient patient care that is cost-effective. The organization's vision is to become a world-class healthcare provider (Methodist Healthcare Systems, 2015). The particular unit where the project was piloted is a 44-bed capacity medical unit that admits adult patients with medical conditions. This organization is considered the most preferred healthcare system of south Texas. The unit employed 42 and racial and ethnic diverse nurses, including six male nurses (Appendix I Nurses' demographics). More than half of these nurses were baccalaureate prepared and had less than five years of experience with many being recent graduates. The nurses were in the 25-55 age group, and approximately 15% of them were foreign nurses who had their nursing training outside the U. S. An unanticipated leadership change occurred a month before the implementation of the QI project, which followed a huge staff turnover.

This unit admits adult patients of both genders with chronic diseases such as diabetes, heart diseases, stroke, chronic obstructive pulmonary diseases, pneumonia, liver cirrhosis, and

autoimmune diseases. A good number of these patients were taking herbal and vitamin supplements in addition to their prescribed medicines. The patient population of the unit mimicked the south Texas population: 66% Hispanics. The organizational mission and vision supported ongoing training of staff and encouraged implementation of quality and performance improvement practices.

SWOT Analysis

A SWOT (Strength, Weakness, Opportunities, and Threat) analysis studies an organizations' internal strengths and weaknesses, and the potential external opportunities and threats. SWOT analysis helps in making the maximum use of the strengths, and available opportunities to overcome the weakness and threats (von Kodolitsch et al., 2015). A SWOT analysis helps in decision making by uncovering the strengths and weaknesses and is often done at the start of a strategic plan.

A SWOT analysis revealed the following:

The strengths of the organization specific to implementing the teach-back method are the use of electronic medication administration records (EMAR), pharmacy and laboratory interfaced medication screens, resources such as clinical pharmacology and interactive health education via television. Daily leader rounds to identify patient needs, post-discharge calls, use of patient portals for information dissemination, and participation in HCAHPS survey also assist in identifying, and meeting patient's education needs.

The weaknesses identified were high acuity patients, shorter hospital stays, fast turnover of patients, physical and emotional condition of patients, heavy workload, increased nursing turnover and incompetency in using teach-back method (Roberta Tremper, Vice- President of the clinical operations, personal communication, June 8, 2016). While the patient-related factors

lead to incomplete and ineffective teachings, the nurse related factors result in varying practices, miscommunication and lack of appropriate patient education.

The opportunities identified were the reputation of the organization, performance-based reimbursements, penalization for poor outcomes, changes in health policies that promote preventive care, advances in information technology, the involvement of case managers and pharmacists in education, leader rounds to include identification of high risk-patients for poor literacy and post-discharge phone calls.

Identified threats were language barriers, cultural differences, inadequate health literacy, chronic diseases and comorbidities, health disparity, and lack of family and social supports (Roberta Tremper, Vice president of clinical operations, personal communication, June 8, 2016).

Project Methodology

The quality improvement project of integrating a teach-back method was framed using the logic model. The Institutional Review Board of University of Alabama at Huntsville (UAH) and the Methodist Healthcare System (MHS) approved the project and exempted it from a research study (Appendix J). The IRB of UAH recommended that the participants assent to the project and the nurses were informed in the staff meeting that the participation in the project is voluntary. The project was presented to the system leaders, and then to the nurses of the medical unit. The project period was scheduled to start in May 2017 and end in October 2017. It was proposed that the DNP student would get four months of data after the initiation of the QI project. This facility has the privilege of retrieving the patient satisfaction (HCAHPS) scores on a monthly basis.

Participants

The organization requested all nurses of the unit be taught on the teach-back method to make it a standard of practice (Appendix K Teaching Plan). All the nurses that provided direct patient care were included as participants in the project. The exclusion criteria were nurse director, nurse manager, case manager, and throughput nurses who were not involved in direct patient care. One nurse felt that she was competent in patient education and did not show interest in the project; thus exempted per the recommendation of IRB of UAH. The unit employed 42 nurses at the time the QI project was introduced- six male nurses and 36 female nurses, and more than half of them had less than three years' experience. The nurses represented various racial and ethnical groups and were in 25-55 age group. More than half of the nurses on this unit were baccalaureate-prepared. Out of all the units in this facility, this unit had the most culturally diverse nurses to include international nurses on contract. These contracted nurses

were brought legally to the U.S by agencies and were supplied to the organization on a 2-3 years contract. Out of the 42 nurses on the unit, five nurses were charge nurses, and could not be observed in their practice of medication teaching; however, they were taught on the method. By July 2017, five nurses had either resigned or moved to different units and were not available for the project. During July to August, eight new nurses joined the unit. All these new nurses went through the residency program and were not available for the DNP student to educate, however, taught by the preceptors. The preceptors of this unit were specially trained and certified in precepting by the organization, and their competency on teach-back method was verified during one to one observation. This unit also has experienced a change in leadership a month before the implementation of the project.

The patient population of this unit represented the San Antonio population, which is two-third Hispanics. The other one third included Caucasians, African American, and Asian minorities. The common diagnoses of the patients admitted to this unit are diabetes, chronic obstructive pulmonary disease, Ischemic heart disease, heart failure, stroke, liver cirrhosis, gastrointestinal disorders and infections like pneumonia and urinary tract infections. A few of these patients also have super infections with methicillin-resistant Staphylococcus Aureus (MRSA) and Clostridium difficile (C-diff).

Measures

HCAHPS survey instrument was used in outcome analysis of the project. HCAHPS is a nationally standardized survey instrument that collects data on patient perception of quality of care. This instrument has 31-item questionnaire, out of which 21 questions address areas important on patient perspectives, and are divided into nine topics (CMS, 2016). The nine categories that indicate patient satisfaction are communication with doctors, communication with

nurses, pain management, quietness and cleanliness of hospital, the responsiveness of staff, communication about medications, discharge information and transition of care (CMS, 2016). Before public reporting, CMS and the HCAHPS project team apply adjustments to the results to allow fair and accurate comparison (CMS, 2016).

Background of HCAHPS Survey

According to the CMS (2016), this survey was developed for three main reasons: objective and meaningful comparison of hospitals on topics that are important to patients, permit public reporting of survey results, and to increase the accountability of the healthcare. This instrument is the product of a joint venture by CMS and AHRQ and is endorsed by National Quality Forum [NQF]. Development of this instrument went through various steps and process including literature review, public interviews, cognitive interviews, stakeholder input, pilot tests, psychometric analysis, consumer testing, and small-scale field tests. During the process of developing this tool, CMS provided opportunities for the public to comment on the instrument and responded to the questions of the public (CMS, 2016). This survey is administered to a random sample of patients within 48 hours to six weeks following discharge from a hospital. The population of the study is patients who are discharged home and have no psychiatric problems. HCAHPS survey can be implemented in four different survey modes: mail, telephone, mail with telephone follow-up, or active interactive voice recognition (HCAHPS, 2017). Hospitals must survey patients throughout each month of the year and target for at least 300 surveys annually. The survey is available in English, Spanish, Chinese, Russian and Vietnamese versions. The survey could be administered by a private vendor or hospital that has HCAHPS approval (CMS, 2016). The approval requires the participating person in charge of the project to participate in HCAHPS training, and meet the requirements for HCAHPS quality assurance

guidelines (CMS, 2016). The data collected by the vendor is sent to the HCAHPS data warehouse for cleaning and analyzing the results, calculating the scores and publically reporting by CMS (CMS, 2016).

Patient satisfaction is a complex concept, and hence it is best measured by a survey which is proved reliable and valid in similar situations before (Beattie, Murphy, Atherton, & Lauder, 2015; Royse et al., 2016). The data specific to this intervention is based on questions 15, 16 and 17 of the questionnaire**.**

15) During the hospital stay were you given any medicines that you had not taken before?

16) Before giving any new medicines, how often did hospital staff tell you what the medicine was for?

17) Before giving any new medicines how often did the hospital staff describe possible side effects in such a way that you could understand?

The other questions that this intervention could positively influence are question numbers three and twenty-five. Question number 3 asks " how often did the nurses explain things in a way that you understood," and question 25 states that "when I left the hospital, I had a clear understanding of the purpose for taking each of my medications" (Hospital Consumer Assessment of Healthcare Providers and Systems, 2017)**.**

Beattie and colleagues (2015) conducted a systematic research to assess the utility of commonly used patient satisfaction measuring instruments reliability, validity, cost efficiency, utility and educational impact. The instruments studied were HCAHPS (USA), Quality from patients perspective [QPP](Sweden), Quality from patients perspective shortened [QPPS] (Sweden), Picker patient experience questionnaire [PPE-15] (England), NHS inpatient survey

[NHSIP] (England), Scottish inpatient patient experience survey [SIPES] (Scotland), Hong Kong inpatient experience questionnaire[HKIEQ] (Hong Kong), Patient experience questionnaire [PEQ] (Norway) , Norwegian patient experience questionnaire [NORPEQ] (Norway),Patient experiences with inpatient care[I-PAHC] (Ethiopia) and Patient Perception of quality [PPQ] (India). The study found that HCAPHS survey has excellent internal consistency and reliability (Cronbach's alpha 0.7; ICC 0.7), and intermediate structural validity. Content validity was rated poor for HCAHPS, as there is no information on whether the patient suggestion has been integrated into the questionnaire (Beattie et al., 2015). The authors suggest considering the intermediate structural validity with caution, as the methods used to streamline HCAHPS instrument demonstrated construct validity in its' pilot study (Beattie et al., 2015; San Keller et al., 2005).

In 2003, CMS conducted a three-state pilot test of the HCAHPS survey in Arizona, New York, and Maryland to adult medical-surgical and obstetric patients using HCAHPS survey. This instrument had 32 questions addressing seven domains of patient care: Nursing communication, physician communication, medication communication, nursing services, pain control, discharge information and physical environment of the hospital. More than 16000 adult patients participated in the study. Five of six composites had a median internal consistency reliability of 0.69, and a median hospital-level reliability of 0.74 in the pilot study (CMS, 2003). Multi-variate analysis and T values of regression analysis done on each composite to the criterion found that the instrument has construct validity. The pilot study tested the instrument for hospital-level factor analysis, hospital-level reliability analysis, case mix analysis, variance component analysis, response rate analysis and response mode analysis. The survey has three specific questions to make it a standardized test in all the domains (CMS, 2016). Squires et al.

(2012) reports on a study done by RN4CAST, and American researchers to describe the systematic translation and cross-cultural evaluation process on the applicability of HCAHPS in the European countries. The RN4CAST project is a 12- European country comparative nursing workforce study funded by a European Commission for developing and sustaining the nursing workforce (Squires et al., 2012). Since no translations of the HCAHPS were available in their native languages, the RN4CAST team translated the instrument into Dutch, Finnish, French, German, Greek, Italian and Polish to cross-culturally evaluate the instrument before data collection. After the translation of the HCAHPs instrument, seven to twelve patients who had a recent hospitalization from each country completed the survey. Analysis of results revealed a modified kappa score ranging between 0.6-1.0 (Squires et al., 2012), supporting the tools appropriateness in providing positive patients satisfaction results internationally.

Mandel, Davis, and Secic (2014) used HCAHPS survey to study the effect of music therapy on patient satisfaction and quality of life of hospitalized adult patients of 30-89 age group in a medical-surgical unit in an Ohio based hospital. In this two-year study, 210 patients participated with 105 in the control group and 105 in the interventional group. The outcomes studied were the influence of music on the rating of the hospital, likelihood to recommend the hospital to others, and health-related quality of life. The analysis of data showed that the HCAHPS survey provided statistically significant results ($p= 0.02$). Significant p values demonstrated that the HCAHPS is a valid instrument to evaluate patient satisfaction.

Keeley, Wolf, Regul, and Jadwin (2015) conducted a study to assess the effect of caring standards on patient satisfaction. HCAHPS survey was used to measure the patient satisfaction, and CBI-24 was used to measure the perceived nursing care. A pre-experimental pre-/post-test design with comparison group and a post-test--only design was used to test the effect of the

caring protocol on patient satisfaction with nursing care and perceived nurse-caring. The study was conducted on seven inpatient units, lasted for eight months, and 158 patients participated in the HCAHPS survey to analyze the effect of caring standards on patient satisfaction. In this study analysis, the HCAHPS tool was found to have internal consistency reliability with a Cronbach alpha 0.96.

Suitability of the Instrument

Measuring patient's perception of care is challenging, because it is difficult to measure, and there is no accurate definition of the concepts involved. Patient's rating on the perception of care can be biased due to many causes and for this reason measuring patient satisfaction required an instrument with high utility. According to Liu, Squires, and You (2011), HCAHPS questions are sensitive to the quality of care received in the hospital. Ninety percent of all acute care hospitals in U. S. participate in HCAHPS survey to measure the patient satisfaction (Giordano, Elliott, Goldstein, Lehrman, & Spencer, 2010). CMS (2003) claimed that the HCAHPS survey tool had high utility, reliability, validity and was appropriate and direct in measuring the patient perception of quality of care. Iannuzzi et al. (2015) also supported the CMS study and argued that the HCAHPS survey is appropriate in assessing patient satisfaction.

Expenses of the Instrument

Administering HCAHPS survey is expensive, as it requires a large number of respondents and expertise (Beattie et al., 2015). The survey could be done by a private vendor or hospital that has HCAHPS approval (CMS, 2016). The approval requires the participating person in charge of the project to participate in HCAHPS training, and meet the requirements for HCAHPS quality assurance guidelines (CMS, 2016). The cost of administering this instrument varies with the method of survey and the number of patients surveyed. Combining HCAHPS

with other patient satisfaction survey could render a low cost (CMS, 2005). This study did not cause any additional expense on the organization as the organization participates in combined Press Ganey survey that includes HCAHPS.

Teaching Outline and Materials

All nurses who attended the staff meeting were given handouts on teach-back and copies of PowerPoint slides. This facility has interactive teachings incorporated into the in-house television, which provides education on common chronic health conditions such as diabetes, heart diseases, and obesity, and effects of diet and medications on these conditions. The nurses were requested to teach the patients on using the education channel while orienting the patient to the room on admission. The other tools used specifically for this projects are:

Teach-back toolkit. The tools required for the teaching was found on AHRQ website and were used with permission. These tools were developed as a joint venture by IOWA health system, Picker Institute, Des Moines University, and Health Literacy Iowa. The points addressed in the elements of the teach-back method were included in the teaching content to explain teach-back method. The observation tool was used in one to one observation, and the conviction and confidence scale was used to assess to what extent the nurses were convinced and comfortable about using the teach-back method. Permission was obtained to use the teach-back videos on the AHRQ website. However, this was not used. Instead, all the nurses took a course on teach-back developed by Johns Hopkins University and earned 0.5 continuing education credit hours. The decision to go with the continuing education course was made because this allowed the nurses to take the course at their own pace and receive points for continuing education. This course also had the AHRQ videos incorporated.

Clinical pharmacology. This is incorporated into the EMR system of the facility. This program has two features: a detailed information option for healthcare providers, and a shorter, simple version for patient education. Information for healthcare providers followed a drug guide pattern. The patient teaching option is also known as medication counselor. The medication counselor is 1-2 pages in length and is written at a lower literacy level with no medical jargons. Nurses could print the education handout, highlight the important points in yellow, provide patient education and give the handout to the patient. Options were available to get the print in English, Spanish, Arabic or French. Patients who were prescribed a new medication got the education material with their first dose and the understanding was verified in the following administrations.

Medication information cheat sheet. The facility has one page, two-sided medication teaching cheat chart, developed specifically for each unit. This cheat sheet has the medications grouped based on diagnosis or symptoms and is pictorial. All patients received this cheat sheet, and the nurses used this to explain the side effects of medications.

Medication information note. The DNP student prepared a report on commonly used medications on the unit with important side effects and self-care activities. This note listed only specific side effects, limited to three or four, and did not contain the information on the cheat sheet. This note was given to all nurses that they could study and use as a reference.

Data Collection

Data were collected through phone calls made to patients home, two days to a week post discharge. The phone calls were made by a CMS-approved hospital vendor. Patients who were discharged home or to a rehabilitation facility were selected at random for the survey. All interviewed patients were asked the same HCAHPS prescribed questions on their perception of

care received during the hospital stay. This survey has 31 questions belonging to nine domains. From the answers, only the questions relevant to medications teachings were considered for analyzing the outcome of the project. Although CMS publishes the HCAHPS results quarterly, the hospital monitored the survey results on a monthly basis. The outcome of the project used the reports for June, July, August, and September.

Expenses for the Project

The only expense spent by the facility on the project is estimated at 30 minutes staff education for 28 nurses. Calculated at an average base salary of $30/hr., the facilities expense on 28 nurses attending the meeting was $ 420. The DNP student's time is calculated as clinical hours. The other expense met by the DNP student was printing charges, which came to $82. The facility had all other tools required for the QI project. Since the organization participates in the Press Ganey Survey, the data analysis did not add any expense to the organization.

Results

Teach-back method is supported by many studies and national organizations as a method of communication to improve knowledge and skills and to verify understanding. The pre and post survey (Appendix L) on teach-back competency revealed that nurses were more competent in using teach-back method. More nurses answered "always" to assessing baseline knowledge, asking open-ended questions, using teach-back, and using various methods of instruction. The confidence and conviction scale survey demonstrated that all the nurses who participated in the survey were convinced of using teach-back method, and had been using it for more than three months for coaching the patients. They rated their confidence level of using teach-back at 8-10 range on a 0-10 scale.

During the project, when the DNP student was observing the nurses on the practice, the satisfaction scores were reported high. However, during verification of practice the patients made contrasting remarks such as “this is the first time, someone ever taught me about my medications” and “if I had known about the medicines during my first admission, it should have prevented multiple admissions.” Some patients complimented the practice as “this is a very good practice” and “it is very important to know about the medicines.” It was also observed by the DNP student that the nurses were not assessing patient understanding of medicines. When patients were on multiple medications, nurses would say a sentence or two on each medication which led to information overload and confusion. This practice contrasted the idea of teach-back which restricts the teachings to less than three points at one time. The practice of generalized medication teaching held the nurses back from focusing on patient learning needs and verifying understanding. Another finding of this project was that nurses varied in their practice of teachings, and most of the teachings were general information, and not specific to the patient and medicines. For example, one would teach the side effects as “all effects that are not expected of this medicines” while another may teach general side effects such as gastrointestinal symptoms. Many sick patients who could not comprehend well and did not have family at the bedside could not be involved in teachings. As routine practice nurses gave high priority for nursing procedures and problem-solving, and teaching was considered a less priority.

Project Strengths, Limitations, and Recommendations

The DNP project involved teaching the nurses on integrating teach-back approach into a patient teaching of medication to improve patient satisfaction on medication teaching. The selection of this intervention addressed different learning needs and preferences of the diverse

population. The intervention aimed to get immediate feedback on the level of patient comprehension of teachings and to clarify misunderstandings.

Project Strengths

The main strength of the project is the intervention of teach-back itself. The intervention is easy to teach, practice and costs no additional charge to the organization. There were enough resources available online regarding the teach-back method such as videos, approved continuing education programs and hand-out appropriate for print. Teach-back intervention is a strategy that could be used for patient teachings on multiple topics. Teach-back supports best practices, patient-centered care, and patient advocacy.

Organizational support was another important strength of the project. The organization wanted to incorporate teach-back as a standard of practice of the unit. The leaders of the unit did not restrict the doctoral student for observing the nurses or coaching them anytime. The doctoral student could freely convey the observations to the participants and the leaders.

Patient teachings, UpToDate and clinical pharmacology integrated into the computer system provided easy access to teaching material and handouts for print. UpToDate is an evidence-based clinical decision support resource by UpToDate, Inc. which is a sub-company of Wolters Kluwer. This software offers a trusted resource of evidence-based practices for healthcare providers worldwide to help them make right decisions that improve patient outcomes (Wolters Kluwer, 2017). Electronic medication record linked to pharmacy and laboratory informed nurses regarding teaching patients on possible adverse reactions and interactions to observe.

Another significant result of the project was it led light to nurses on taking ownership of their practice environment and promoting evidence-based practices. The unit director stressed

the importance of having a unit based staff nurse practice council to promote practice environments. The staff nurse practice council was to identify unit specific challenges, brainstorm ideas, and make decisions that suit the unit. This practice gave autonomy to the nurses in identifying best practices and implementing them.

Project Limitations

The most significant limitation of the project was the inconsistent results. Although the patient satisfaction scores increased from baseline, it did not stay steadily high. During the time frame when the doctoral student directly observed the nurses, the scores were high. This inconsistency in results points to the fact that the nurses were practicing the intervention when there was direct supervision, and went back and forth between traditional practice and the new practice.

The leadership change and the high rate of staff turnover during the project time frame has adversely affected the results. A leadership change had occurred just before the initiation of the project. During the project, a high vacancy rate was prevalent with increased staff turnover and new hiring. Nearly 20% of total nursing staff were hired during the project period, and could not be trained by the doctoral student. The shortage of nurses on the unit required float nurses to staff the unit which contributed to inconsistent practices. With the nursing shortage and work overload, nurses were concerned about additional time needed for patient teaching with this intervention.

Another significant limitation of the project was the failure to implement strategies as planned. Initially, it was decided to use the white communication board in patients' rooms to communicate with the healthcare providers regarding patient teachings. The plan was to write the name of the medication on the whiteboard after educating the patient, and the time of shift

report to verify the teaching by the incoming nurse. This strategy could not be practiced due to the limited space available on the whiteboards. A patient folder for teaching material also was suggested to be given at the time of admission. Each time the patient is taught a new medication, the print out was to be left in the folder for revision as necessary and at time of discharge. The nurses were reluctant on this approach due to a previous failure of such practice.

Recommendations

Although the project goal was to get a patient satisfaction score of 75% in four months period, the results were inconsistent and erratic. During the project period, there was a slight increase in satisfaction score from the baseline. Because of this inconsistency in the outcome, the doctoral student suggests repeating the project when unit conditions stabilized or conducting the project on another unit which is more stable. Another recommendation is to have the nurse practice council lead the future integration of the teach-back method to facilitate nurses' "buy-in." This practice would give them autonomy in dealing with the challenges, and have input on practical ways to implement the interventions. Uniformity in methods on identifying teaching needs, implementing interventions and verifying learning may lead to a standardized practice. Incorporating teach-back method in residency and new hire orientation may be helpful in promoting this approach as a standard of practice within the organization. Having the preceptors renew their certification on preceptorship yearly may be beneficial in assuring competencies, and assisting the new orientees in continuing their practice. Formation of an evidence-base committee to help the unit based staff nurse practice council could support them with suggestions on available best practices. Mandating the maximum use of the available resources within the system as a unit practice may prove beneficial. Verifying education on leader rounds may assure

compliance with the practice. A project that measures outcome over a large period may bring more reliable results.

Summary

Teach-back is an evidence-based practice that promotes communication. This project revealed a discrepancy between perceptions of healthcare providers and patients, on coaching of health information. It also concerns about how patient-centered the information is, and how the material was taught to the patient. Standardizing the policy in assessing and identifying the teaching needs may promote patient-centeredness. It is also noted that nurses are not aware that patient teaching as a mandated standard of practice in nursing with ethical implications. Taking ownership of teaching, and valuing patient education in par with other nursing tasks and procedures may improve patient satisfaction.

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SECTION II: DNP PROJECT PRODUCT

Professional Journal Selection

A manuscript for publication will be submitted to the *Journal of Nursing Scholarship*. *Journal of Nursing Scholarship* is the official journal of The Honor Society of Nursing, Sigma Theta Tau International (STTI), which is dedicated to improve the quality of nursing world-wide. This journal focuses on the health of people, and is read by health professionals in 103 countries. This journal was chosen because of its high impact index on nursing science. As a quality improvement project, this study will be acknowledged by nurses to promote patient safety.

Scope of Journal

Journal of Nursing Scholarship is a peer-reviewed journal of Wiley Online Library. Since this journal publishes thought provoking research studies, it is also named, "Worldviews on Evidence-Based Nursing". Its impact on evidence-based practice in 2016 is 2.396, with ISI citation ranking of 6/116 in nursing science.

Aim of Journal

The aim of the journal is to disseminate research results to health professionals, faculty, and students globally to improve the standard of nursing practice. The journal publication is a fast process, which helps in disseminating research to its readers without a long lapse.

Improving a Medical Unit's Medication Education by

Integrating a Teach-Back Program

Abstract

Purpose: Integrating a teach-back method in nurses' medication teaching as a standard practice to improve patient satisfaction on medication communication.

Design: A quality improvement project of educating the nurses of a medical unit of a large acute care facility about using a teach-back method in their medication teaching. Pre and post surveys were conducted using a survey monkey to understand the nurses' perception of their competency in using a teach-back method to educate the patient on medications was done. Nurses were educated on teach-back method in the monthly staff meetings. Following the group education, nurses were observed on a one-to-one basis using the AHRQ's observation chart, and they were given feedback on their performance. Two weeks after the one-to-one teachings, the practice was verified on randomly selected nurses. Three months after the project implementation, another survey was done to understand how convinced the nurses were on using teach-back method in patient education. Monthly Hospital Consumer Assessment of Healthcare Providers and Systems' scores on patient satisfaction of medication teaching were monitored.

Methods: The quality improvement project was developed using a logic model to frame the inputs, outputs, and outcomes related to the teach-back method. The study utilized Rosswurm and Larrabee's evidence-based practice model as the theoretical framework. The outcome of the intervention was analyzed by comparing the post-intervention HCAHPS score to pre-intervention HCAHPS scores on medication education.

Findings: The pre and post surveys revealed that the nurses overestimate their competency in using teach-back method. The one-to-one observation demonstrated a gap between the reported use and actual practice of the teach-back method among the nurses. Verification of practice after

one-on-one feedback revealed that the nurses varied in their practice. The nurses were also convinced about the effectiveness of using teach-back method.

Conclusion: Further analysis on the effect of the teach-back method on patient education is needed. Before any future quality improvement projects are implemented, nurses' "buy-in" is necessary.

Clinical Relevance: The use of active communication to achieve adequate patient medication education is vital to prevent medication errors and potential adverse events. Teach-back method used in patient interaction aligns with the guidelines proposed by major healthcare maintenance and accrediting organizations in promoting positive patient outcomes.

Keywords: Teach-back, medication education, patient teaching, patient satisfaction, self-management

Improving a Medical Unit's Medication Education by Integrating a Teach-Back Program

Effective communication in healthcare settings has a substantial impact on patient satisfaction, quality of care, and patient safety (Tamura-Lis, 2013). According to the World Health Organization (WHO), adherence to treatment determines the patient outcome; however, this is not solely the responsibility of the patient. The provider, patient, and process are responsible for patient's adherence to treatment (Brown & Bussell, 2011). Nurses believe they do their best regarding patient education, but available data suggest the patient's perception of the teaching effectiveness is not up to the standards (Van Biesen, Van der veer, Murphey, Loblova & Davis, 201 4). Well-organized patient education recognizes patient's characteristics and needs. Inadequate patient knowledge and skills lead to inefficiency in self-management of health conditions. Improving medication education is also necessary to improve the organizational performance and patient perception of care. Effective medication education increases patient safety, decreases mortality and morbidity, and reduces healthcare costs (Ahrens & Wirges, 2013).

Problem Background

Medication errors are expensive to patients, healthcare, and the nation. Based on a report of Institute of Medicine (IOM), the National League for Nursing (NLN) maintained that medication errors lead to 1.5 million injuries annually in the United States (U. S), and treating these errors costs the nation $20.9 billion (Institute of Medicine, 2006). In the U. S., 2% of all inpatients experience a medication error that prolongs their hospital stay by an average of 4.6 days and increases hospital cost by $4700 per admission (Harder et al., 2016). Numerous studies supported medication education's positive impacts on health literacy, hospital care costs, and

hospital readmissions. A study done by Manias (2010) revealed that two-thirds of the hospitalized patients did not know the course or side effects of their medications. The Agency for Healthcare Research and Quality (AHRQ) reported that 40-80% of medication information given to patients was forgotten immediately, and 50% of the retained material was misunderstood or misinterpreted (AHRQ, 2015). Nouri and Rudd (2015) in a systematic review of 12 articles claim discrepancy in health literacy levels between the healthcare provider and patient, that leads to reduced learning in the patient.

Although patient education is fundamental to improve patient outcomes, lack of coaching is a common complaint of many patients (Aghakhani et al., 2012). Failure to educate the patients on medication could hamper patient safety (Borgsteede et al., 2011). Medication education is a teaching-learning process that follows the same steps as the nursing process: assessment, data collection, planning, implementing and evaluation. Teach-back is a useful tool in health education in assessing patient understanding and clearing any miscommunication (Caplin & Saunders, 2015). Teach-back method used in patient teaching improved patient engagement in self-learning, and thereby promoted self-management, patient satisfaction, and safety (Caplin & Saunders, 2015).

In spite of nurses' well-intentioned patient teaching, they face many challenges in conducting it. For example, factors related to patients, providers, and the process itself could influence the effectiveness of teaching. Identified patient-related challenges include patients' literacy level, language barriers, culture, physiological challenges, and shortened hospital stays (Beagley, 2011). Nurse-related barriers in teaching include lack of effective teaching skills, workloads, time constraints, and lack of patient-friendly teaching materials and overestimating a

patient's literacy (Friberg et al., 2012). System-related factors are lack of information technology and limited access to care (Brown & Bussell, 2011).

Purpose statement and PICOT Question

Medication teaching is an essential aspect of patient care, which could result in positive patient outcomes. Education becomes powerful when it is individualized to meet patients' literacy levels, as well as their physical and cognitive functions. According to Tamura-Lis (2013), nurses showed a lack of adequate competency in assessing patients' health literacy and educating them at their literacy level. The purpose of this quality improvement project of integrating a teach-back method into patient medication education was to improve the patient satisfaction of medication teaching. With the goal of measuring the effect of the teach-back method on patient satisfaction, the PICOT question focused on the indication and side effects of new medications ordered for patients during hospital stays. The PICOT question was: What is the effect of the integration of a teach-back method into nurses' medication teaching on a medical unit and patient satisfaction of medication teaching compared to the routine practice of nurses saying the medication and its side effects each time?

Literature Review

Teach-back is an evidence-based practice in patient education in which literature has shown many positive health outcomes. Numerous studies recommended teach-back as a useful tool to teach the complex material and verify understanding (DeWalt et al., 2010). AHRQ contended that teach-back builds trust in the healthcare provider and increases patient satisfaction (2015). Teach-back method is an evidence-based practice in patient education, which has been supported by American Academy of Family Physicians, American College of Surgeons, Agency for Healthcare Research and Quality, American Hospital Associations, American

Medical Association, American Nursing Association, Institute for Healthcare Improvement, National Quality Forum, The Picker Institute, and The Joint Commission (Milner-Fenwick White Paper, 2016).

Badaczewski et al. (2017) and Milner-Fenwick White Paper (2016) studied the effectiveness of teach-back and found that purposeful teach-back occurred only in 39% of patient encounters. Improved patient-centered communication and positive engagement of caregivers were demonstrated among those who received education using the teach-back method. These authors suggested standardizing the teach-back approach to facilitate more positive outcomes.

Although nurses reported teach-back as a preferred method of teaching with improved patient satisfaction in a quasi-experimental study, the HCAHPS survey failed to show any significant improvement in patient satisfaction about patient education (Centrella-Nigro & Alexander, 2017). Perceived lack of time was the main barrier identified by nurses in using the teach-back method in this study. The authors recommended future studies on the effect of utilization of teach-back on HCAPHS scores and predicted improved patient satisfaction with an increased competency of nurses in using this method (Centrella-Nigro & Alexander, 2017). In another recent study, researchers reported a significant increase in patient satisfaction, trust and patient outcomes when the family was taught using teach-back method during interdisciplinary rounds on a pediatric unit (Bogue & Mohr, 2017).

A systematic review of 12 articles showed that using teach-back methodology in patient education improved adherence to diet and medication among type 2 diabetes patients (Ha Dinh et al., 2016). This study revealed positive outcomes in knowledge retention, adherence to diet and treatment, self-efficacy, self-management, and readmissions. However, the study did not support any positive outcomes on quality of life and suggested future studies using this variable. In Iran,

a randomized controlled trial of 70 myocardial infarction patients reflected an increased quality of life when the patients were given three sessions of 45 minutes teaching on self-care activities using teach-back method (Mohsen et al., 2017).

A prospective cohort study on the effect of the teach-back method on heart failure (HF) patients at the University of California hospitals showed that it improved retention of teaching material in HF patients during the hospital stay and up to eight days after discharge. The participants in this study were elderly patients who were independent. Although the teach-back approach used in this study reported a positive impact on learning, it did not alter readmission rates (White et al., 2013). Another randomized controlled trial also supports increased knowledge retention with teach-back method in type 2 diabetes patients with low literacy (Negarandeh et al., 2013).

When teach-back approach was utilized in 200 HF patients for teaching, it improved patient satisfaction, hand over communication, and decreased readmissions. Decreased length of hospital stay was an added outcome of this intervention (Peter et al., 2015). A randomized controlled study integrating teach-back into discharge instructions of low literacy HF patients who visited the emergency department demonstrated improved comprehension of medication, self-care, and follow up when compared to standard teaching (Haney & Shepherd, 2014). Another recent study combining discharge bundle with teach-back reported an 8% reduction in 7-day readmission and 10% reduction in 30-day readmission among children admitted to a large urban tertiary pediatric hospital (Shermont et al., 2016).

A Chicago based study found a significant increase in proper technique of inhaler use when teach-back method was used in asthma and chronic obstructive pulmonary disease (COPD) patients (Press et al., 2017). In a systematic review of nine studies, Dantic (2014) reported

improved correct usage of metered dose inhalers in COPD patients who were taught using teach-back methodology. These authors suggested teach-back as an appropriate method to inform patients of all ages on the proper use of metered inhalers.

A quality improvement process that incorporated teach-back method into discharge education of total joint hip replacements demonstrated increased patient compliance with pain management, anticoagulation, and physical therapy when the intervention was supplemented with follow up post-discharge calls (Darcy et al., 2014). When the teach-back method was used in veterans for discharge teachings in total hip joint replacement patients, the 30-day readmission was dropped by 36% (Green et al., 2015). In these two studies, the researchers suggested complementing the in-hospital teach-back of discharge instructions with post-discharge calls for better outcomes.

An interview of 51 individuals that included children and parents in a tertiary hospital emergency department on the impact of a teach-back method on discharge instructions confirmed the effectiveness of teach-back in promoting provider-to-patient communication and retention of learning by the patient. People with low literacy perceived this approach as condescending, although they gave valuable suggestions to avoid this perception (Samuels-Kalow et al., 2016). The researchers recommended future studies using words suggested by patients.

Conceptual Model and Theoretical Frame Work

The quality improvement project of integrating a teach-back method was framed using a logic model. A logic model is a methodical and graphic way of explaining the purpose of the project by relating the outcome with the resources and processes ((Hayes et al., 2011; Royse et al., 2016). The logic model summarized this project into one document to increase

communication, teamwork, and clarity of ideas among the participants by linking the resources, activities, and outcomes specific to this project. The theoretical framework used for this project was the Rosswurm and Larrabee's, evidence-based model. A systematic approach of EBP in nursing fills the gap between the theory, research and clinical practice (McEwen & Wills, 2014). Rosswurm and Larrabee's EBP model is a good fit for acute care settings as it is similar to the nursing process and follows the same steps starting from assessment to evaluation.

Design and Setting

This quality improvement project took place in a 44-bed capacity medical unit of a large acute care facility in south-central Texas. This unit employed 42 cultural and racial-ethnographically diverse nurses. Sixty percent of the nurses were baccalaureate prepared and had less than five years of experience with many being recent graduates. The nurses were in the 25-55 age group, and six of them were foreign nurses, who had earned their nursing education in a country other than the U. S. The method used in this project was the education of nurses.

The patients on this unit were adult patients with chronic diseases such as diabetes, heart diseases, stroke, chronic obstructive pulmonary diseases, pneumonia, liver cirrhosis, and auto-immune diseases. Many of these patients were on many home medications, and also took herbal and vitamin supplements. The patient population of the unit mimics the south Texas population: two third Hispanics.

Implementation

The education and the hospital Institutional Review Boards exempted the project from a research study. The quality improvement plan was presented to the organizational leaders, and then to the nurses of a medical unit. The participants consented to the project. During the staff meeting, the plan was discussed, and the nurses were taught the teach-back method that would be

utilized. The nurses also participated in an online survey to assess their knowledge and practice of the teach-back method. The nurses were observed and taught on a one-to-one basis to validate the practice. The nurses completed a pre- and post- survey on their competency on teach-back method. Of the 42 nurses, 28 nurses participated in the survey.

Although many of the nurses responded positively in their use of the teach-back method in educating the patients, the one-on-one observation of nurses revealed that the nurses were not using the teach-back approach in patient education. After the nurses were taught on teach-back method, they were observed and individual teaching was given. Nurses were followed 2-3 times to support their practice of teach-back. The unit mandated that all patients were to be given patient education written information on medication side effects. Two weeks after the initial one-on-one teaching and observation, verification of practice was done at random, which found an inconsistent practice of teaching using teach-back method. The nurses were engaged in teaching and were educating the patients; however, information overload was noted when multiple medications were administered at the same time. The nurses were corrected on this aspect, and a survey was done on their competency using the AHRQ conviction and confidence scale, and competency questionnaire. For the second survey, the participation was initially limited, but after reminders, a total of 24 nurses completed the survey.

Resources

Permission was obtained from IHI to use their teach-back observational tool and the conviction and confidence scale. The nurses took a course on teach-back method developed by Johns Hopkins Hospital and earned 0.5-hour continuing education. The facility has clinical pharmacology interfaced to the medication administration record for easy reference and printouts. In addition to the clinical pharmacology, the facility also has unit specific pictorial

medication information sheets. This author prepared a three-page information sheet on side effects of the commonly used drugs on this unit, which nurses carried with them on the computer on wheels (COW) for electronic medication administration. The unit practiced daily leader rounds on patients, and medication teaching was included in these interviews. Outcome evaluation was based on monthly HCAHPS survey result on patient satisfaction of medication communication. The hospital's CMS-approved vendor conducted the HCAHPS surveys.

Findings

Teach-back method is supported by several studies in the literature as a method of communication to improve knowledge and skills and to verify understanding. During the project when this author was observing the nurses on their practice, the HCAHPS patient satisfaction scores were high. However, during verification of practice, the patients made contrasting remarks such as "this is the first time someone ever taught me of my medicines" and "if I had known about the medicines during my first admission, it should have prevented multiple admissions." Some patients complimented the practice as "this is a very good practice" and "it is very important to know about the medicines." This author identified that a lack of assessing patients' learning needs. Patients on multiple medications received instructions on all medicines, which resulted in information overload. Failure to assess the patient's knowledge, and explaining about many medicines at one time is in contrast to the teach-back method of limiting teachings to two or three points at a time. This author also noticed that patient teachings tended to be more generalized and not patient-centered. As a routine practice, nurses were inclined to give a higher priority to nursing procedures and problem-solving than patient teaching.

Project Strengths, Limitations and Recommendations

The quality improvement project involved teaching the nurses on integrating teach-back approach into the patient teaching of medications to improve the patient satisfaction of medication teaching. The selection of this project addressed different learning needs and preferences of a diverse population. The intervention aimed to get timely feedback on the level of patient comprehension of teachings and to clarify misunderstandings.

Project Strengths

The main strength of the project was that it led to the formation of a staff nurse practice council that met on a monthly basis to identify unit specific challenges, brainstorm ideas, and to make decisions to meet the unit's needs. This fostered nurse autonomy in identifying best practices and implementing them. Another strength of the project was that the teach-back method was easy to teach, practice, and was cost-beneficial because the organization did not incur any additional costs. There were sufficient resources available online regarding teach-back methods as videos, continuing education, and printouts.

Organizational support was an important strength of the project. The organization was interested in incorporating teach-back as a standard of practice to promote best practices. The teach-back method in patient education aligned with the organization's mission of providing safe care. Resources available in the facility, such as patient teachings on various topics, UpToDate, and clinical pharmacology integrated into the computer system, provided easy access to teaching material and printouts. UpToDate is a software, which offered trusted resources of evidence-based practices for healthcare providers that could help them to make decisions that improve patient outcomes (Wolters Kluwer, 2017).

Project Limitations

A significant limitation of the project was a lack of consistency among project results. Although the patient satisfaction scores reflected an increase from the baseline, it did not remain steadily high. During the time frame when this project manager directly observed the nurses, the scores were high. This inconsistency in results suggested that the nurses were practicing the teach-back method when there was direct supervision. However, nurses tended to fluctuate between traditional practice and the project practice when unobserved.

The leadership change that occurred just before the project implementation and the high rate of staff turnover during the project time frame has adversely affected the results. During the project, a high vacancy rate was prevalent with increased staff turnover and new hiring.

Recommendations

This project manager recommended future integration of the using more medical units. Another recommendation is to have the nurse practice council lead the future integration of the teach-back method on other medical units to facilitate nurses' "buy-in," autonomy, and input to the project. Incorporating teach-back method in residency and new hire orientation may be helpful to promote it as the standard of practice within the organization. Lastly, a project of longer time may produce more reliable results and outcomes.

Conclusions

Teach-back is an evidence-based practice that promotes effective, patient-centered communication. It is necessary to bridge any gaps between the perceptions of healthcare providers and patients on the teaching of health information. Effective coaching on medications is crucial to assure patient safety. It is imperative that healthcare providers meet the learning and health literacy needs of patients. Standardizing organizational policy in assessing and

identifying patients' learning needs will be beneficial. Nurses are in a prime position and trusting relationship with patients to integrate the teach-back method into practice, which may ultimately improve overall patient satisfaction and outcomes.

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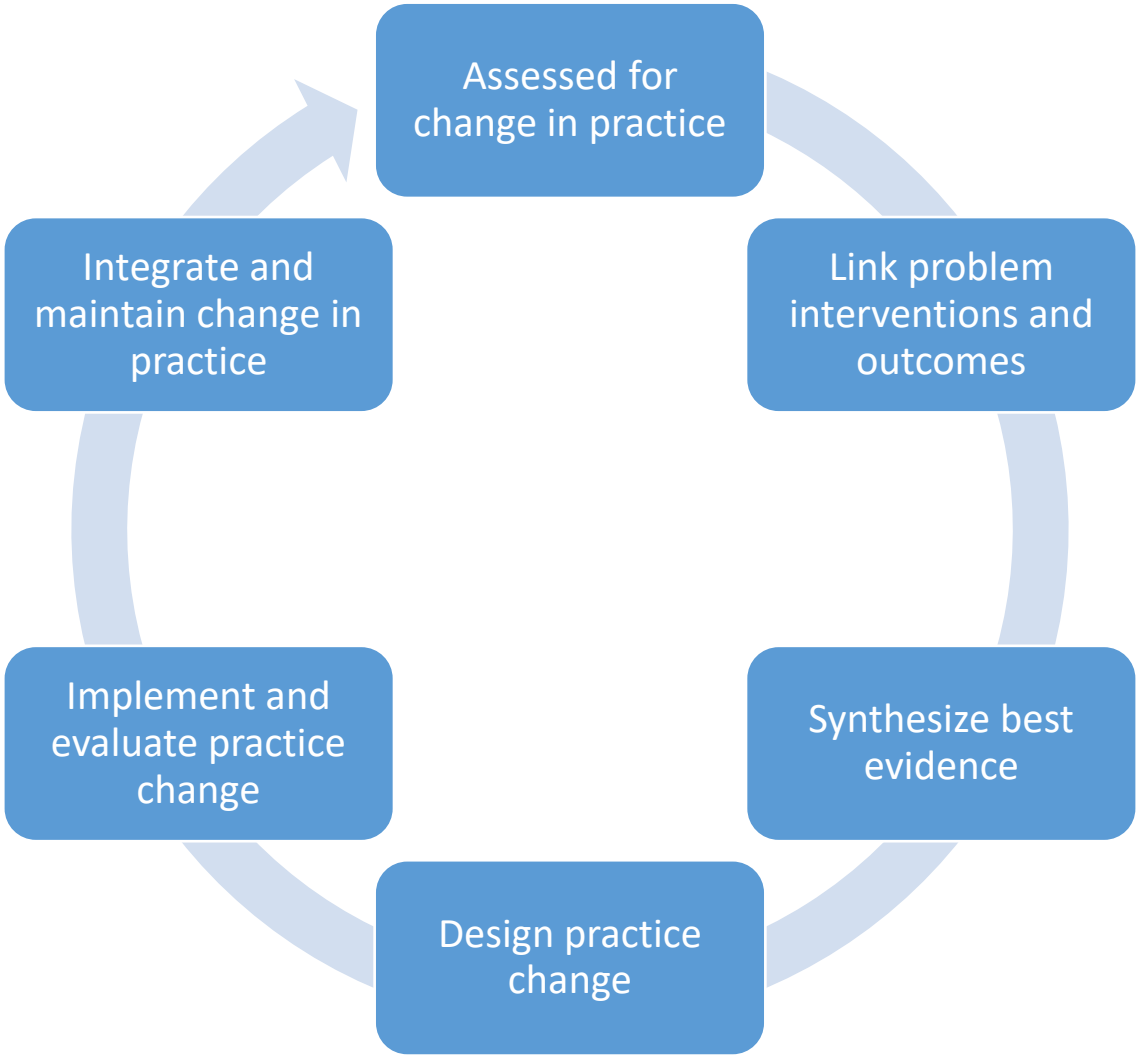
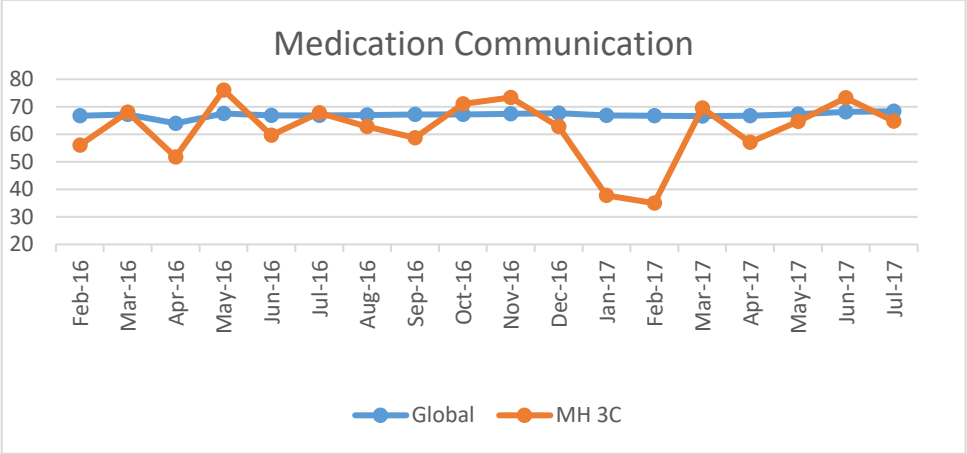
Appendix A

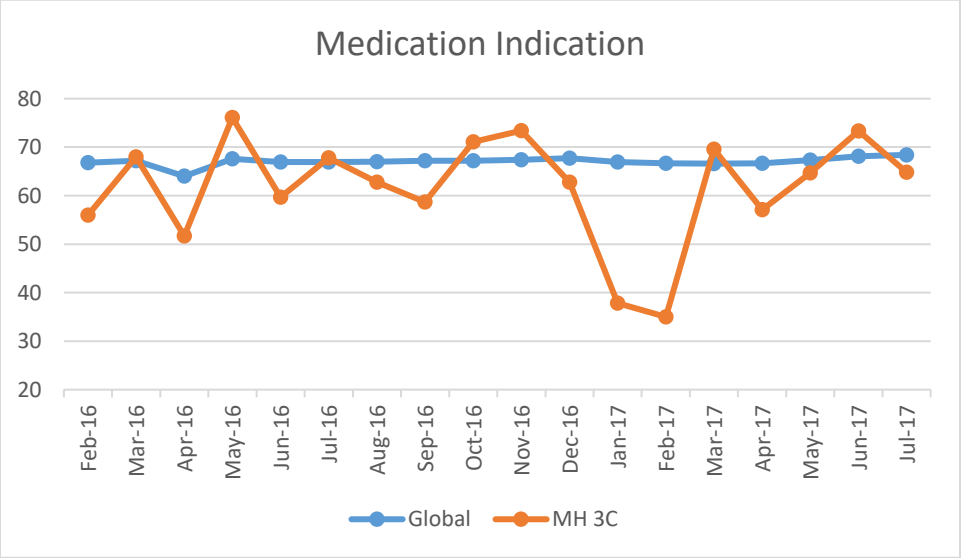
Rossworm & Larrabee's Evidence Base Model

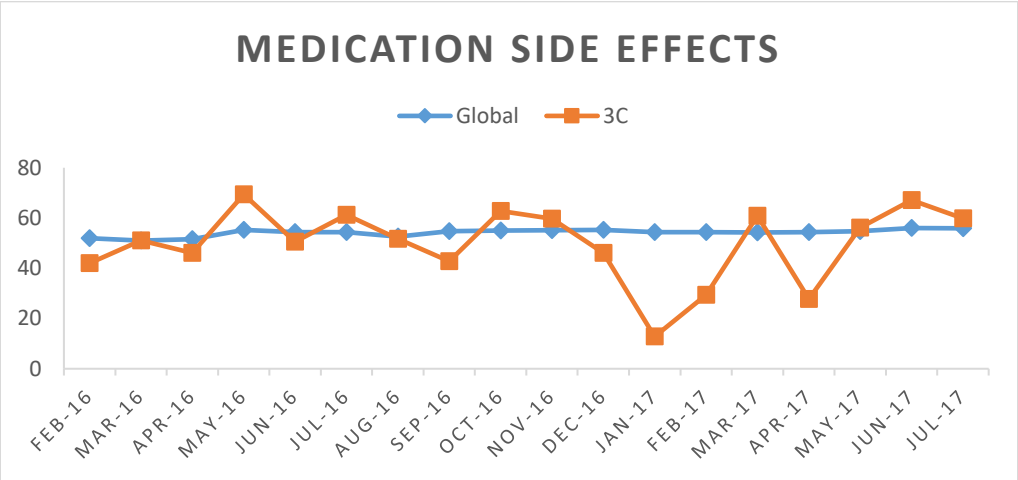


Appendix B

HCAHPS survey results from February 2016






MEDICATION SIDE EFFECTS
Global
3C
80
60
40
20
0
FEB-16
MAR-16
APR-16
MAY-16
JUN-16
JUL-16
AUG-16
SEP-16
OCT-16
NOV-16
DEC-16
JAN-17
FEB-17
MAR-17
APR-17
MAY-17
JUN-17
JUL-17

Appendix C

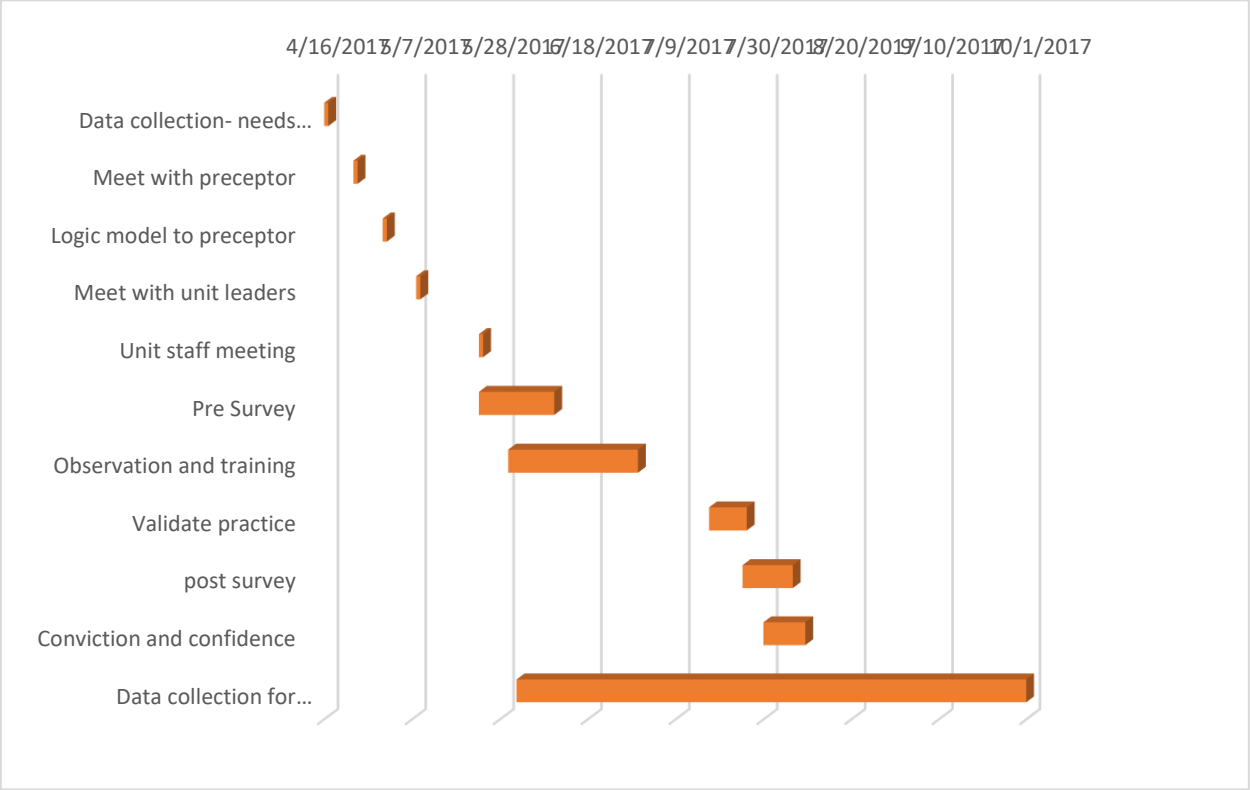
Logic Model Framework for Teach-back Approach

Inputs	Activities	Outputs	Outcomes Short-term	Impact (Medium)	Impact (Long term)
Time: 1 Educator 2. Nurses 3. Super-users Class room resources video, projector	Implementation Methods Survey on nurses' competency in teaching, and perceived barriers. Observe nurses on existing practice Identify super-users Educate the nurses in staff meeting (group) One to one teaching of nurses	Number of participants on initial survey Number of attendees for staff meeting Number of nurses who received one to one teaching Number of super users trained Number of patients interviewed Number of nurses who completed the post survey	Participation of 70% of nurses in pre and post survey 80% of nurses attend the staff meeting 80% of nurses are given one to one teaching on teach-back approach. 100% of super users are involved in monitoring and supporting the teaching process. 80% of nurses are observed	Increased return demonstration of medication teachings by patient Increased patient satisfaction on leader rounds on teaching Increased understanding of medicines demonstrated in post discharge calls	Increased patient satisfaction scores on HCAHPS survey.

	Teaching super-users Observe nurses on new practice Provide ongoing support Conduct a post education survey on teaching competency	Number of patients on leader rounds performed Number of patients who had post-discharge follow up.	during the teaching process. 80% of nurses use teach-back approach on a regular practice All new patients are rounded by the leader within 48 hours of admission. All anticipated discharged patients are rounded by a leader 24 hours prior to the discharge 90% of the patients discharged to home receives post discharge calls within 96 hours of the discharge.		

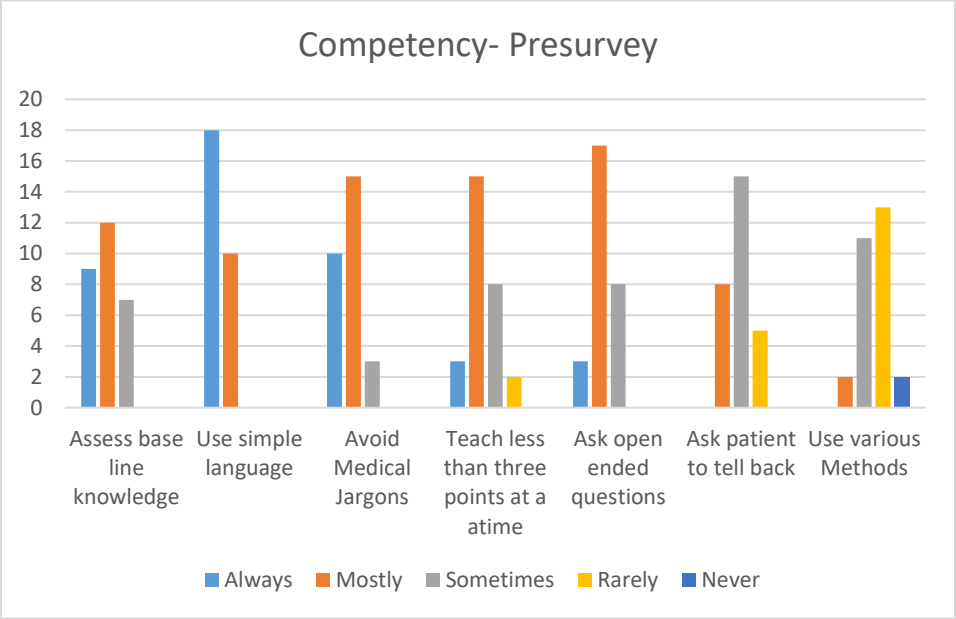
Appendix D

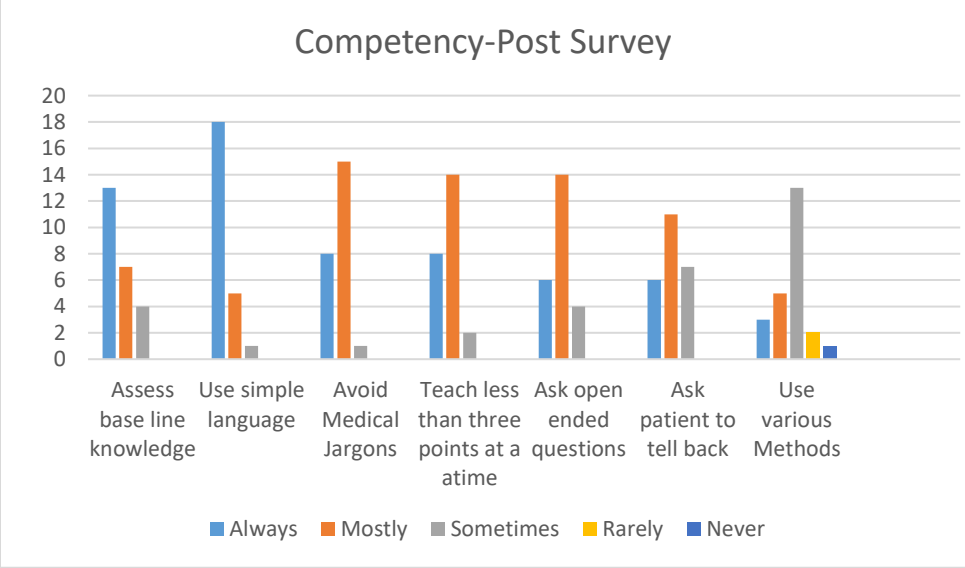
Project Gantt Chart



Appendix E

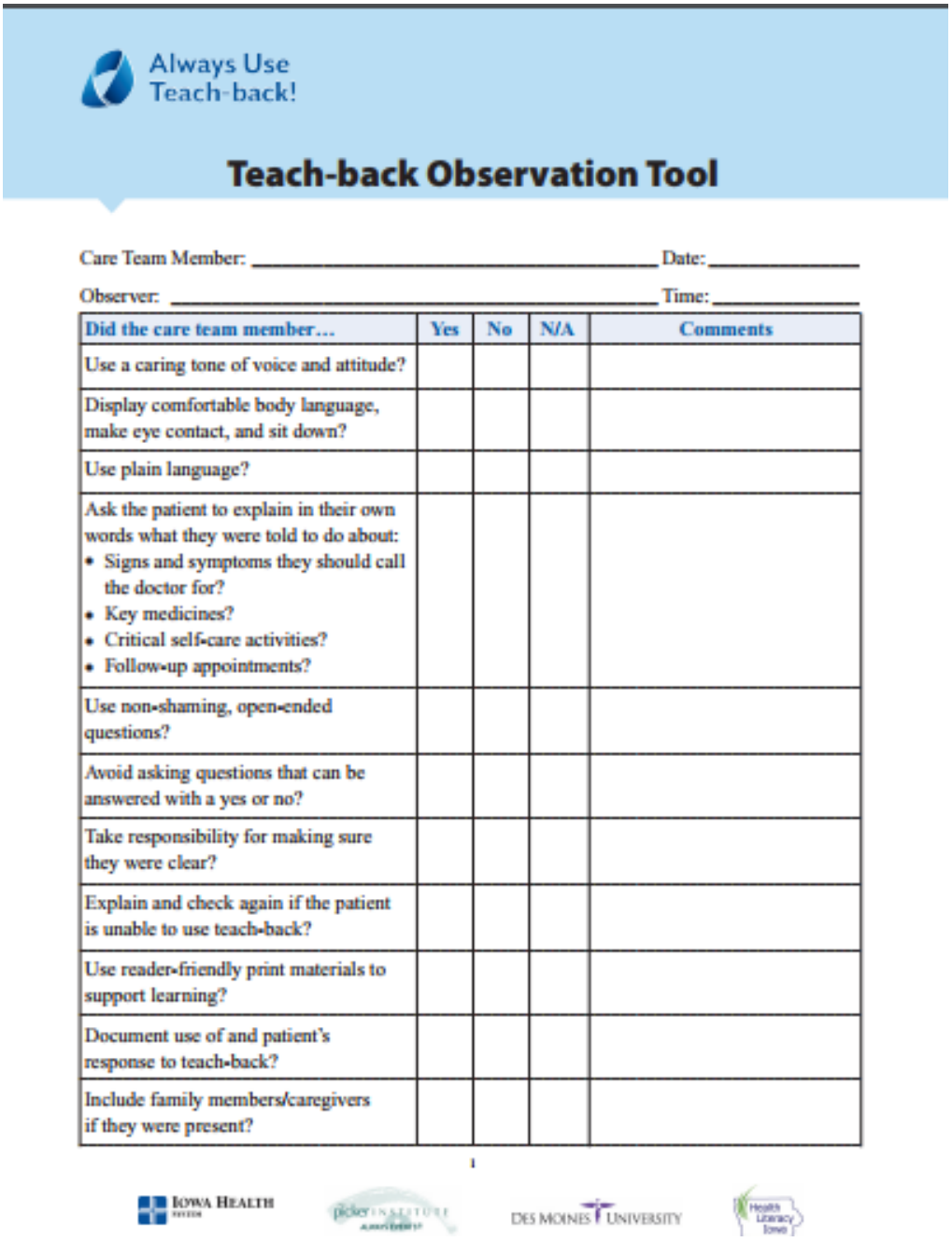
Competency Survey





Appendix F

Teach-back Observation Tool



Always Use Teach-back!

Teach-back Observation Tool

Care Team Member: _____ Date: _____

Observer: _____ Time: _____

Did the care team member…	Yes	No	N/A	Comments
Use a caring tone of voice and attitude?				
Display comfortable body language, make eye contact, and sit down?				
Use plain language?				
Ask the patient to explain in their own words what they were told to do about: • Signs and symptoms they should call the doctor for? • Key medicines? • Critical self-care activities? • Follow-up appointments?				
Use non-shaming, open-ended questions?				
Avoid asking questions that can be answered with a yes or no?				
Take responsibility for making sure they were clear?				
Explain and check again if the patient is unable to use teach-back?				
Use reader-friendly print materials to support learning?				
Document use of and patient's response to teach-back?				
Include family members/caregivers if they were present?				

1

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Source: Institute for Healthcare Improvement
http://www.ihi.org/resources/Pages/Tools/AlwaysUseTeachBack!.aspx

Appendix G

Permission to use Teach-back observation tool and conviction and confidence scale

Hi Jolly,

Thank you for your request. You are welcome to use the "Teach-Back" observation tool located at http://www.teachbacktraining.org/assets/files/PDFS/Teach%20Back%20-%20Observation%20Tool.pdf. Please acknowledge IHI as the source of the material, using the following language: "Reprinted fromwww.IHI.org with permission of the Institute for Healthcare Improvement (IHI), © 2011."

You are welcome to use the "Conviction and Confidence" tool located at http://www.teachbacktraining.org/assets/files/PDFS/Teach%20Back%20-%20Conviction%20and%20Confidence%20Scale.pdf. Please acknowledge IHI as the source of the material, using the following language: "Reprinted from www.IHI.org with permission of the Institute for Healthcare Improvement (IHI), © 2011."

Also, please refer to our Copyright statement found at the following link: www.ihi.org/pages/termsofuse.aspx.

Best,

Eleonora Angjeli

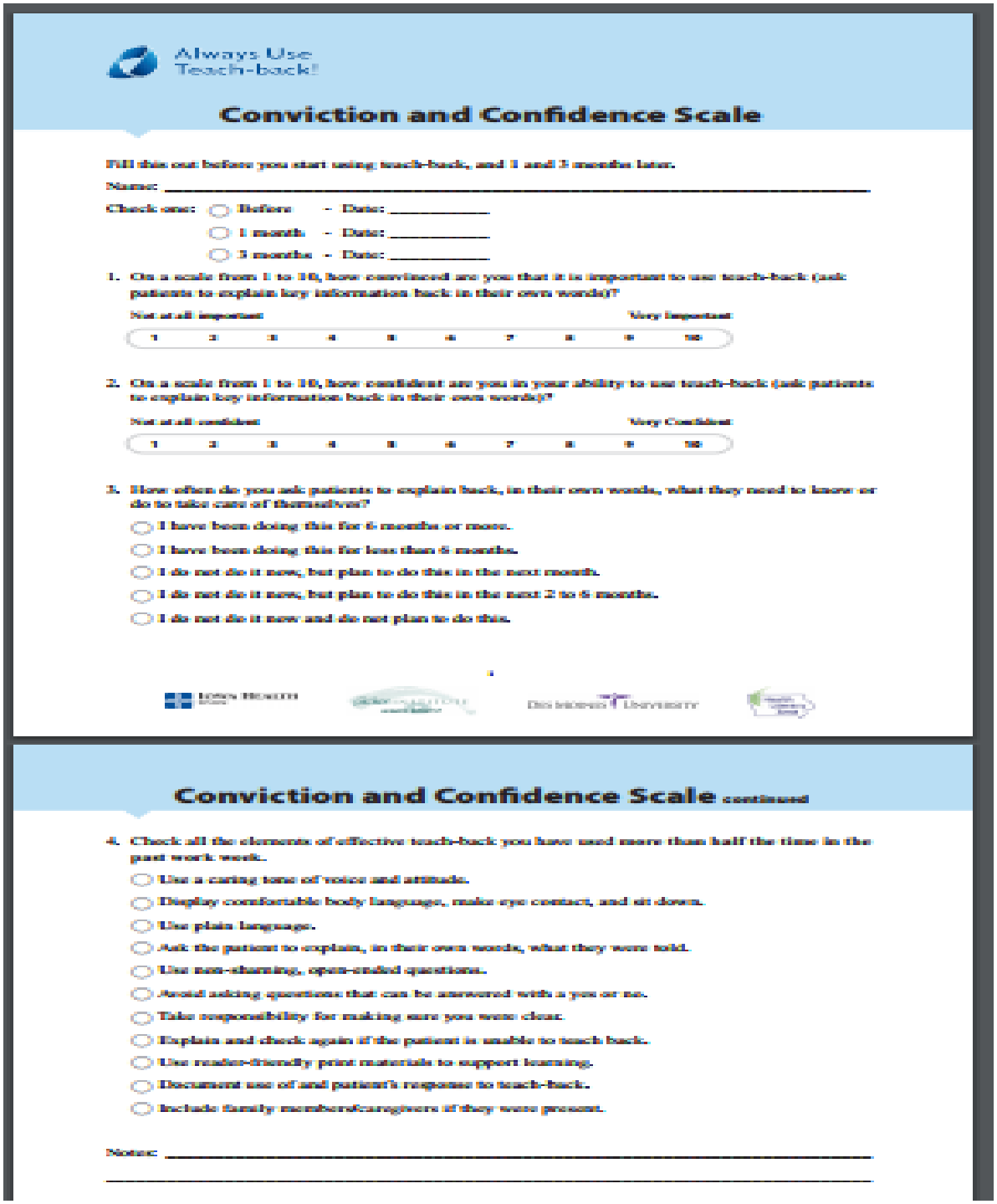
Customer Service & System Improvement Specialist

Institute for Healthcare Improvement

20 University Rd, 7th Floor, Cambridge, MA 02138, **T** 617 301-4800; **E** eangjeli@ihi.org

Appendix H

Conviction and Confidence Scale



Always Use Teach-back!

Conviction and Confidence Scale

Fill this out before you start using teach-back, and 1 and 3 months later.

Name: _____

Check one: ◯ Before – Date: _____
◯ 1 month – Date: _____
◯ 3 months – Date: _____

1. On a scale from 1 to 10, how convinced are you that it is important to use teach-back (ask patients to explain key information back in their own words)?

Not at all important — Very important

1 2 3 4 5 6 7 8 9 10

2. On a scale from 1 to 10, how confident are you in your ability to use teach-back (ask patients to explain key information back in their own words)?

Not at all confident — Very Confident

1 2 3 4 5 6 7 8 9 10

3. How often do you ask patients to explain back, in their own words, what they need to know or do to take care of themselves?

◯ I have been doing this for 6 months or more.
◯ I have been doing this for less than 6 months.
◯ I do not do it now, but plan to do this in the next month.
◯ I do not do it now, but plan to do this in the next 2 to 6 months.
◯ I do not do it now and do not plan to do this.

Conviction and Confidence Scale continued

4. Check all the elements of effective teach-back you have used more than half the time in the past work week.

◯ Use a caring tone of voice and attitude.
◯ Display comfortable body language, make eye contact, and sit down.
◯ Use plain language.
◯ Ask the patient to explain, in their own words, what they were told.
◯ Use non-shaming, open-ended questions.
◯ Avoid asking questions that can be answered with a yes or no.
◯ Take responsibility for making sure you were clear.
◯ Explain and check again if the patient is unable to teach back.
◯ Use reader-friendly print materials to support learning.
◯ Document use of and patient's response to teach-back.
◯ Include family member/caregivers if they were present.

Notes: _____
_____

Source: Institute for Healthcare Improvement

http://www.ihi.org/resources/Pages/Tools/AlwaysUseTeachBack!.aspx

Appendix I

Table: 1. Nurses' Demographics

Nurses Demographics	Beginning of project (April, 2017)	End of Project (October, 2017)
Total Nurses	42	41
Baccalaureate	25	26
Associate	17	15
Male	6	6
Female	36	35
Experience< 1year	11	16
1-2 years	13	12
2-5 years	9	5
> 5 years	9	8
International	6	6

Appendix J

IRB Approval

IRB approval of Methodist Hospital

Please note that Methodist Healthcare System Institutional Review Board has taken the following action on IRBNet:

Project Title: [1029643-1] Improving a Medical Unit's Medication Education by Integration of a Teach-Back Program
Principal Investigator: Jolly Punchamannil, MSN, RN

Submission Type: New Project
Date Submitted: February 15, 2017

Action: NOT RESEARCH
Effective Date: March 3, 2017
Review Type: Administrative Review

Should you have any questions you may contact Philip Oilepo at philip.oilepo@mhshealth.com.

Thank you,
The IRBNet Support Team

IRB approval of UAH

Jolly Punchamannil
College of Nursing
University of Alabama in Huntsville

Dear Punchamannil,

The UAH Institutional Review Board of Human Subjects Committee has reviewed your proposal, *Integrating teach-back methodology into a medical unit to improve patient satisfaction on medication teaching,* and found it meets the necessary criteria for exemption from review. Your proposal seems to be in compliance with this institutions Federal Wide Assurance (FWA) 00019998 and the DHHS Regulations for the Protection of Human Subjects (45 CFR 46).

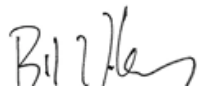
Please note that this exemption is good for one year from the date on this letter. If data collection continues past this period, you are responsible for processing a renewal application a minimum of 60 days prior to the expiration date.

It is also important that you follow that advice of the UAT recommendations regarding informing participants in the study. The UAB IRB recommends that you that reformulate your conset letter slightly, so that subjects are signing an assent to participate, with the knowledge that this study has been exempted by the UAH IRB.

No changes are to be made to the approved protocol without prior review and approval from the UAH IRB. All changes (e.g. a change in procedure, number of subjects, personnel, study locations, new recruitment materials, study instruments, etc) must be prospectively reviewed and approved by the IRB before they are implemented. You should report any unanticipated problems involving risks to the participants or others to the IRB Chair.

If you have any questions regarding the IRB's decision, please contact me.

Sincerely,



Appendix K

Teaching Plan for a class on Teach-Back Approach

Objectives of Class on Teach-Back Method

At the end of the lecture and the case studies, the nurses will be able to

Define teach-back method

Identify three patient related factor that leads to ineffective learning

Identify three provider related factors that leads to ineffective teaching

Verbalize five elements of teach-back approach

Discuss five safety outcomes of teach-back method.

Demonstrate efficient use of teach-back approach through role play

Participate in role play to return demonstrate teach-back.

Time allotted for Instruction: 30 minutes

Methods of Instruction: Lecture 10 minutes with power point presentation, Video clips from IHI - 10 minutes, Role play 7 minutes, Evaluation-3 minutes

Lecture content

Studies have shown that 40-80 % of the medical information patients receive is forgotten immediately and nearly half of the information retained is incorrect. One of the easiest ways to close the gap of communication between the provider and patient is to use the "teach-back" method when instructions are given. Teach-back is a communication technique where understanding is verified by return verbalization or demonstration of teaching in patient's own

words (Manias, 2010). It is also called 'show me' or 'closing the loop', and verifies patient understanding. In teach-back approach, the provider teaches the patient in plain language, and in short statements, while speaking slowly and clearly. Information given at a time is limited to less than three ideas (Tamura-Lis, 2013). This technique can be used to interact with anyone irrespective of their age, literacy level and learning style. This approach could be complimented with printed material at a 5^{th} grader level.

Johns Hopkins Teach-back CE link

www.ijhn-education.org/content/teach-back-tool-ensure-patient-understanding

Role Play: Miscommunications

Nurse to a patient who is going for MRI: Do you have any metal on your body?

Patient to nurse: The doctor told me to come in for CABG next week. Can I get the cabbage somewhere close to my house?

Nurse giving discharge instruction to heart failure patient: You need to take this water pills to get rid of excess fluids. Patient: I will take the water pill instead of drinking water

Doctor to patient: You need a pace maker. Patient questions the doctor: where can I find a peace maker?

Nurse to patient: Your nodes are positive. Patient: That is good. I like to have everything positive

Nurse: You need to take this pill with your meals. Patient: Not a problem. I always eat

Nurse: You need to exercise. Patient: I can't afford to go to gym

Appendix L

Teaching Methods and Styles

Teaching Methods	**Always**	**Most of the time**	**Sometimes**	**Rarely**	**Never**
I assess patients' baseline understanding and tailor the education based on their knowledge level					
I use common words and simple language to explain teachings					
I use a caring tone, attitude when teaching					
I avoid medical jargon, vague terms, slangs and abbreviations					
When teaching, I emphasize less than three points at a time					
I use open ended questions to promote communication					
I ask my patients to repeat things back/ demonstrate back to make to make sure that my teachings are clearly understood					
I use various methods such as videos, audios, printed materials, and pictures to educate patients					
I am not hurried, and speak slowly when giving patient teaching					
I include family in teaching					

Table 2- Pre and post survey Questionnaire

Nursing Competency on Teach-back Methodology: Pre and Post Surveys
Link to SurveyMonkey for survey questions on Nurse competency of teach-back
https://www.surveymonkey.com/r/3RMNLJS