Health Literacy: Improving Understanding of Discharge Instructions

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HEALTH LITERACY: IMPROVING UNDERSTANDING OF DISCHARGE INSTRUCTIONS

A Scholarly Project

Submitted to the

Faculty of Liberty University

In partial fulfillment of

The requirements for the degree

Of Doctor of Nursing Practice

by

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August 2017

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Abstract

Low health literacy impacts patient safety and negatively affects outcomes. Due to the nature of outpatient procedures, and fast door to exit times, educating patients in an effective manner is an important task to improve outcomes and ensure patient safety. This evidence-based practice project examined current discharge instructions, given to general surgery patients and found the instructions to be written on an eleventh to twelfth grade level. The current methods of educating ambulatory surgery patients was also changed, incorporating health literacy into the education process to allow patients to better understand how to care for themselves at home once discharged. The instructions were rewritten at a lower grade level using simple words and discussed with the patients preoperatively prior to sedation or anesthesia. Postoperatively the use of teach-back was added to assess the knowledge learned preoperatively and reiterate what was taught previously. The data was examined prior to the intervention and compared to post intervention data. Data collected included the Outpatient Ambulatory Survey Consumers Assessment of Providers and Systems (OAS CAHPS), Likert survey data during follow up phone calls, and patient satisfaction with teach-back technique. Incorporating health literacy methods and changing the method of presenting discharge instructions aided in increasing patients understanding and satisfaction.

Keywords: health literacy, outpatient surgery, discharge instructions, tools for health literacy, teach-back, Outpatient Ambulatory Survey Consumers Assessment of Providers and Systems
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List of Abbreviations

American Medical Academy (AMA)
Centers for Disease Control (CDC)
Cumulative Index to Nursing and Allied Health Literature (CINAHL)
Institute of Medicine (IOM)
Institutional Review Board (IRB)
National Institute of Health (NIH)
Outpatient and Ambulatory Consumer Assessment of Healthcare Providers and Systems (OAS CAHPS)
Outpatient Prospective Payment System (OPPS)
Rapid Estimate of Adult Literacy in Medicine (REALM)
Simple Measure of Gobbledygook (SMOG)
The Institute of Medicine (IOM, 2001) called for recommendations to improve healthcare. These improvements focused on care that was safe, effective, patient-centered, timely, efficient, and equitable (2001). The exact phenomenon of interest in this scholarly project is the effect health literacy played in education of patients and comprehension of the discharge instructions. This scholarly project reflected a change in the written instructions and the method in which the instructions were given to the patient. The current reading level of the written instructions was on an eleventh to twelfth grade level. They were rewritten to reflect simpler sentences written on a fifth to sixth grade reading level with a larger font size. This was to improve comprehension, adherence to instructions, and satisfaction of the discharge teaching.

The project leader works on a busy outpatient ambulatory surgery unit and discharge instructions are an important component of patient care. The current method of instruction for patients on this unit includes printing information and reviewing the information with the patient prior to discharge. The patients are often sedated or in pain, making the atmosphere less than ideal for discharge instructions. Once discharged home, patients call the unit or doctor’s office with questions or concerns. This was an area of concern. This needed to be handled in a manner that ensured the patient understood expectations, instructions, and improved satisfactions with the care they received. The teach-back method ensured that the patient understood what to expect once they were discharged. The Outpatient and Ambulatory Consumer Assessment of Healthcare Providers and Systems (OAS CAHPS, 2016) is a survey designed to measure experience of care for patients within an ambulatory surgery setting. At the time, the organization distributed the survey to patients on a volunteer basis. The mandatory implementation of
HEALTH LITERACY: IMPROVING UNDERSTANDING

This survey in 2018, required by Medicare and Medicaid, serves for reimbursement purposes. The questions focused on care received during their outpatient surgery experience and the information and preparation received for discharge and recovery. This will be linked to reimbursement starting in 2018, so the scores for these questions needed to be “satisfactory” for the facility to receive funds. Examining the current data on the OAS CAHPS survey demonstrated that this area needed improvement. The scores in the general surgery service line were lower than those examined at this facility. As a result, this was the area chosen to implement this project. The low scores regarding the discharge portion were linked back to health literacy and the understanding and comprehension of the patient.

Background

The US Affordable Care Act of 2010 defined health literacy as the degree to which an individual has the capacity to obtain, communicate, process, and understand health information and services to make appropriate health decisions (Coleman & Fromer, 2015). It is a key factor in communication between health care professionals and patients in all settings, and is important for all health professionals to possess adequate knowledge, skills, and attitudes regarding patients with low health literacy (Coleman & Fromer, 2015). Low levels of health literacy have been recognized as a stronger predictor of a person’s health more so than age, income, employment status, education level, or race. This was associated with a wide variety of adverse effects on health care processes and health outcomes (Al Sayah, Majumdar, Williams, Robertson, & Johnson, 2012). Health literacy was likely to have a very important role in the care of preoperative and postoperative patients’ due to the amount of instructions they received, and lack of
adherence to those instructions can result in negative outcomes (De Oliveira, McCarthy, Wolf, & Holl, 2015). Inadequate health literacy has affected more than 90 million Americans, and has been associated with adverse outcomes in the medicine field including increased hospitalization and greater mortality (De Oliveira et al., 2015). Poor health literacy has been estimated to cause an economic burden to the health care system of approximately $75 billion per year in the United States alone (De Oliveira et al., 2015).

Continuing to advance the field of health literacy is important for many reasons. These include the possibility of poor outcomes, lack of knowledge, lower participation in screening and the fact there has been a decline in infectious diseases and an increase in chronic diseases, such as Type 2 diabetes and heart disease (Pleasant, 2014). Patients need to be informed and educated on how to manage chronic disease during the postoperative period, and how the surgery or medications may affect their recovery.

Low health literacy is also associated with higher health care costs. A study of 92,749 veterans in the United States estimated that marginal and low health literacy is associated with an excess of $143 million in health care costs over a three-year period (Haun et al., 2015). Educating health care providers about health literacy, using teach-back and providing discharge instructions preoperatively can improve outcomes and healthcare costs. Limited health literacy is associated with increased hospitalizations and emergency department use; and with older adults it is associated with worse overall health status and higher mortality rates (Koh et al., 2012). Research has shown that communication is the key to positive and successful health results, particularly for patients with low health literacy skills; however, few studies have examined patients’
ability to converse about health information taught to them by providers (Wilson, Baker, Nordstrom, & Legwand, 2008).

The use of the teach-back method was considered an effective way to educate and assess learning (White, Garbez, Carroll, Brinker, & Howie-Esquivel, 2013). The teach-back method evaluates patients’ understanding by asking how they would follow instructions at home, while conveying that the provider communicates the message clearly (Koo, Horowitz, Radice, Wang, & Kleinman, 2016). The teach-back method has also demonstrated improved patient recall, and comprehension with improved outcomes (Koo, et al, 2016). There was a range of evidence-based interpersonal communication strategies in the literature that were effective for health professionals to use in clinical practice to improve communication, comprehension, and outcomes for patients (Johnson, 2013). To mitigate the effects of low health literacy, the evidence points to using plain language, simple sentences, and lower grade level wording for better patient understanding (Johnson, 2013).

Problem Statement

Postoperative discharge instructions were written at a higher-grade level than recommended and patients on the outpatient surgery unit did not always understand the instructions or home care. This problem stems from the issues of low health literacy. Postoperative and discharge instructions need to correspond with low health literacy. Patients clearly did not always understand what to expect in the postoperative period when discharged home. Information was provided on follow-up care such as pain management, nausea, diet, recovery, signs of infection and when to call the physician. This printed information is reviewed with the patient at time of discharge and is
completed in five to ten minutes. The instructions were also presented to the patients post operatively while still under effects of anesthesia. Patients are then discharged from the ambulatory surgery center. This process is not an effective way of ensuring that patients understand instructions. At the time, teach-back was not performed, and closed-ended questions were asked after the instructions. Often patients were so overwhelmed they did not know what to ask the nurse. The effects of sedation and anesthesia also made them less aware of the education process.

Effective communication showed a positive impact on patient satisfaction, compliance, and medical outcomes, and at the same time reduced the healthcare costs (Brangan, 2015). Written information needed to correspond with health literacy levels and readability formulas were a reliable way to assess this material. A Simple Measure of Gobbledygook (SMOG) readability analysis of the current discharge instructions displayed that the information was written at an eleventh to twelfth grade level. The SMOG analysis is a tool to measure the grade level of materials used in education and this grade yields a 0.985 correlation with a standard error of 1.5159 grades with the grade of readers who had 100% comprehension of test materials (2015).

Health literacy was considered a major driving factor in explaining disparities in healthcare (Sentell & Braun, 2012). Poor health literacy is associated with inadequate comprehension of surgical procedures and discharge instructions. Poor adherence to these instructions may jeopardize patient safety (De Oliveira et al., 2015). An understanding by all health professionals of the concept of health literacy, and the evidence-based strategies can decrease consumer demands, and has increased safety in healthcare (Johnson, 2015). Patients’ perceptions of care and understanding of their
discharge instructions were assessed using the questions in the Consumer Assessment of Healthcare Providers & Systems (OAS CAHPS). This data assessed pre-intervention and post-intervention for outcomes related to the project. Fisher’s Exact test was used to statistically analyze the data from the project. An Excel spreadsheet was used to analyze the data from the Likert surveys.

Overall 70% of all surgical procedures at the time were performed in the ambulatory setting, which may be a challenge for low literacy. The nurses gave the discharge instructions after surgery where cognitive function had been decreased due to anesthesia and analgesic medications (De Oliveira et al., 2015). Patients having outpatient surgery faced challenges with discharge instructions due to the decrease in time for presenting the information and the short length of stay. Patients often found the amount of discharge instruction to be overwhelming, and the retention and understanding of the instructions is one determinant of postoperative outcomes (Housepian, McGah, & O’Brien, 2016). Research also stated that patients who were well prepared before surgery had less anxiety and better outcomes, which improved patient satisfaction (Housepian, McGah, & O’Brien, 2016).

The teach-back method was one approach to educating patients that was not implemented at that time. This method had been shown to be an effective education process for patients with low health literacy, and it was an excellent opportunity for healthcare providers to enhance knowledge of patients with low health literacy using inexpensive and on-hand educational methods (Negarandeh, Mahmoodi, Noktehdan, Heshmat, & Shakibazadeh, 2012).
The timing of discharge instructions for ambulatory surgical patients may have also played a role in poor outcomes. Educating patients postoperatively, following administration of anesthesia, may not be the ideal setting, while educating patients prior to surgery may prove to be a better option. Prior to the implementation of this project, the nurse gave the discharge instructions postoperatively. The change to this practice would be to give the instructions prior to surgery once they arrive on the unit, using simple sentences and literature that is on a fifth to sixth grade level. The nurse presenting the information sat with the patient, made eye contact and spoke clearly and slowly with written instructions. The written instructions were displayed in a larger font size (16), compared to what was used at the time (12), and were written at a lower literacy level for better understanding and comprehension. The nurse caring for the patient then used the teach-back method postoperatively, prior to discharge. This information included infection prevention, postoperative pain, and anesthesia side effects such as nausea and vomiting. The patient then answered open-ended questions about what they had learned related to what they had learned. His or her family was also educated and included in this process.

**Purpose of the Proposed Project**

This evidence-based practice project’s purpose was to improve patient satisfaction and understanding of discharge instructions with health literacy factored into the information given to patients. Teach-back was used to assess their understanding of the instructions. The purpose was also to arm the patient with the knowledge needed for home so that if problems arose they knew what to do to prevent admission to the emergency department. The instructions were clear and concise, so that they understood.
The nurses caring for the patient possesses the tools and knowledge on how to educate the patient. The timing of the instructions was also changed and implemented prior to surgery. The instructions were rewritten on a fifth to sixth grade reading level. Most adults read at an eighth-grade level and approximately 20% of the population read at or below a fifth-grade reading level (Safeer, & Keenan, 2005). Healthcare organizations such as the National Work Group on Cancer and Health, American Medical Association, and National Institutes of Health recommend the readability of patient information material should be no higher than sixth-grade level, while the Centers for Disease Control and Prevention (CDC) recommends the readability to be lower than eighth-grade level. Educating patients at a lower grade level ensured better comprehension of the material. Educating the patients prior to surgery ensured they were not sedated or compromised to understand the instructions. Review of the instructions postoperatively reiterated what they had already learned. Using the teach-back method ensures patient understanding of home care needs.

**Clinical Question**

The population for the clinical question included adult patients aged 18-89 years with no cognitive deficits having general surgery. General surgery was defined for this study as any surgery performed by a general surgeon within the area served, and included surgeries such as laparoscopic cholecystectomies, hernia repairs, or breast surgeries, including lumpectomies. The intervention was the method in which they were educated for their discharge instructions. Taking health literacy into consideration, the instructions were rewritten at a lower grade level, and they were taught using plain language, teach-back method, and prior to having surgery. Comparison was the OAS CAHPS prior to
implementation and after implementation. The portion of the survey assessed was based on preparation for home and discharge instructions regarding pain, nausea and vomiting, bleeding and infection. The outcomes were improved scores in those areas and patients having a better understanding of discharge instruction.

**PICO Question**

In postoperative general surgery patients, does education before surgery using lower health literacy material, and using teach-back method postoperatively, affect patients understanding of discharge instructions and improve OAS CAHPS scores related to discharge domain? The questions on the OAS CAHPS survey that address the discharge domain included information on what to do if the patient had nausea, bleeding, pain, or infection after discharge. It also asks if patients were given written discharge instructions. Patients that understand discharge instructions will be better prepared and have less anxiety.

**Literature Review**

The literature review was performed using several databases to gather information. A database is an enormous collection of information organized to allow rapid search of topics (Moran, 2014). The databases used for the search were PubMed, which is a comprehensive resource for biomedical literature, the Cumulative Index to Nursing and Allied Health Literature (CINAHL), and Cochrane databases. The search engine used to examine the databases was EBSCO host. The key words used for the review include: health literacy, cost of health literacy, discharge instructions, patient education, communication, outcomes of poor health literacy, and teach-back. There is a great amount of literature on health literacy. When typing in the word health literacy into
the search engine, 9,077 articles came up and had to be greatly narrowed down. The
dates of the articles went all the way back to 1998; however, only articles from the past
10 years were reviewed with focus placed mainly on the previous five to seven years
from 2011 to 2017. Approximately 40 articles were chosen for the literature review.

The literature review matrix was organized based on the levels of evidence
utilizing the Melnyk table of evidence. The subject matter of the articles and the
relevance to the project in relation to health literacy. Any article that included
information on how to better educate patients and different methods including teach-back
was included. Articles related to outpatient surgery patients were included; however,
some articles that discussed inpatient teaching and health literacy were also included.
Articles that included other disciplines, such as pediatric or specific diseases, were
included based on the health literacy content of the articles.

The articles included in the literature review were meta-analysis, systematic
reviews, research articles, case-controlled studies, qualitative studies and expert opinion.
There were 10 level one articles included, 1 level two article, 4 articles included in level
three, 3 level four articles, 4 level six articles, and 9 level seven articles. There were
several expert opinion articles written by Andrew Pleasant, who is considered an expert
in the field of health literacy. Pleasant holds a PhD in communication from Cornell
University and has been an advocate for improving health literacy and researching the
topic. He has published numerous peer-reviewed journal articles on health literacy and is
the co-author of the book Advancing Health Literacy.
Health Literacy Disparities

The main theme of almost all the articles on health literacy was the fact that health literacy was lacking throughout all of healthcare, and that the disparity was between the patients’ ability to read and write and what to do with the information they received (Briglia, Perman, & Weissman, 2015; Smith & Engelke, 2016; Lapiz-Bluhm, Weems, Rendon, & Perez, 2015). Most of the articles stated low health literacy was a problem in the United States and the Joint Commission had reported that effective communication is an important aspect of patient safety, as well as a disconnect between healthcare providers and education of patients (Briglia et al., 2015; Lapiz-Bluhm et al., 2015). Caring for patients with low health literacy was important because not understanding or comprehending health information can have poor outcomes and affect patient care (Smith & Engelke, 2016). It is important to understand that limited reading and writing skills, speaking another language, or just not being able to see the information all contribute to health disparities. Data from the United States National Assessment of Adult Literacy demonstrate that only 12% of adults have proficient health literacy skills and 36% of adults have basic or less than basic health literacy skills (Stikes, Arterberry & Logsdon, 2015).

Outcomes

Most of the articles, also, had a main theme of low health literacy affecting outcomes. Most articles reviewed supported a correlation between poor or low health literacy and poor health outcomes. Surgical patients with co-morbidities such as asthma, congestive heart failure, and diabetes, needs to have sufficient health literacy to manage health care. Ambulatory surgery patients were at a greater risk of misunderstanding
instructions due to the length of stay and the amount of information presented to them after surgery. Outcomes were better when patients with low health literacy were educated with materials written at a sixth to eighth grade reading level, and simple sentences were used. (Dickens, Lambert, Cromwell & Piano, 2013; Smith & Engelke, 2016; Pleasant et al., 2016; Wang et al, 2013). Patients and visitors also needed to be more aware of health literacy and the implications it has on health.

**Education of Health Literacy**

Health literacy is emerging as a field of research and is a topic of great interest. It influences policy and outcomes (Pleasant, 2014). The literature in many articles also discusses methods to educate not only patients, but healthcare providers as well. Nurses, physicians, and non-physician personnel should all be educated in health literacy and methods to educate patients. Nurses often overestimate the consumers’ health literacy and even those who are well educated may still not understand health literacy (Coleman & Fromer, 2015; Hersh, Salzman, & Snyderman, 2015; Johnson, 2015; Rowlands, Berry, Protheroe, & Rudd, 2015). There were several articles written about methods of educating patients. Common themes of these articles include tools, such as teach-back, making sure material uses simple words on a fourth to fifth grade reading level (Champlin & Mackert, 2016; Engelke, 2016; Griffey et al., 2015; Negarandeh, et al, 2012; Protheroe & Rowlands, 2013; Wilson & Schub, 2016). Rapid Estimate of Adult Literacy in Medicine (REALM) is one tool or method of assessing and implementing instructions for patients (“Targeting Low Literacy,” 2015). Another tool to assess the grade level of materials is the SMOG readability analysis.
Models of Care Delivery

Models of care delivery for this issue in healthcare have been identified in some of the literature, such as patient-centered models for healthcare improvements and a model of patient competency (Jerofke, Weiss, & Yakusheva, 2013; Nebling & Jochem, 2010). Nebling and Jochem (2010) discussed critical health literacy and explained it as a process of imparting health-related competencies to individual citizens. This article continues to explain this process by allowing patients the knowledge to make informed and sovereign decisions with positive effects on their health (Nebling & Jochem, 2010). This process includes evidence-based knowledge about advantages and disadvantages of medical interventions, such as elective surgery, and allows them to make better informed decisions. Jerofke, Weiss, & Yakusheva (2013) discussed empowering patients by guiding and helping them realize they need to manage and be proactive in their healthcare. They also examined surgical patients and how the nursing care prior to discharge greatly impacted outcomes and post discharge care (Jerofke et al., 2013).

There was a magnitude of information in the literature to examine and review issues related to health literacy. There was a definite need to incorporate the assessment of health literacy into organizations, and the evidence is available that patient outcomes are affected by poor health literacy. It also affected costs, safety, and quality. There was a large area for improvement and the significance for change is important to incorporate into the healthcare system, physician offices, pharmacies, and the community.

Conceptual Framework

The conceptual framework for this evidence-based project was the Iowa model of Evidence-Based Practice to Promote Quality of Care. The Iowa model aided healthcare
providers the abilities to translate research findings into clinical practice (Titler et al, 2001). Many healthcare organizations, nursing leaders, and individual clinicians were not providing care consistently based on evidence, and preventable complications had an adverse effect on hospital reimbursement (White & Spruce, 2015). Evidence-based practice was best implemented into action by developing skills, supporting evidence-based practice among healthcare providers, and translating the evidence into practice.

The first step in the process was the selection of a topic from problem-focused or knowledge-focused triggers (2015). Problem-focused triggers included identified clinical problems, and knowledge-focused triggers included new research and guidelines from national agencies (2015).

The focus of this project was the problem of inefficient discharge instructions, and the knowledge-focus trigger was the research on health literacy and the effect with outcomes. The OAS CAHPS scores regarding the discharge domain on this outpatient surgery unit were lower in general surgery. These satisfaction scores were a firm metric used as a trigger point for this project. Reimbursement will be go into effect in 2018 based on these survey scores, so fixing this problem now will allow for better outcomes and reimbursements in the future.

The next step in the process was the formation of a team with stakeholders. The team should include interdisciplinary stakeholders that had an interest in the project (Titler et al, 2001). The team for this project included staff at the outpatient surgery center, nurses, surgeons, anesthesiologist, perioperative nurses, and patients. The next step was the retrieval of evidence through the literature. Clinical practice guidelines were patient-focused as well as scientifically sound, clinically useful, and informative for
nursing leaders, healthcare professionals, physicians, policy makers and public (White & Spruce, 2015). Once the team was formed, reviewed the literature, and discussed guidelines, the recommendations were made, and a pilot study done to implement the change (2015). To pique interest in the project the team was responsible for creating awareness, building knowledge and commitment, promoting action and adoption and pursuing integration and sustained use (2015). During this evidence-based project the implementation was simple and quick, and the staff were educated on the importance of health literacy and why the change was important. Often nurses view a change as something more they must do to the list of their many daily tasks.

The change in current practice of educating patients pre-procedure and the effect of health literacy on patient outcomes was presented to the staff on the unit. The staff was educated how to approach discharge teaching with the patients and how to use teach-back. A pilot study was done on the outpatient surgery unit with OAS CAHPS outcomes measured and monitored for improvement. A five-point Likert scale survey (see Appendix C) was administered during follow-up phone calls. If the scores improved due to the interventions of educating patients on their discharge instructions using the implemented measures, and patients felt more prepared to be discharged, then the pilot may be adopted and implemented hospital-wide. Implementation strategies such as communicating the new evidence-based guidelines through posters, emails, roving in-service, departmental meetings and computer-based learning modules should be presented.

Providing high quality, cost-effective care based on best practices is the responsibility of all nursing leaders and is an essential of the Doctor of Nursing Practice.
Essential I discusses the scientific underpinnings for practice, and expanding the discipline of nursing through the development of middle range theories and concepts helps to guide practice (Chism, 2013). The Iowa model provided a clear and concise framework to identify, plan, and implement an evidence-based practice within an organization. Through this framework clinical practice can be improved and the gap between research and practice reduced.

The steps in the Iowa Model made the process easy to change practice within an organization. The triggers were identified and realized that a change should take place, which allowed the evidence to become practice. Development of the question in which to answer occurred after the triggers were identified, and then the question was asked “Is this a priority?” If it was a priority within the organization, then a team was formed and the literature review was assembled and the evidence was examined. If sufficient evidence was seen in the literature review, then a pilot program was designed to get the evidence into practice. This project had more than sufficient evidence to support the trigger, and the fact that it will affect outcomes and reimbursement in the future makes the project a solid evidence-based practice. Once the pilot program was done, the data was collected, analyzed and the question was asked, “Is the change appropriate for adoption into practice?” If the answer is “yes,” then the pilot was implemented and disseminated into practice and into the organization.

**Theoretical Framework**

The theoretical framework for this project was based on Orem’s Self-Care Model (2006). Orem’s Self-Care Model (also known as the Self-Care Deficit Theory of Nursing) explained when care was needed for the patient, when the patient was unable to
The premise of the model was, at times, patients who can provide self-care, may need help with their care. Conditions that may require help with care may include, times of sickness, diagnosis of a chronic disease or when they have surgery. Their knowledge is challenged during these times and nursing care may be needed. There are three interrelated theories that compose Orem’s self-care deficit theory: the theory of self-care, the theory of self-care deficit, and the theory of nursing systems (Eldridge, 2014).

The theory of nursing systems discusses the fact that some patient situations require total nursing care, partial nursing care, and others just supportive nursing care with education and encouragement (Eldridge, 2014). The theory of self-care included initiating and performing activities on one’s own behalf to maintain life, health and well-being (2014). Self-care deficit was the portion of the theory that discussed the times when there was a gap between self-care demand, the activities the patient can do, and the activities that needed assistance from nursing (2014). The deficit portion occurred when a patient was sick, had a new diagnosis of a disease or illness, and had an injury or a surgical procedure. Orem’s theory had been used across the realm of nursing in inpatient, outpatient, and community settings and includes all age groups (2014).

This project required supportive nursing care in education of patients postoperatively. This project discussed the self-care needs of patients during the postoperative period and the comprehension of the discharge instructions. Nurses educated and provided assistance to the patient to meet the self-care needs for home after surgery. There was also a correlation between health literacy and the patient’s ability to comprehend and understand the instructions for home. According to Orem, foundational
capabilities such as reading, writing, verbal skills, reasoning, and counting are major components of an individual’s ability to perform self-care (Wilson et al., 2008). Self-care is defined as “the practice of activities that individuals initiate and perform on their own behalf in maintaining life, health, and well-being” (Orem, 2001, p. 43). Within this framework, the following propositions have been set forth: Self-care is the responsibility of the individual; people who participate in their own self-care possess the knowledge and skills needed, however, at times need health care providers to supplement their self-care (such as postoperatively); deficits in self-care result from a lack of knowledge about the current situation (such as surgery); and self-care behaviors that meet the needs of the patient results in better outcomes, improved quality of life and improved health and well-being (Wilson et al., 2008).

Improving a patient’s self-care can be obtained through careful education of the patient postoperatively. The aim of the nurses’ responsibility is to increase the self-care of the patient through education. The teach-back procedure has been suggested by several experts in health literacy as a method to promote and assess patient understanding of instructions (Wilson et al., 2008). This method allows patients the ability to speak back what they learned from the education process, allowing for better self-care once they are discharged. This also allows health care professionals the knowledge to supplement or focus on what else is needed to educate the patient to provide better self-care skills at home.
Methodology

Description of Project

The core of the project was to ultimately have better patient outcomes, and satisfaction as based on the OAS CAHPS questions related to preparations for home, and discharge instructions. Using the Iowa model for this evidence-based project guided the steps of the project. The purpose was to raise awareness of the important impact that health literacy has on patient outcomes to the staff on the surgery center, and to implement a new method of educating patients postoperatively, to increase patient understanding of discharge instructions. This was an evidence-based practice project utilizing a quasi-experimental design that evaluated retrospective OAS CAHPS survey data as compared to post intervention data. The change in the discharge teaching was implemented and the scores reviewed once the change has been made. During follow-up phone calls with the patients, a Likert survey (see Appendix C), which was created by the leader of the project, asked how they felt about their discharge education.

In this project, the dependent variables included the knowledge or understanding of the patients regarding health literacy and questions on the OAS CAHPS survey which related to preparations for home and discharge instructions. The plan was to change the knowledge base of the patient by educating them differently. The independent variable was the delivery of the education material to the patient. It included a change in the method of educating patients, from postoperatively to preoperatively, and the use of teach back method.
Measurable Outcomes

The objectives for this project were to increase patient satisfaction, compliance and improved understanding of discharge instructions as evidenced by the improved score on the OAS CAHPS survey questions related to discharge. A Likert survey showed a better comprehension of the instructions when follow-up phone calls were made to patients having general surgery. The outcomes measured were the OAS CAHPS scores before and after the implementation of the pilot study. The scores were analyzed three months prior and one month after the implementation of the project, and then the findings were averaged for each category. Patients were instructed to return the surveys promptly once they received them in the mail. The scores were examined for the months of December 2016, and January and February 2017. Patients were also asked a few questions on a Likert survey about their discharge instructions which hopefully strengthened the study. The plan was to see scores improve for the general surgery patients.

Subjects

The subjects for this project were patients having an outpatient surgical procedure that involved general surgery. The surgeries consisted of hernia repairs, laparoscopic cholecystectomies, breast surgery, or any other general surgery that did not involve an overnight stay in the hospital. The subjects were adults aged 18-89. Exclusion criteria included patients with known cognitive impairments. There were no exclusions based on gender, ethnicity, or race. There were seven general surgeons that operated at least once a week and six or seven patients on the operating room schedule daily for general surgery. This was a pilot study and the target for the sample size was at least 30 patients.
Setting

The setting was the outpatient surgery center at a community hospital, located in the southeastern United States. The unit was a 40-bed unit that performed outpatient surgeries such as general, urology, gynecologic, pediatric, plastic surgery, and procedures such as epidural injections for pain and endoscopic procedures. There were 25 nurses employed on the unit, full time, part time and limbo. Nurses were educated on the importance of health literacy and how it relates to outcomes and how to present discharge instructions to the patients during the pilot study. The data was collected at the facility on the questions in the OAS CAHPS survey related to preparations for discharge home. Prior to the study, OAS CAHPS scores were reviewed from a 90-day window, then the nurses were educated on the new method of discharge instructions. The pilot was implemented for 30 days, and then data was collected from the OAS CAHPS scores after the implementation. The scores were compared with a data set using Fisher’s Exact test for improvement and comparison. The questions reviewed on the OAS CAHPS scores focused on pain, infection, bleeding, and nausea and vomiting. Follow-up phone calls were also done with a Likert survey for the nurses to question the patients about their experience.

Tools

The tool to measure the outcomes was the OAS CAHPS. This tool is the Outpatient and Ambulatory Surgery Consumer Assessment of Healthcare Providers and Systems (OASCAHPS). Hospitals required to participate are those whose primary focus is to perform outpatient surgeries and procedures, who are Medicare certified, who have a CMS Certification Number and bills CMS under the Outpatient Prospective Payment
System (OPPS) (https://oascahps.org). The survey included 37 questions and was expected to take patients about 8 minutes to complete. The following are the composite measures on the survey: (a) About Facilities and Staff, (b) Communication About Your Procedure, (c) Preparations for Discharge and Recovery, (d) Overall rating of facility, and (e) Patient willingness to recommend this outpatient surgery center to family or friends. The questions for this project came from the “preparations for discharge and recovery” section of the survey. This project focused specifically on discharge.

The focus of this project was on the question regarding preparations for discharge and recovery. The discharge instructions were written at a lower health literacy level (fifth to sixth grade) and in a larger font size. Instead of presenting the discharge instructions to patients postoperatively when they are in pain or still sedated, the instructions were presented during the initial preoperative admission phase. Once the patients returned from surgery, they were presented the information again with the use of teach-back. Patients were surveyed during follow-up phone calls with a Likert survey and asked by the nurse who cared for them how well they felt their discharge instructions were, if they understood their instructions and what could have been better with the discharge education process. Interrater reliability was used for this project because it refers to consistency of measurement from rater to rater (Moran, Burson, & Conrad, 2014).

**Intervention and Data Collection**

The intervention was the change in the method of instructions given at discharge. The discharge instructions were written on a fifth to sixth grade reading level with pictures when needed. The instructions were given to the patient prior to going to
surgery and then again after surgery. Patients were asked to “Repeat back and Teach Back” what they have learned. The teach-back method is an effective method used to educate and assess learning (White et al., 2013). The pilot study was done on the outpatient unit and the data collected after one month of the pilot study. Prior to the pilot study, the staff were educated on the new method of discharge instructions for the patients. Staff were also educated on the importance of health literacy related to outcomes and how to use teach-back effectively with patients and families.

Analysis

The data was collected from the OAS CAHPS reports that were generated. Data was obtained from the reports monthly. The retrospective data was obtained up to three months prior to implementing the change, and then analyzed for one to two months after the implementation to ensure that the surveys had time to be returned. Only the data from the general surgery service line was examined. An account with Press Ganey, who distributes the OAS CAHPS surveys was formed and access was granted by the organization. The data was placed in a graph to show satisfaction scores prior to implementing the change. The scores reflect the numerical values of the questions in the OAS CAHPS survey. The outcomes show an improvement in the scores regarding discharge instructions, and the specific questions asked on the survey. This will hopefully affect patient outcomes and understanding of instructions. The overall goal was ultimately for patients to better understand what to expect after surgery and have no adverse outcomes or effects such as infection. This will decrease unnecessary visits to physicians or even emergency rooms.
This project involved a pilot study, so the data was collected and compared to the retrospective data. The outcomes of the pilot were analyzed and then decided if it would be adopted into practice. The follow-up phone calls with the patients or surveys done prior to the patient leaving included closed-ended questions about their satisfaction and understanding. The Likert scale was used for the responses and then the data analyzed and placed in a graph.

The feasibility analysis for this project has been reviewed. The resources included the staff at the outpatient surgery center, the literature, and educators and committee members. The cost of implementing the project was little to none to the organization, other than printing costs for the instructions. The cost was essentially cost neutral. At the time, the unit printed the discharge instructions for each patient. Once the larger font is implemented, there were two pieces of paper instead of one, however the organization absorbed the costs of the printed material. The benefits will outweigh the costs if the project proves to be a success by improving scores and reducing readmissions, infections or emergency room visits. If the patient understands how to care for him or herself at home, then the likelihood of readmission or problems will remain low.

The dissemination of this project took place on the outpatient surgery unit at a local community hospital. This evidence-based project is projected to improve OAS CAHPS scores and outcomes for the patients. Evidence-based practice should be the standard of care in all perioperative facilities (White & Spruce, 2015). Staff were educated on the importance of the project and the significance. The education was done on the unit during a staff meeting one week prior to the implementation of the pilot.
Reminders were posted on the unit and the lead of the project was available on the “go-live” day for any questions. Posters were displayed in the nursing station reminding staff what to do. Follow-up phone calls for the patients using the Likert survey were done 2-3 days postoperatively. Staff needed to be aware of the importance of health literacy and not just see it as another task. Creating awareness to staff about the advantages of health literacy related to patient outcomes was important in the dissemination (White & Spruce, 2015). The lead of the project was available to educate the staff, and on the first day of the pilot study was there to help implement the process. One or two other staff members were trained as “champions” to assist with the project during the 30-day window. Champions on the unit will act as leaders for the project when the lead is not available.

The nurses educating the patients were advocates for the patients. They provided patient-centered care, spent time with them before and after appointments, helped navigate complex healthcare systems, and educated the patients accordingly (Protheroe & Rowlands, 2013). Incorporating a few simple techniques can increase understanding of patient’s instructions, such as asking open-ended questions, limiting the amount of information, and asking patients to teach-back the information (Negarandeh et al., 2012).

Approval for Project

The evidence-based practice project, “Health Literacy: Improving Understanding of Discharge Instructions” received approval from Liberty University Institutional Review Board (IRB) (see Appendix F), and the healthcare organizations IRB (see Appendix G). Once approval was received, the nursing staff was educated utilizing a power point presentation, on health literacy and project implementation. The presentation explained the project, methods used, and instructions on how to educate the
patients. The patients included in the pilot study were general surgery patients only; exclusions included pediatrics patients, incarcerated patients, and patients with known cognitive impairments. The education process for the staff also included health literacy and the importance to patient outcomes, including discharge instructions. An educational bulletin board was developed on the unit as a resource for the staff.

**Interventions**

The staff on the surgery center were educated on the interventions for this project. The staff were also educated about the importance of health literacy with relation to outcomes for patients. Health literacy was defined for the staff and an educational bulletin board was placed on the unit with information about the project. The methods for the intervention included using simple words, larger font, pictures, material written on a lower grade level, and teach-back. The other difference implemented was educating the patients prior to surgery and then using teach-back with the patient and family prior to discharge home. The discharge instructions used were rewritten at a lower grade level, used simple words, and used a larger font for ease of reading. The staff were educated how to use teach-back and instructed to sit by the patient at eye level to educate the patients prior to surgery. The Likert survey was included during follow-up phone call and the staff had access to the surveys.

**Pilot Study on Unit**

Permission was granted to perform the pilot study on the unit by the manager. The pilot study began on the unit on March 1, 2017. The leader of the project was available on the unit with all the material needed to start the process, including the discharge instructions and Likert surveys for use at follow-up phone calls. The leader of
the project was also available to answer any questions. The discharge instructions were placed in the appropriate charts for the nurses to use. The pilot study ran for 31 days, from March 1-March 31, 2017. The nurses used the new discharge instructions written at a lower grade level and with larger font. The nurses were instructed to sit at the bedside with the patient and give them the instructions for home. After surgery when the patient was more awake before discharge, teach-back was used to question the patient’s response to the initial teaching. Any questions or misunderstandings were cleared up and the patients had to teach-back the information. Family members were also included in this education process and teach-back.

The Likert surveys were used throughout the month when follow-up phone calls were made, and this data was collected weekly. Patients were asked three questions on the Likert survey and any subjective comments were written verbatim at the bottom of the survey. Patients were reminded to fill out their OAS CAHPS surveys in a timely manner. Once the pilot project was completed, the staff resumed the previous way of educating patients. The data collection began one month after the pilot project, to allow time for OAS CAHPS surveys to be returned. Patients were also reminded to return the surveys and a reminder was written on the discharge instructions sent home with the patient.

**Data Collection**

The data collected on the unit began one month after the pilot project ended. The Likert surveys were done throughout the month as patients were discharged. This data was compared with OAS CAHPS scores prior to the implementation to see if the change affected the outcomes. The OAS CAHPS surveys were examined for the months of
December 2016 and January and February of 2017 prior to the intervention. Data obtained from the intervention month of March 2017 was analyzed and compared to data collected over the previous three month and April 2017. The data analysis began May 1, 2017. The Likert Surveys were examined, and the results of the Likert surveys were very positive. The staff provided positive feedback stating they liked the simplicity of the instructions and the pictures included with the instructions. Patient comments were also positive, and they liked the method of education. There were 40 Likert surveys collected; however, 4 of the surveys were unable to contact the patients postoperatively, therefore 36 surveys were included. There were 86 surgeries performed during the month of March. Only 76 of the surgeries performed during the month were used for the study. There were 22 OAS CAHPS surveys returned out of the 76 surgeries performed.

**Demographic Data**

There were 58 female patients operated on during the month of March. The ages ranged from 20-85. There were 28 male patients operated on the month of March. The ages ranged from 19-89. The surgeries included breast biopsies, or lumpectomies, laparoscopic cholecystectomy, hernia repairs, skin surgery such as removal of basal cell carcinomas, or lipomas, pilonidal cysts or rectal surgery, and temporal artery biopsies.

Of the 86 patients, one patient was 90 and the age range criteria was 18-89, so the 90-year-old was excluded. One other patient was incarcerated, so he was excluded. Of the remaining 84 patients, 8 were admitted for overnight observation for pain control or other complications and were not included in the study. Only those who had outpatient surgery and did not stay overnight were included.
Data Analysis

Initial examination of the OAS CAHPS surveys returned showed positive results. Looking at the top box scores (see Table 1) for the organization, which are raw scores, not compared with other hospitals, the scores were 100% for the month of March on the surveys returned. Top box scores are the amount of “always” or “yes” responses on the survey. The top box scores are the highest that can be obtained on the survey questions. The 100% was in all domains of discharge education including written instructions regarding recovery, subsequent pain, subsequent nausea, subsequent bleeding and response to infection. The sample size for the month of March was 22 on the return of the OAS CAHPS, which was 17% rate of return. In looking at the discharge domain of the other months, the scores ranged from 87.3-97.4. The Likert survey returns yielded 36, which was a 27% rate of return.

The Fisher’s Exact test from the software program Minitab (2010) was used to analyze the data from the Press Ganey OAS CAHPS surveys. Initially the plan for statistical analysis was to use the t-test to compare pre- and post-data. The sample size in the surveys returned was small, so the Fisher’s Exact test was more beneficial to analyze the data. The t-test may be inaccurate for samples in which the numbers in either sample is less than five or if the difference between the numbers of trials and events in either sample is less than five. Based on the data sample size and characteristics, the Fisher’s Exact test is accurate for all sample sizes, but can only be calculated when the null hypothesis states that the population proportions are equal (2010). The Fisher’s Exact test (p-value > 0.05) demonstrated that there is insufficient evidence that the proportions from March OAS CAHPS were different from the proportions in December, January,
February, and April. The p-values were less than the 0.05 on the analyzed data, and statistically there was not a difference. The Likert surveys, however, did show that patients felt better prepared and better educated for discharge home after surgery.

Table 1

*Top Box Score for General Surgery*

<table>
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<tr>
<th></th>
<th>Dec-16</th>
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<th>Feb-17</th>
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<td>100</td>
<td>100</td>
<td>100</td>
</tr>
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<td>Instructions regarding recovery</td>
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<td>96</td>
<td>82.4</td>
<td>100</td>
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<tr>
<td>Information re subsequent pain</td>
<td>87.5</td>
<td>88.2</td>
<td>100</td>
<td>100</td>
<td>100</td>
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<td>100</td>
<td>100</td>
<td>50</td>
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<tr>
<td>Information re subsequent bleeding</td>
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<td>Info on response to infection</td>
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*Note.* All data run by visit date.

The sample size for the Likert surveys was 36. There were three questions asked on the survey: (a) How well did you feel prepared for taking care of yourself at home after discharge? (b) How well did you understand your discharge instructions when you left the surgery center?; and (c) How satisfied were you with the methods of discharge education that was presented to you? In examining the Likert surveys, the 95% confidence interval for the mean of each question ranged from 4.5949-4.9967. Patients answered five a majority of the time, which was the highest possible answer for each question. Based on the Likert survey, patients were well satisfied and felt well prepared
to care for themselves at home. The subjective comments made on the surveys were positive as well.

**Significance and Implications for Practice**

This project has clinical significance and relevance in the methods to educate patients. Evidence base practices, such as teach back and material written at lower grade level have a significant impact on patient education. Despite the statistical insignificance, there is much discussion on how health literacy affects outcomes, and the project has clinical relevance in the field. Health literacy affects all patient population in healthcare, and understanding these instructions will provide for better care at home and better outcomes.

Many national organizations related to healthcare have noted the significance of assessing health literacy and the impact on patient outcomes. The significance for this topic and evidence-based project is very important for practice, ensuring that patients understand how to care for themselves at home. In accordance with the Affordable Care Act, Medicare has instituted financial penalties for hospitals with 30-day readmission rates that exceed a predetermined value (Postel et al., 2014). Readmission is often preventable, and while outpatient surgery patients may not actually fall into the readmission criteria for Medicare, the cost can still be immense and can be a financial burden to the patient and organization. There is a great deal of significance in the field of health literacy and policies are being written and formed related to this area of concern. Improving the understanding of health literacy and its impact on health outcomes requires a variety of research approaches, but screening measures can have a profound effect on educating patients (Champlin & Mackert, 2016).
The implications for practice are immense. Assessing health literacy, being more aware of health literacy, and making providers and patients aware that this is an area of concern, can improve outcomes, patient compliance, and aid in providing safe care for patients. Health literacy is not only a matter of concern for outpatient surgery and discharge instructions, but changes implemented with this project can be used hospital-wide for inpatients, diabetes education, heart failure education and even physician offices and pharmacies. Making the patients aware and opening the communication may reduce embarrassment or issues when patients cannot read or write. There are many areas for use of methods such as the one discussed within this project, and the outcomes can guide future practice throughout the facility. All healthcare material presented to patients for education purposes should be assessed for the grade level and written according to recommendations from Centers for Disease Control (CDC), National Institute of Health (NIH), and the American Medical Association (AMA). These organizations agree that material should be written at or below the eighth-grade reading level.

**Limitations**

Healthcare providers and nurses often overestimate the health literacy of patients and what they understand and retain (Dickens et al., 2013). More education to healthcare providers and nurses needs to be done, as well as in nursing school curriculums. The limitations to this evidence-based project include education of staff and understanding of importance. The staff on this unit were willing to make the change, and at times that is an arduous task. Gaining buy-in from staff members, and ensuring that they participate accordingly can be a limitation.
Time constraints and sample size were the biggest limitation to this project. Having time to educate the patients preoperatively was the biggest challenge, especially with the 0730 start cases. A patient would come two hours prior to their surgery time, but often first start cases were rushed to get to the operating room, so there would not be delays for the remainder of the day. The sample size for the OAS CAHPS surveys was also a limitation. This was anticipated because survey returns were often smaller in number than the facility wants. The sample size of 22 on the survey returns was a small number. The Likert survey’s sample size was 36 which was better, but still quite small. The need to continue to examine scores may have rendered an increase in the number of surveys returned.

**Dissemination**

The dissemination of this project took place on the outpatient surgery unit at a local community hospital. This evidence-based project can improve OAS CAHPS scores and outcomes for the patients. Evidence-based practice should be the standard of care in all perioperative facilities (White & Spruce, 2015). The staff were educated on health literacy through a power point presentation, poster in-services and live educational presentations on the unit and during staff meetings. Staff were educated on the importance of the project and the significance. Staff were made aware of the importance of health literacy and not just to see it as another task. Creating awareness to staff about the advantages of health literacy related to patient outcomes was important in the dissemination (2015). The leader of the project educated staff and on the first day of the pilot study was available to help implement the process. The project was well received and had positive comments from patients and staff.
The nurses educating the patients were advocates for the patients. They provided patient-centered care, spent time with them before and after appointments, helped navigate complex healthcare systems, and educated the patients accordingly (Protheroe & Rowlands, 2013). Dissemination for this project also included poster presentations within the organization, at other organizations, and submission for publication. This project has already been discussed at interdisciplinary meetings within the organization and will be presented at a local research council in November 2017. There has also been discussion of reviewing all discharge instructions on the outpatient unit and changing the material to a lower grade level, as well as using teach-back for all education. The education material written at a fifth to sixth grade level for general surgery patients was uploaded to the computer system to use for all ambulatory surgery patients. All units within the facility have access to these instructions currently if needed. A computer based learning program has been created and will be used to educate all staff within the organization on health literacy.

Future Use

There is still much to be done in the field of health literacy, and it needs to be on the forefront for patients within any healthcare setting. Patient and healthcare providers need to be better educated. Medicare and many insurance reimbursements are based on patient readmissions and outcomes, and educating patients so they understand their disease process, and how to manage it at home will allow for better outcomes and reimbursement for healthcare. Health literacy is multidimensional. It includes both system demands and complexities as well as the skills and abilities of individuals (Pleasant et al., 2016). Individuals may include patients and family members, and
providers of information may be healthcare providers, protocol developers, insurance organizations, and even pharmaceutical companies (2016). Everyone needs to take part in ensuring that health literacy is at the forefront of everyone’s education. Nursing schools need to incorporate this into the curriculum so that everyone is aware.

Tools to measure a patient’s health literacy also need to be implemented in healthcare organizations so that material can be matched with the health literacy level. This would create increased cost in healthcare. Computer-based programs could print educational material to match the health literacy of the patient, but there are many liabilities to ensure this is done appropriately. Ensuring that patients can read and write and comprehend what is presented to them by using simple sentences, lower grade level material, and teach-back are simpler ways to make sure patients understand instructions. The work on this project has raised awareness within this organization. A computer-based learning module has been developed for nurses to learn more hospital-wide about health literacy. There is discussion of brochures being developed on health literacy for patients, so they will speak up and ask questions if they do not understand, and many units are examining their education materials for health literacy issues. There has also been discussion of placing signs in patient rooms that state “speak up, if you do not understand.” The rewritten discharge instructions have been uploaded into the computer system for the outpatient surgery units to use with each patient at discharge. These instructions can be printed and given to the patients. This project has been successful within the setting implemented, and changing practice to improve outcomes and patient satisfaction and safety is the foundation of the Doctor of Nursing Practice. The voice of the Doctor of Nursing Practice advanced practice nurse can guide and develop future
projects in the field of health literacy, and ensure that patients learn and understand how to care for themselves.
References


doi:10.1080/10810730.2012.712621


Appendix A: Citi Training

COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM)
COMPLETION REPORT - PART 1 OF 2
COURSEWORK REQUIREMENTS

*NOTE: Reflect quiz completions at the time all requirements for the course were met. See list below for details. Omit recent quiz scores, including those on additional (supplemental) course elements.

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For this Report to be valid, the learner identified above must have had a valid affiliation with the CITI Program subscribing institution identified above or have been an paid independent learner.

Verified by:
# COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM)

## COMPLETION REPORT - PART 2 OF 2

### COURSEWORK TRANSCRIPT**

---

**Name:** Kimberly [Redacted]

**Curriculum Group:** Social & Behavioral Research [Basic Refresher]

**Course Learner Group:** Social & Behavioral Researchers

**Stage:** Basic Course

**Description:** Choose this group if you satisfy CITI training requirements for investigators and staff involved primarily in Social & Behavioral Research involving human subjects.

**Report ID:** 18413757

**Report Date:** 20-Sep-2016

**Current Score:** 89

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For this Report to be valid, the learner identified above must have had a valid affiliation with the CITI Program subscribing institution identified above and have been paid an independent Learner.

Verify:\*\*

---

For this Report to be valid, the learner identified above must have had a valid affiliation with the CITI Program subscribing institution identified above and have been paid an independent Learner.
IV. Your Recovery

1. Did your doctor or anyone from the facility prepare you for what to expect during your recovery?
   1. Yes, definitely
   2. Yes, somewhat
   3. No

2. Some ways to control pain include prescription medicine, over-the-counter pain relievers or ice packs. Did your doctor or anyone from the facility give you information about what to do if you had pain as a result of your procedure?
   1. Yes, definitely
   2. Yes, somewhat
   3. No

3. At any time after leaving the facility, did you have pain as a result of your procedure?
   1. Yes
   2. No

4. Before you left the facility, did your doctor or anyone from the facility give you information about what to do if you had nausea or vomiting?
   1. Yes, definitely
   2. Yes, somewhat
   3. No

At any time after leaving the facility, did you have nausea or vomiting as a result of either your procedure or the anesthesia?
   1. Yes
   2. No

Before you left the facility, did your doctor or anyone from the facility give you information about what to do if you had bleeding as a result of your procedure?
   1. Yes, definitely
   2. Yes, somewhat
   3. No
At any time after leaving the facility, did you have bleeding as a result of your procedure?

1 □ Yes
2 □ No

Possible signs of infection include fever, swelling, heat, drainage or redness. Before you left the facility, did your doctor or anyone from the facility give you information about what to do if you had possible signs of infection?

1 □ Yes, definitely
2 □ Yes, somewhat
3 □ No

At any time after leaving the facility, did you have any signs of infection?

1 □ Yes
2 □ No
Appendix C: Likert Survey Questions

1. How well did you feel prepared for taking care of yourself at home after discharge?

5- very prepared  4- somewhat prepared  3- neutral  2- somewhat unprepared

1- very unprepared

2. How well did you understand your discharge instructions when you left the surgery center?

5- very well  4- somewhat well  3- neutral  2- not very well  1- did not understand at all

3. How satisfied were you with the method of discharge education that was presented to you?

5- Very satisfied  4- Satisfied  3- Unsure  2- Dissatisfied  1- Very dissatisfied

Please write down any comments that the patient makes about their discharge teaching.
Appendix D: Permission to Reproduce OAS CAHPS Survey Questions

Hi Kim

The OASCAHPS survey was designed and published by CMS. It is in the public domain and as such you can use it in your dissertation without approval.

Thanks

Press Ganey Advisor
Appendix E: Letter of Permission to Use The Iowa Model for Conceptual Framework for Project

Mon 9/26, 11:05 AM
Parr, Kim
You have permission, as requested today, to review/use the 1998 *Iowa Model of Evidence-Based Practice to Promote Quality Care*. Click the link below to open.

Copyright of *The Iowa Model of Evidence-Based Practice to Promote Quality Care* will be retained by The University of Iowa Hospitals and Clinics.

Permission is not granted for placing the Iowa Model on the internet.

*The Iowa Model* - 1998


In written material, please add the following statement:

- *Used/Reprinted with permission from the University of Iowa Hospitals and Clinics. Copyright 1998. For permission to use or reproduce the model, please contact the University of Iowa Hospitals and Clinics.*
Appendix F: Liberty University IRB Approval

December 27, 2016

Kimberly F. Parr
IRB Application 2739: Health Literacy: Improving Understanding of Discharge Instructions

Dear Kimberly F. Parr,

The Liberty University Institutional Review Board has reviewed your application in accordance with the Office for Human Research Protections (OHRP) and Food and Drug Administration (FDA) regulations and finds your study does not classify as human subjects research. This means you may begin your research with the data safeguarding methods mentioned in your IRB application.

Your study does not classify as human subjects research because evidence-based practice projects are considered quality improvement activities, which are not considered "research" according to 45 CFR 46.102(d).

Please note that this decision only applies to your current research application, and any changes to your protocol must be reported to the Liberty IRB for verification of continued non-human subjects research status. You may report these changes by submitting a new application to the IRB and referencing the above IRB Application number.

If you have any questions about this determination or need assistance in identifying whether possible changes to your protocol would change your application’s status, please email us at

Sincerely,
Appendix G: Centra IRB Approval Form

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**Institutional Review Board**

**EXEMPT RESEARCH CHECKLIST**

Version 4. 15NOV2016

**Principal Investigator:** Kimberly Parr, BSN, RN

**Title of Research Project/Study Title:** Health Literacy: Improving Understanding of Discharge Instructions

<table>
<thead>
<tr>
<th>Checklist Statements</th>
<th>True</th>
<th>Not True</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category 1 – For Educational Settings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. The research will only be conducted in established or commonly-accepted educational settings including but not limited to schools and colleges. (May include other sites where educational activities regularly occur.)</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>2. The research will involve only normal educational practices, such as (i) research on regular and special education instructional strategies, or (ii) research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>3. The research will not involve individuals as participants who are known to be prisoners.</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>4. The research is not subject to FDA regulations.</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>

**Category 2 – For Educational Tests, Surveys, Interviews, Public Behavior Observation:**

5. The research will involve only the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior. | ✓    |

**Address statement 6 only if the research will involve children as participants. If children will NOT participate, check N/A and continue with statement 7.**

6. The procedures will be limited to the use of educational tests (cognitive, diagnostic, aptitude, achievement) or observation of public behavior where the investigator will NOT participate in the activities being observed. | N/A  |

7. The information obtained from educational tests, survey procedures, interview procedures or observation of public behavior will be recorded in such a manner that human subjects CANNOT be identified, directly or through identifiers linked to the subjects. | ✓    |

*"True" to either statement 7 or 8 will qualify for exemption provided that statements 9 and 10 are true.*

8. Any disclosure of the human subjects' responses outside the research could NOT reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation. | ✓    |

9. The research will not involve individuals as participants who are known to be prisoners. | ✓    |

10. The research is not subject to FDA regulations. |          |
Appendix H: Letter of Permission from Unit Manager

To Whom It May Concern:

I give full permission for Kim Parr to participate in a health literacy project on our unit, Surgery Center. Kim is engaged within the discharge instructions portion of postoperative patient care, and I am excited to see what she does throughout her career as a student and Registered Nurse. I am more than pleased to give her the opportunity to participate in this project on our unit.

Sincerely,

[Redacted]

[Redacted]

Surgery Center — Unit Manager