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Educating Medical--Surgical Nurses to Improve Nursing Knowledge and Understanding of Health Literacy

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This is to certify that the doctoral study by

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has been found to be complete and satisfactory in all respects,
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Project Submitted in Partial Fulfillment

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Abstract

Low health literacy levels put patients at greater risk for poorer compliance and access to care, which leads to worse patient outcomes. Nurses must understand health literacy to improve health literacy for their medical surgical patient population. It is necessary for a formal education program on this topic. The purpose of this project was to increase medical surgical nurses' awareness and knowledge of the importance of health literacy and to introduce the REALM-SF tool to assess a patient's literacy level, allowing a nurse to better individualize the education provided to the patient. Lewin's change management theory was key in the development of this project with attention to his three stages of change acceptance. The practice focus question was, "Will medical–surgical nurses show an improvement in their knowledge of health literacy when comparing measurement of knowledge pre education and immediately post education"? The HL-SF12 for registered nurses tool was used to collect data for this project as a pre- and post-implementation knowledge assessment. Thirty-one medical surgical nurses participated in this education session. The results of this analysis show that there is a significant gap in medical–surgical nurses' knowledge of health literacy. However, all participates showed a significant increase in their scores from pretest to posttest after the educational module, which signifies that this education program was successful. Assessing health literacy is a major step towards improving the delivery of patient education by nurses and assists the patients in the management of their medical problems. All of this leads to positive social change by making sure that the education provided by the nurses is understood and received well by the patients and their families.

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Dedication

This project is dedicated to my loving husband and best friend, Charles Smith, and our three beautiful girls, Kyleigh, Caitlin, and Aubree. Charles, thank you for continuously supporting me, encouraging me, and inspiring me throughout this educational endeavor. Thank you for always being there to help push me forward, during tough times when I lost motivation and became tired. Thank you for reminding me to take a break, when I spent hours on the computer in one sitting, to step away and spend time with our girls. I will be forever grateful to you for your love and support. To my girls, remember to always follow your dreams and reach for the stars. It may not be easy, but it will always be worth it. Mommy loves you with all her heart. Thank you for all your love, support, and understanding during this journey, I know it was not always easy for you. I hope I made you proud.

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First and foremost, I thank God, for always providing me with the strength to push forward and complete this journey.

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Last, but not least, to my family. I would like to acknowledge my late grandparents, Jacqueline and Eugene Ciecka, who have always inspired me and pushed me to further my education and reach for the stars. From a young age, I knew that nursing would be my career, but little did I know that it would also become my passion. Thank you for bringing me strength, patience, and inspiration right when I needed it throughout this rigorous journey. To my husband Charles, perhaps no one has been more pivotal in the success of this endeavor then you. Your belief in me-- past, present, and future-- will never be taken for granted. Your unconditional love and support have persisted, despite the various mental, physical, and emotional challenges of this doctoral journey. I am forever grateful to have you by my side, as my husband and my best friend.

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Section 1: Nature of the Project

Introduction

Though the health care environment is complex and changing, the same goals remain: provide high quality patient care and improve patient outcomes. The objectives of Healthy People 2020 include achieving health equality, decreasing and eliminating health disparities, and improving communication between health care providers and the patients they serve (Office of Disease Prevention and Health Promotion, 2017). But the problems surrounding low health literacy in the United States are significant, with research indicating that only 12% of adults nationwide have proficient health literacy skills (Kennard, 2016). It is important for patients to be informed on their medical condition and treatment plan so that they can advocate for their own health care choices. It is also important for patients to be well informed so that they can properly care for themselves at home.

The complexity of the acute care hospital setting can be overwhelming for patients. It is important for the clinical nurse to recognize the complexities during their hospital admission, often related to medical terminology, treatment plans, and patient care equipment and devices. This also includes education on the diagnosis and treatment plan, goals, new medications and potential adverse effects, and follow-up needs. From a patient perspective, management of health care needs becomes even more challenging when the complexities of health care are combined with low health literacy. Low health literacy creates a risk for poorer patient compliance and access to care, which affects patient outcomes (Hernandez, French, & Parker, 2017). However, clinical nurses practice

at the bedside where they can recognize when a patient is struggling with low health literacy, which then provides an opportunity for the registered nurse to intervene early to meet the patient's needs and help them to understand their health care plans.

The medical–surgical nurse cares for patients of various ages and diagnoses who are often dealing with complicated health issues, and they are in a position where they can recognize patients who are struggling with low health literacy to intervene and individualize patient education and communication with the patient. Patients with low health literacy face challenges to their personal health care, as they are often unable to read and follow discharge instructions or messages on prescription bottles. Medical jargon used by providers or on written instructions may exacerbate the problem. Additionally, as technology is used more frequently, patients with low health literacy may be unable to make an appointment or schedule an outpatient study. Further, patients may become fearful, shamed, and embarrassed, and they may not ask questions to clarify their needs. By identifying a patient struggling with lower health literacy, the nurse can identify the best way to teach the patient, with the intent to maximize understanding of their health care conditions, medication, plan of care, and follow-up needs. But to promote patient engagement in their health care plan, nurses need to be knowledgeable on the topic of health literacy.

Problem Statement

There was no formalized education at the project site provided to medical–surgical nurses on health literacy. Thus, this doctoral project addressed the need for a formal educational program for medical–surgical nurses on health literacy. Nurses must

have the knowledge and understanding of health literacy to improve health literacy for their medical–surgical patient population. It is necessary to improve nurse's knowledge of health literacy, which can be achieved through a formal education program on this topic.

Purpose Statement

The purpose of this project was to increase medical–surgical nurses' awareness and knowledge of the importance of health literacy. The practice focus question was: Will medical–surgical nurses show an improvement in their knowledge of health literacy when comparing measurement of knowledge preeducation and immediately posteducation? In this doctoral project, the gap in practice was addressed by providing education to nurses on health literacy.

Medical–surgical nurses must have the skills to apply health literacy principles to patient education resources. It is important for the medical–surgical nurse to understand health literacy; how low health literacy affects follow-up, compliance with the treatment plan, and ultimately patient outcomes; barriers that patients with greater health literacy demands face; clues that nurses can look for indicating low health literacy skills; and know the importance of evaluating the patients learning by using the teach-back technique. Health literacy refers not only to the abilities of the patients but also to the nurses who are providing health education, education on new medications, and discharge instructions. Nurses are on the front-line in the hospital setting, so there is significant responsibly shared in the bedside nursing team to ensure that the patient understands his or her diagnosis, treatment plan, and follow-up needs.

Project Goals and Objectives

Project goals and objectives were developed in accordance with the project hypothesis that a professional education program would increase medical–surgical nurse's knowledge on the topic of health literacy. Future goals include increasing patient satisfaction scores for the nurse communication domain, medication domain, understanding of the transition plan, and understanding of the plan of care and follow-up needs.

Nature of the Doctoral Project

An educational program was provided for medical–surgical nurses on health literacy and the importance of nurses' awareness of a patient's understanding and comprehension of their health. This professional education was developed using primary sources of evidence from the literature to improve the nurses' knowledge and skills regarding health literacy. The nature of this project was staff education through a formal education program using PowerPoint and a pre- and post-test approach. The goal was to educate the nurses to improve their knowledge regarding health literacy and introduce a health literacy assessment tool.

Quality improvement is important to improve patient care and outcomes, and nurse leaders are pivotal to hospital quality initiatives. This project included a systematic plan with a short-term goal of improving nursing knowledge and a long-term goal of improving patient satisfaction. This educational program was provided for medical–surgical nurses on

- An overview of health literacy;

- How low health literacy affects follow-up, compliance with the treatment plan, and ultimately patient outcomes;
- Barriers that patients with greater health literacy demands face;
- Clues that nurses can look for indicating low health literacy skills;
- The importance of evaluating the patients learning by utilizing the teach-back technique.

Significance

The significance of the project is a successful implementation of an educational program for the medical–surgical nurses, which will lead to individualized patient education through these nurses. This doctoral project holds significance for the nursing field because it can be applied to other areas of nursing practice to improve nurse understanding of health literacy and the negative effects of low health literacy, which will allow for nurses to adapt the care they provide to their patients through individualized patient education.

Bedside nurses will improve their knowledge base and skill set on health literacy, which will influence a positive change in practice specific to patient education. Providing education to the bedside nursing team promotes a respectful and supportive environment for the patient, focusing on the patient's individual needs, and providing patient-centered care. Teaching nurses on how to address low health literacy also benefits patients and helps reduce health disparities (Cornett, 2017). Medical–surgical nurses can share this information with colleagues and use what they learn in their interactions with patients and families. Experienced nurses who act as mentors and preceptors to student nurses,

orientees, and novice nurses can also translate what they learn in this program and work with and support their colleagues on this topic.

Summary

Management of health care needs for the hospitalized patient becomes even more difficult when the complexities of health care is combined with low health literacy, which affects patient outcomes (Berkman, Sheridan, Donahue, Halpern, & Crotty, 2011). There was no formalized education at the project site provided to medical–surgical nurses about the effects of low health literacy. With this doctoral project, the identified nursing practice gap was addressed through a formal education session on health literacy and the importance of nurses' awareness of a patient's understanding and comprehension of the patient's health. The goal was to improve the nurses' knowledge regarding health literacy, and the nature of this project is educational. In the next section, the context of the problem, supporting background, and theoretical approaches to address this practice issue will be discussed.

Section 2: Background and Context

Introduction

Low health literacy creates risk for patient compliance and can lead to negative patient outcomes (Geboers et al, 2015). There was no formalized education at the project site provided to medical–surgical nurses about the effects of limited health literacy. The purpose of this project was to increase medical–surgical nurses' awareness and knowledge of the importance of health literacy. In this section, I will detail the concepts, models, and theories used in the project. Relevance to nursing practice will also be discussed and the local context and relevant background presented. Finally, I will discuss the role of the doctoral student and project team.

Concepts, Models, and Theories

Health Literacy Framework

The health literacy framework shows literacy as the foundation of health literacy, and health literacy as the mediator between an individual person and the context of health (Nielsen-Bohlman, 2004). Individual context of health varies from person to person but can include social skills, cognitive abilities, emotions, cultural and religious beliefs, and physical conditions such as visual or auditory deficits (Nielsen-Bohlman, 2004). Literacy includes reading, math, writing, and speech skills (Nielsen-Bohlman, 2004). Health literacy directly affects health-related outcomes and costs, such as compliance to the plan of care and follow-up needs (see Figure 1).

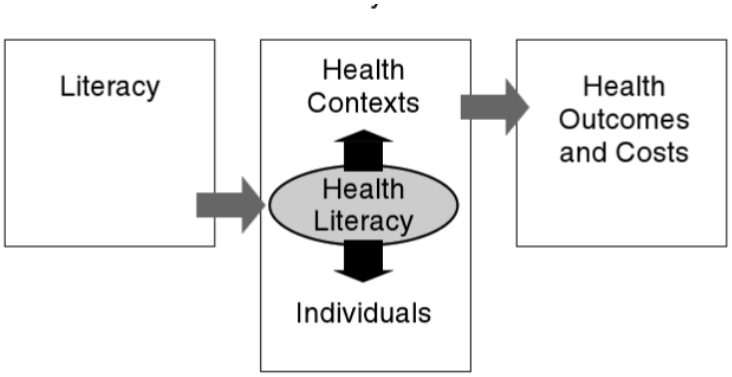

Figure 1. Health literacy framework. Adapted from *Health Literacy: A Prescription to End Confusion*, by L. Nielsen-Bohlman, 2004, p. 33. Washington, DC: National Academies Press.

Education System

The education system in America plays a major role in a person's literacy development, as kindergarten through 12th grade education is responsible for the development of literacy and numeracy skills. The number of years of schooling completed is not a valid indicator of health literacy. The skills gained through education form the foundation for more complex skills later in adult life, including comprehension of disease process, understanding of the severity of chronic illness, and the relationship of comorbidities with the consequences of not following the treatment plan. More vulnerable populations for poor health literacy include those who did not complete high school; those who completed high school but did not acquire strong skills; adult immigrants who did not have access to education or the opportunity to speak, read, or write in English; and elders who did not have full schooling opportunities (Nielsen-Bohlman, 2004). The ability to not only read but to comprehend what one is reading is

fundamental, and the intricate and complex health care environment is difficult to navigate for those with low health literacy (Williams, Muir, & Rosdahl, 2016).

Lewin's Change Management Theory

When implementing a change within the organization, Lewin's theory is useful to understand human behavior in relation to change management and resistance to change. Lewin's theory can provide support for nursing leaders during transitions, such as through this educational project where staff commitment and buy-in will need to be priority to bring value to this project. Lewin discussed how forces, once identified, could affect the change process and provide understanding of a group's behaviors (Shirey, 2013). Lewin identified three stages of change:

1. Unfreezing: It is important to provide the rational and background data as to why health literacy is a topic of interest in the acute care hospital setting. This phase will promote buy-in from the nurses involved, so that they can open their minds to gain knowledge through this educational project.
2. Moving: Driving forces will support this phase through the educational project, as knowledge is shared with the nurses. It will be important to keep the lines of communication open, provide details as to how the nurses can assess their patients for poor health literacy skills, and identify strategies to overcome the barriers.
3. Refreezing: When the nurses involved in the education have used the knowledge gained through this experience to influence their personal nursing practice at the bedside. This will improve the care of the patient at the bedside,

which will ultimately improve patient outcomes and patient satisfaction. (Shirey, 2013)

Definitions of Terms

Health literacy intervention: Nursing interventions and processes designed to mitigate the effects of low health literacy on patient–nurse communication and patient education (Stiles, 2011).

Health literacy: Health literacy is defined as "the degree to which individuals have the capacity to obtain, process and understand basic health information and services needed to make appropriate health decisions" (Stiles, 2011, p. 35). Health literacy is not independent of general literacy.

Limited (or low/poor) health literacy: A health literacy skill level that is lower then what is necessary to obtain, process, and understand basic health information to make appropriate health related decisions (Stiles, 2011).

Numeracy skills: Health literacy includes numeracy skills, sometimes referred to as math skills or number skills. Being numerate means understanding numbers and mathematical concepts and having the ability to apply these numeracy skills to solve problems (Zimmerman, Woolf, & Haley, 2014).

Patient education: Patient education is defined as "the process of influencing patient behavior and producing changes in knowledge, attitudes, and skills necessary to maintain or improve health" (American Academy of Family Physicians, 2000, para. 1). Patient education is essential to improving compliance and health maintenance, which improves outcomes.

Rapid Estimate of Adult Literacy in Medicine (REALM-SF): This is a 7-item word recognition test that nurses can use to perform a quick assessment of a patient's health literacy level. The tool was validated for use in 2007 and is recommended by the Agency for Healthcare Research and Quality (AHRQ; see Appendix A.)

Successful functioning: Also referred to as *functional health literacy*, successful functioning encompasses the ability for an individual to control their health and health actions and determinants, identify patterns of behavior, and reflect critically on their functioning to promote self-care and self-management of their health (Stiles, 2011).

Clarifying the Characteristics

Defining characteristics of health literacy include reading and numeracy skills, comprehension, successful functioning, and the capacity to use information to make personal health care decisions (Rowlands, Shaw, Jaswal, Smith, & Harpham, 2015). Health literacy includes numeracy skills, used in calculating glucose levels, weights, measuring medications, understanding nutrition labels, and calculating the financial pieces of health care such as co-pays and deductibles. Successful functioning encompasses the ability of an individual to control their health and health actions and determinants, identify patterns of behavior, and reflect critically on their functioning to promote self-care and self-management of their health. A person with functional health literacy is one who is empowered to act on their health care needs, regardless of circumstances, using their advanced cognitive and social skills (Rowlands et al., 2015).

A person's educational status may not indicate his or her reading level or ability, as deficiencies may be masked out of fear or embarrassment (Ganesh, 2017). Education

level has the potential to impact an individual's skills, including reading, math, and literacy which contributes directly to a person's health status. This is because attaining these skills contributes to more active communication with the person's health care team. A two-way conversation can occur, where the individual can be their own advocate, participate actively in their care, and ask any necessary clarifying questions. In turn, the patient benefits from their ability to understand and comprehend their own health needs: they can follow-instructions for follow-up care, read medication labels to take medications as prescribed, and navigate the health care system to make appointments (Zimmerman, Woolf, & Haley, 2014). Those with low health literacy struggle with these basic tasks, which leads to increased hospital stays, readmissions, decreased preventive care and an overall poorer health status (Zimmerman, Woolf, & Haley, 2014).

There are many tools available for clinicians to measure health literacy levels, including the REALM-SF, Newest Vital Sign, and the Test of Functional Health Literacy. The REALM-SF, the tool chosen for this project, is a 7-item word recognition test to provide clinicians with a valid quick assessment of patient health literacy. This measurement tool is a word recognition test which has been field-tested and validated in diverse research settings, and studies have found excellent agreement with the 66-item REALM instrument in terms of grade-level assignments (Arozullah et al, 2007). The REALM-SF can be administered in a short period of time, less than 2 minutes, which makes it the ideal tool for the acute care medical–surgical setting (Ganesh, 2017).

Relevance to Nursing Practice

Because health literacy is a critical component of health care in America, nurses need to be able to recognize the need to adjust their patient education plan based on patients' needs and literacy level. Nurses need to identify and challenge the barriers that present to the situation. In the hospital setting, nurses are the main source of information for patients and families. Nurses must understand health literacy to be able to assess for health literacy limitations and intervene appropriately, to ensure understanding of any education provided to the patient and family during the hospital stay.

Local Background and Context

The project site is in a large community hospital in a Northeastern city. The setting will be the adult health medical–surgical units, which include: a 51-bed medical–surgical unit with remote telemetry capabilities, 18-bed medical–surgical unit, and 15-bed orthopedic unit with medical–surgical overflow. Typical age of patients is adults, over age 18, but this site has a large geriatric population over age 55. Typical diagnoses for the site include, but are not limited to: diabetes, congestive heart failure, urinary tract infection, pancreatitis, mental status change, abdominal pain, fever, cellulitis, drug overdose, cancer, alcohol withdrawal, pneumonia, status post-surgical interventions, chronic obstructive pulmonary lung disease, fractures needing repair, etc. The average nurse to patient ratio is 5:1. Clinical members of the nursing team include: registered nurses, nursing assistants, unit clerk/coordinator, assistant nurse manager, nurse manager, nurse case manager, and social worker. Hospital readmissions are an area of opportunity

for the project setting. Patient satisfaction is another area of opportunity for the project setting.

Mission Statement

This DNP project will align with the organizations philosophy of continual performance improvements. This professional education will be developed to improve the nurse's knowledge base and skill set on the topic of health literacy, which will result in better patient education and improved patient outcomes.

Role of the DNP Student

I am nurse manager of two of the three medical surgical units in the hospital. One of the expectations of nurse management is to drive and promote positive patient outcomes through process improvement and quality improvement. Education of nursing staff about health literacy is a quality improvement intervention, which promotes positive patient outcomes. Overall, for this doctoral project I assumed all responsibilities. I planned, implemented, and analyzed this education program.

Planning involved establishing program goal and objectives, the development of the educational curriculum as well as the pre and post-assessment tools. Through an extensive literature review and analysis, best practices were sought to add into the education curriculum. Sources of evidence included: research articles, peer-reviewed journals, scholarly articles on health literacy, and review articles. The strategy was to obtain evidence through a literature review of PubMed and EBSCOhost databases within the library using keywords: *health literacy, addressing health literacy, assessing health literacy in the hospital setting, nurse education, nurse understanding of health literacy,*

patient education. Key words were used to broaden the scope of the literature search and relevant articles will be reviewed. This literature was reviewed thoroughly.

An educational program using PowerPoint that addresses health literacy was developed and implemented. The target audience included all medical–surgical nurses. Participants were given a pre-test and a post-test on their understanding of health literacy. Nurses were also provided the opportunity to attend a post-education assessment to address any follow-up needs.

The project objectives included the following:

1. Develop and implement a web-based educational program using PowerPoint that addresses health literacy.
2. Educate medical–surgical nurses on health literacy, using the PowerPoint
3. Introduce and educate medical–surgical nurses on the health literacy assessment tool, REALM-SF.
4. Measure the effectiveness of the education program in a convenience sample of a population of RNs at project site

Role of the Project Team

The project team included medical–surgical nursing management for 6E, 6PW, and 5PW, as well as the clinical outcomes managers for the three areas. Stakeholders identified but not directly involved include the director of nursing, director of research, and vice president of clinical services, as their support and expertise brought value to this project.

I assumed all responsibilities as leader of the project team. We met to discuss the project concepts, background, and theory, identified need, and established objectives. Once the educational program was formalized and finalized, it was added to the agenda of the Institutional Review Board (IRB) at the project site. Approval was gained from both the Walden IRB and the project site's IRB.

Summary

In summary, this doctoral project was designed to educate the medical–surgical nurses on health literacy. In this section, I detailed the concepts, models, and theories used in the project. Relevance to nursing practice was discussed and the local context and relevant background presented. Finally, I discussed the role of the doctoral student and project team. In the next section, the practice problem, sources of evidence, and analysis methods will be discussed.

Section 3: Collection and Analysis of Evidence

Introduction

This project addressed low health literacy that affects patient outcomes (Geboers et al, 2015) by providing education at the project site to medical–surgical nurses about the effects of low health literacy. In addition, nurses at the project site do not assess patients for literacy level. The purpose of this project was to increase medical surgical nurses' awareness and knowledge of the importance of health literacy and to introduce a health literacy assessment tool to be used on the medical–surgical units. In this section I will present the practice-focused question and plan for collection and analysis of data.

Practice-Focused Question

The practice focus question was: Will medical–surgical nurses show an improvement in their knowledge of health literacy when comparing measurement of knowledge preeducation and immediately posteducation? In this doctoral project, the gap in practice was addressed by providing education to nurses on health literacy. The goal was to improve the nurses' knowledge regarding health literacy and promote the REALM-SF tool to assess patients' literacy levels and allow for individualized education (AHRQ, 2017). I hypothesized that a formalized educational program on health literacy and the importance of nurse's awareness of a patient's understanding and comprehension of their health through a validated health literacy screening tool will provide medical–surgical nurses with knowledge that they can put into their practice immediately at the bedside to improve patient education and patient outcomes.

Practice-Focused Questions

This project helped explore the understanding of medical–surgical nurses and addressed the following questions:

1. What is the nurses' understanding of health literacy?
2. To what extent do medical–surgical registered nurses have health literacy knowledge?
3. What is their understanding of the barriers and challenges patients in the acute care setting face when attempting to manage their health?
4. Will education on health literacy in the medical–surgical patient population improve bedside nurses understanding of health literacy?

Limited or Low Health Literacy

The health care system is rapidly changing, which can be overwhelming to patients in the acute care setting. As seen in the goals of Healthy People 2020, there is national effort to address health literacy and ensure that all individuals have access to and understanding of accurate health information, promoting overall health (Bauer, 2010). Two thirds of U.S. adults over age 60 have inadequate health literacy skills, according to the National Assessment of Adult Literacy Survey (Whittaker, Tom, Bivens, & Klein-Schwart, 2016). Additionally, research has shown that only 12% of adults nationwide have proficient health literacy skills (Kennard, 2016).

Low health literacy is associated with:

- Poor patient–clinician relationship, linked to feelings of fear and embarrassment, individuals with low health literacy tend to ask fewer questions when with clinicians (Carollo, 2015).
- Limited knowledge about medications, which results in decreased adherence to medication regimen and consequently adverse drug reactions and emergency room visits (Whittaker, Tom, Bivens, & Klein-Schwart, 2016);
- Limited knowledge of preventive health services, which results in decreased access to health care (Carollo, 2015; Van Schalk et al., 2016);
- Poorly managed chronic illnesses (Carollo, 2015);
- Higher incidence of hospital admissions and readmissions (Stiles, 2011);
- Higher incidences of morbidity and mortality (Stiles, 2011).

Challenges and Barriers

It is important for health care professionals to recognize that health literacy is complicated and creates barriers to self-management of chronic diseases (Collins, Currie, Bakken, Vawdrey, & Stone, 2012). Health literacy is comprised of numerical literacy, oral literacy, print literacy (the ability to read print), as well as cultural and conceptual awareness of health, all of which can cause the patient to feel overwhelmed (Collins et al., 2012). The patient with low health literacy is often does not understand their health care needs, from their discharge instructions to their prescriptions to their follow-up needs. When the complexity of health care is combined with low health literacy, patients struggle to manage their health care needs, which leads to poor outcomes such as hospital readmissions. It is important to note that “even well educated people with strong reading

and writing skills may have trouble comprehending a medical form or doctor's instructions regarding a drug or procedure" (Nielsen-Bohlman, 2004, para. 2).

Assessing the Patient's Health Literacy Level

In the hospital setting, nurses are the main source of information for patients and families; therefore, nurses may be the best solution to this nationwide health literacy crisis. Medical–surgical nurses play a major role during the patient's hospital stay, always promoting effective communication to meet the patient's needs. Nurses have the responsibility to provide patient education while promoting patient well-being, patient centered care, and positive outcomes (Carollo, 2015).

Without the proper assessment of a patient's health literacy level, there is the risk that nurses may overestimate a patient's health literacy level and provide patients with overly complex health information. Nurses must understand health literacy to be able to assess for health literacy limitations and intervene to ensure understanding of any education provided to the patient and family during the hospital stay (Chesser, Woods, Smothers, & Rogers, 2016). Nurses need to be able to recognize the need to adjust their patient education plan based on patients' needs and literacy level. The REALM-SF tool is a validated paper-based health literacy-screening tool and is the chosen health literacy tool for this project (AHRQ, 2017).

REALM-SF

The REALM is commonly used in the clinical setting, serving as a screening tool for clinicians to provide a reading grade estimate for the patient tested (AHRQ, 2017). The REALM-SF, presented and validated by the AHRQ in 2007, is a shorted version of

the REALM. This 7-item word recognition test (Appendix B), which can be administered in under 2 minute, will provide nurses with a valid and quick assessment of the patient's health literacy (AHRQ, 2017).

Administration of the tool. The nurse will perform this literacy assessment using the REALM-SF tool upon admission onto the medical–surgical unit. The nurse will then write a progress note titled, "Health Literacy Assessment" in the electronic medical record documenting the assessment and the patients score.

To begin, the nurse will explain to the patient the purpose of the tool and the instructions using scripting, "*I want to make sure that I explain things in a way that is easy for you to understand. Will you help me by reading some words for me? Let's start at the top of this list, and please read each word out loud. If you don't recognize a word, you can say pass and move on to the next word"*. The nurse will then give the word list to the patient. If the patient takes more than 5 seconds on a word, say, "pass" and move to the next word. The nurse will hold on to the scoring sheet, it is not to be visible to the patient (AHRQ, 2017).

Scoring. Once the assessment is complete, the nurse will tally up the score by counting how many words the patient pronounced correctly. The score will range from 0 through 7 and this will signify a grade range (AHRQ, 2017).

- **Limited health literacy** is defined as subjects that score at or below a 6th-grade reading level (score = 0 to 3). A score of 0 indicates 3rd grade and below (AHRQ, 2017). This patient will not be able to read most low-literacy materials. It will be important for the nurse to provide oral instructions,

materials with illustrations, audio, or video (AHRQ, 2017). A score of 1-3 indicated a fourth- to sixth-grade reading level (AHRQ, 2017). This patient will need low-literacy, easy to read materials. This patient may not be able to read prescription labels.

- **Marginal health literacy** is defined as subjects that score at the 7th- to 8th-grade reading level (score = 4-6). This patient may struggle with most patient education materials, so it is recommended that low-literacy easy-to-read materials be used (AHRQ, 2017).
- **Adequate health literacy** is defined as a score at or above a 9th grade reading level (score = 7; AHRQ, 2017). This patient will be able to read most patient education materials.

Sources of Evidence

Health literacy is a relatively new health topic within the literature, with the landmark report from the Institute of Medicine titled *Health Literacy: A prescription to End Confusion* that came out in 2004 (Nielsen-Bohlman, 2004). The authors of this report found that nearly half of all Americans, estimated at 90 million people, struggle with limited health literacy causing difficulty understanding and comprehending health information and health needs (Nielsen-Bohlman, 2004). Since this landmark report in 2004, many more studies have been done on the topic of health literacy, validating the need to improve the nation's health literacy and clinicians focus on this important topic. Speros (2005) presented a concept analysis on health literacy, concluding that that the nurse must secure the ability to assess their patient's health literacy level as patients with

low health literacy levels are more likely to misunderstand health care instructions and also more likely to be non-compliant with their plan of care as they have much difficulty navigating the health care system. Health education and effective nurse-patient communication is vital to empower patients to take control of their health (Speros, 2005).

Patient education. Badarudeen, & Sabharwal (2010) discussed the opportunity to enhance patient education material, to ensure that chosen patient education tools are matched to the needs of the individual. These authors recognized behavioral patterns that are linked to poor health literacy, including incorrectly or incompletely filled out intake forms, non-compliance with medical appointments and medications. Enhanced patient-centered, individualized communication both verbally, such as through follow-up phone calls, and written, such as through enhanced readability materials no higher than 5th grade reading level, can promote positive patient outcomes (Badarudeen, & Sabharwal, 2010). Medical jargon needs to be avoided and the text within the written material needs to be simplified, as the material will only be useful to the patient if presented in a way that the patient can understand (Badarudeen, & Sabharwal, 2010).

Porter, Estabrooks, Noel, Bailey, Zoellner and Chen (2016) conclude that the teach back method is a highly recommended technique for the nurse in the role of teacher to use to ensure that the patient understood the education provided. When using this strategy, the nurse would ask the patient to repeat instructions back to them, or to recall the key components using their own words. The patient would then teach the nurse what they just learnt, to ensure understanding. Similarly Ballard and Hill (2016) stated that, “implementing the fundamentals of universal precautions and the teach-back method are

effective deterrents to the negative outcomes associated with low health literacy" (p. 232).

Relationship Between Education and Health

Zimmerman, Woolf, and Haley (2014) linked the impact of education to the ability for a patient to navigate through the health care system. A systematic review of health literacy found that those with low health literacy levels also struggled with low health-related knowledge and comprehension, such as the inability to interpret health messages on discharge instructions or messages on the labels of prescription medications (Zimmerman, Woolf, & Haley, 2014). Additionally, these authors found that adults with higher levels of education are less likely to engage in risky behaviors, such as smoking, and more likely to share healthy behavior, such as exercise. Therefore, those with higher education are more likely to be advocates of their own health, which promote better patient outcomes (Zimmerman, Woolf, & Haley, 2014). It is unfortunate that the percentage of adults in the United States is small, as according to the CDC (2016), only 12 percent of U.S. adults had proficient health literacy and only 9% scored in the highest numeracy levels. Adults age 50 and older are more likely to have poor health literacy then those under age 50 (Geboers et al, 2015). In those with poor health literacy, the rate of poor adherence to the plan of care, treatment plan, or medication regimen is as high as 47% (Geboers et al, 2015).

Health Literacy Knowledge and Experience Survey (HL-KES)

The HL-KES tool was used to collect data for this project, as a pre and post-implementation knowledge assessment. The HL-KES was developed by Dr. Catherine

Cormier and used to examine the health literacy knowledge and experience of registered nurses in Georgia (Cormier, 2006). The original survey consisted of five content areas: basic health literacy facts, health literacy screenings, guidelines for written materials, and an evaluation of health literacy interventions, totaling 38 questions (Cormier, 2006). On The Health Literacy Knowledge and Experience Survey – Short Form survey (HL-SF12), there are 12 general-knowledge questions regarding health literacy (Mullan et al, 2017). These questions explore individual nurse awareness and use of techniques for communicating with patients with low health literacy, including an assessment of barriers. The pre-implementation assessment was given to the nurses before the education is provided. The post-implementation knowledge assessment was given to the nurses immediately after the educational intervention.

While the education program was available to all medical–surgical nurses, nurses were asked to voluntarily participate in the project to maintain ethical standards. The project did not begin until approval was received from both Walden's IRB and the project site's IRB.

Analysis and Synthesis

The Health Literacy Knowledge and Experience Survey for Registered Nurses was the tool used as a pre-test and post-test. The pre-implementation assessment was given to the nurses before the education was provided to provide a baseline level of the knowledge of the nurse. The post-implementation knowledge assessment was given to the nurses immediately after the educational intervention.

The raw data was entered into Microsoft Excel to create a spreadsheet for analysis. SPSS version 25 was the statistical analysis software of choice. There was no identifying data collected to protect the participants. The data entered was double checked to ensure for accuracy. The data was analyzed in its entirety for trends. If trends were found leaning towards inaccurate responses or questions showing large portion of incorrect responses, this allowed for a gap analysis to be performed.

Pre and post intervention data was analyzed for comparison and *t*-tests were used. The null hypothesis was that the pre and post intervention assessment results will be the same. The alternative hypothesis was that the results will be significantly different, showing that the education program had a positive impact.

Summary

In summary, low health literacy levels puts the patient at greater risk for poorer compliance and poorer access to care, which leads to poorer patient outcomes. Because there was no formalized education at the project site provided to medical–surgical nurses about the effects of limited or low health literacy, this was recognized an opportunity for an educational project. The purpose of this project is to increase medical surgical nurses' awareness and knowledge of the importance of health literacy, and to introduce the REALM-SF. In this section the practice-focused question and my plan for collection and analysis of data was presented.

Section 4: Findings and Recommendations

Introduction

The problem addressed in this study is two-fold: first, the average patient struggles with low health literacy, and second, nurses are not educated on this topic so they are not able to individualize care for these patients. Patients with low health literacy are often ill informed regarding their health care needs such as their discharge instructions, prescriptions, and follow-up needs. When the complexity of health care is combined with low health literacy, patients struggle to manage their health care needs, which lead to outcomes such as hospital readmissions.

Medical–surgical nurses at a major hospital in the Northeast region are not proficient in the topic of health literacy regarding the effects of low health literacy in their patient population. Medical–surgical nurses play a major role during the patient's hospital stay in terms of communicating to meet the patient's needs. Nurses have the responsibility to provide patient education while promoting patient well-being, patient centered care, and positive outcomes (Carollo, 2015).

The purpose of this project was to increase medical–surgical nurses' awareness and knowledge of the importance of health literacy and to introduce the REALM-SF tool to assess a patient's literacy level and subsequently allow a nurse to better individualize the education provided to the patient. The practice-focus question was: Will medical–surgical nurses show an improvement in their knowledge of health literacy when comparing measurement of knowledge preeducation and immediately posteducation?

Findings and Implications

Nurses are on the front-line in the hospital setting, so there is significant responsibly shared in the bedside nursing team to ensure that patients understand their diagnosis, treatment plan, and follow-up needs. Poor health literacy leads to an increase in hospital admissions, poor compliance with the treatment plan and medication regimen, and higher mortality rates (Kennard, 2016). Much evidence was obtained from the literature in support of developing a comprehensive curriculum to ensure registered nurses' understanding of health literacy and the effects of poor health literacy on patient outcomes. Sources of evidence included peer-reviewed journals with scholarly articles on health literacy, government websites, and review articles.

The developed staff education module from this project is *Health Literacy: What do Medical–Surgical Nurses Need to Know?* This module includes:

- An overview of health literacy;
- How low health literacy affects follow-up, compliance with the treatment plan, and ultimately patient outcomes;
- Barriers that patients with greater health literacy demands face;
- Assessing health literacy level, using the REALM-SF tool;
- Scores and grade equivalents for the REALM-SF, including recommendations to individualize patient education based on these scores;
- The importance of evaluating the patients learning by using the teach-back technique.

- Tips and reminders on patient education techniques and strategies to ensure optimal patient outcomes.

Health Literacy Knowledge and Experience Survey

The HL-SF12 for registered nurses tool was used to collect data for this project as a pre- and post-implementation knowledge assessment. On this survey there were 12 general-knowledge questions regarding health literacy, which helped explored individual nurse awareness and use of techniques for communicating with patients with low health literacy, including an assessment of barriers. The preimplementation assessment was given to the nurses before the education was provided. The postimplementation knowledge assessment was given to the nurses immediately after the educational intervention. See Table 1 for pre- and post-test results per question.

Table 1

Health Literacy Knowledge and Experience Survey Results

	Correct on pretest	Correct on posttest
Q1: Low health literacy levels are most prevalent among which of the following age groups?	42	97
Q2: Low health literacy levels are common among:	90	100
Q3: The research on health literacy indicates that:	58	90
Q4: The best predictor of health care status is:	26	90
Q5: Patients with low health literacy skills:	74	97
Q6: The most effective way for a nurse to determine how well a patient with low health literacy understands Health care information is to:	90	100
Q7: The recommended reading level for written health care information is:	48	93
Q8: After providing written health care information to a patient he states, "Let me take this information home to read." This may be a clue to the nurse that the patient:	84	97
Q9: An individual with functional health literacy will be able to:	61	97
Q10: What is the strongest advantage of conducting health literacy screenings? Health Literacy screenings:	64	97
Q11: Which of the following statements, made by the nurse, would be the best approach to initiating a health literacy screening with a patient?	93	100

Discussion

Thirty-one medical surgical nurses participated in this education session. The mean pre-test score was 67.71%, with a standard deviation of 15.124. The mean post-test score was 96.6%, with a standard deviation of 6.606. This is an increase of 28.6 points from pre-test to post-test. To test the hypothesis that the pre-test and post-test resilience means were equal, a dependent samples *t*-test was performed. Prior to conducting this analysis, the assumption of normally distributed difference scores were examined. The null hypothesis was that the pre and post intervention assessment results would be the same. The alternative hypothesis was that the results would be significantly different, showing that the education program had a positive impact. A two-tailed paired samples *t* test revealed that the nurses scored better on the post-test (M = 96.6, SD = 6.606) compared to the pre-test (M = 67.71, SD = 15.124), t = -10.761, p = 0.000. All participates showed a significant increase in their scores from pre-test to post-test, which signifies that this education program was successful. Please see table 2 for a comparison of pre-test and post test scores.

Table 2

Overall Raw Test Scores

Participant	Pre-test score	Post-test score	Variance
A	83	100	+17
B	67	92	+25
C	25	92	+67
D	67	100	+33
E	58	92	+34
F	67	100	+33
G	75	100	+25
H	75	100	+25
I	67	100	+33
J	75	100	+25
K	75	100	+25
L	50	92	+42
M	83	100	+17
N	75	92	+17
O	83	100	+17
P	83	92	+9
Q	83	92	+9
R	58	100	+42
S	50	100	+50
T	75	100	+25
U	58	100	+42
V	25	100	+75
W	50	67	+17
X	75	100	+25
Y	67	100	+33
Z	75	92	+17
AA	83	100	+17
BB	75	100	+25
CC	75	100	+25

Recommendations

The analysis and synthesis of the data gathered during this project hold the promise of further recommendations on the topic of health literacy projects moving forward. The results of this analysis show that there is a significant gap in medical–surgical nurse's knowledge of health literacy. Future research is needed to support these findings in other areas of bedside nursing, such as on the telemetry, maternity, and step-down nursing units. Additional recommendations would include a breakdown of nurses by generation, and focusing in on their individual generational needs. Furthermore, essential to this topic is the long-term result of individualize patient education, based on health literacy needs, on patient outcomes, including hospital readmissions, compliance with follow-up care and the treatment plan, and morbidity and mortality.

Life-long learning in the nursing field is a dynamic and continuous process for nurses in all specialties, as learning encompasses a person's professional lives as well as their personal lives. Continuous education, such as through this education module, is imperative for nurses to remain aware and up-to-date on new research, advancements in the health care field, and evidenced-based practices. It is through educational opportunities that nurses are able to gain knowledge that will influence their nursing practice and build upon their clinical skill sets. Based on the findings of this project, nurses found the educational module beneficial; the nurses' knowledge gap was closed post-education.

Strengths and Limitations of the Project

The strength of this project was that it provided clear and focused education, tailored to the needs of the medical–surgical nurse and focused on the medical–surgical patient population. The nurses who participated gained essential, evidenced-based knowledge, which will influence their nursing practice; to help them individualize the way they provide patient education. This will improve clinical practice at the bedside, allowing the nurse to provide high quality, safe patient care, which will ultimately improve patient outcomes.

The goal of this project was to improve the nurses' knowledge regarding health literacy and promote the use of the REALM-SF tool to assess the patient's literacy level, to allow for individualized education. The chosen tool was an identified strength of this project, as this tool was proven and validated by the AHRQ (2017), and this short-form version is the perfect choice for a busy acute care setting. The REALM-SF is both efficient and effective, and the results bring immediate value to the nurse performing the assessment.

One limitation was that, while this education program was available to all medical–surgical nurses, nurses were asked to voluntarily participate in the project. Because of this, not all medical surgical nurses participated and thus missed out on the opportunity to expand their knowledge on health literacy. It would benefit the organization to offer this educational module on health literacy to all medical–surgical nurses, as a Health Stream educational module. This education module offers portability

and ease in transitioning the program to a self-learning module, which will save time and also be cost-effective for the organization.

Summary

Health literacy is defined as "the degree to which individuals have the capacity to obtain, process and understand basic health information and services needed to make appropriate health decisions" (Young & Weinert, 2013, p. 70). Because health literacy is a critical component of health care in America, nurses need to be able to recognize the need to adjust their patient education plan based on patients' needs and literacy level. Nurses need to identify and challenge the barriers that present to the situation. In the hospital setting, nurses are the main source of information for patients and families. Nurses must have an understanding of health literacy to be able to assess for health literacy limitations and intervene appropriately, to ensure understanding of any education provided to the patient and family during the hospital stay (Sand-Jecklin, Murray, Summers, & Watson, 2010). In this doctoral project, the gap in practice was identified and then addressed by providing education to nurses on health literacy.

Section 5: Dissemination Plan

Introduction

Dissemination of this doctoral project serves to advance the nursing practice and improve patient outcomes at the practicum site. The initial audience for this project was the medical–surgical nurses at one of three hospital campuses in the network. This nurse education has helped to increase the medical–surgical nurses' knowledge of the importance of health literacy and to introduce the REALM-SF tool, which can be used to assess a patient's literacy level and better individualize the education provided to the patient. The goal was to improve nurses' clinical knowledge base and skill set in this area, and through analysis of the results this project was successful.

Providing education on this topic to the bedside nursing team promotes a respectful and supportive environment for the patient, focusing on the patient's individual needs and providing patient-centered care. Educating nurses on health literacy benefits patients and reduces health disparities (Cornett, 2017). By improving their knowledge on health literacy, medical–surgical nurses can share this information with colleagues—especially those who act as mentors and preceptors—and apply their knowledge in interactions with patients and families.

There is also additional opportunity to disseminate this educational module out network-wide to the rest of the organizations bedside nurses through the staff self-learning educational forum. This education will help to further facilitate and guide change in nursing practice. In addition, a train-the-trainer approach can be used at each individual unit level. The unit-based practice councils can then disseminate the education

to the remaining nurses on the unit with plans to evaluate the effectiveness of this education for continuous improvement opportunities.

There is also opportunity to disseminate this project in venues supportive of the broader nursing profession. Because health literacy is a complex topic, this education is valuable for nurses in a variety of roles and settings across the care continuum, including community and public health, and ambulatory settings. Providing education on this topic to nurses across the care continuum will further promote better patient environments. Taking this topic to professional nursing conferences or through written publications in nursing journals will allow this education to reach a variety of nurse leaders who then can disseminate this education into their organizations.

Analysis of Self

My Philosophy of Nursing

The health care environment has the same goals even though it is always changing: provide high quality patient care and improve patient outcomes. The nursing profession is unique because through philosophy, theory, and research, the nursing discipline's body of knowledge has grown. This body of knowledge has made the nursing profession the discipline that it is today: health-oriented and person-centered, with a focus on improving patient outcomes through evidenced-based practice. As a result of this doctoral program, I now have the ability to not only think like a nurse but also to now think like a scholar with evidence-based practice to introduce the REALM-SF as a tool in measuring health literacy.

Nursing Career

My professional nursing career, to this point, has been overwhelmingly satisfying. I feel that I was meant to be a part of this growing profession. When I worked at the bedside as a telemetry nurse, I started with only a diploma in nursing. I quickly realized that I had a strong desire to continue my education. Theorists who guided my bedside practice include Florence Nightingale, Dorthea Orem, and Jean Watson. I focused on caring for the patient as a person and caring for the family and loved ones at the bedside as my patient too. I supported the patient's basic needs while promoting education and self-care. I spent personal time with my patient, waiting for and hoping for a caring moment.

As I recognized my love for learning and the value I brought to my organization, I joined shared governance at the hospital where I worked. I also went back to school for my BSN. The knowledge gained through my BSN program helped to solidify many of the concepts I had already practiced every day, as an understanding of philosophy improved. But it was learning about Patricia Benner's novice to expert theory that helped me realize my desire to go into nursing leadership. I started with cross-training to the role of house supervisor, then I went on to precept new nurses. I also volunteered as a capstone preceptor for senior nursing students. Each step forward in my career built upon the previous one, and the knowledge I gained through this process was satisfying. I soon decided that I wanted more, and I went back to school again for my MSN/MHA.

The next step in my career was house supervisor, and then shortly after, the role of nurse manager. In both of these leadership roles, I continued to link theory and

philosophy to my every day responsibilities. No matter how difficult the day, I always focus on doing the right thing for the patient, meeting their needs, and ensuring high quality care and outcomes. I recognize the opportunity to grow my team. Together, with my nursing team, we are working on various quality improvement initiatives on our units. We are also working on their personal professional development.

Current Role

In my current role, I am nurse manager of two medical–surgical units, one is a busy 51-bed general medical–surgical unit with remote telemetry capabilities, and the other a smaller yet just as busy 24-bed medical–surgical unit. My personal philosophy of nursing focuses in on the basics of care, as I believe that caring remains the core of nursing. Just as Nightingale "delved into the most basic needs of human beings and all aspects of the environment," I share the belief that, with my nursing team, we need to focus on caring for the patient as a whole person: body, mind, and spirit (Dossey, 2010, p. 14). I start every morning making patient rounds, and I work hard with my team of assistant nurse manager to ensure that we personally check in with all patients every day. Although I enjoy this time at the bedside, I recognize the importance of my presence and leadership for my nursing team. I never hesitate to jump into hands-on patient care if that is what the patient needs.

Hildegard Peplau stressed the importance of a nurse–patient relationship; she also promoted the importance of "professionalizing nursing" (Callaway, 2002, p.23). In my role as nurse manager, I am responsible for a team of nurses from all generations who share various nursing experiences that range from novice to expert. I often lead my team,

reminding them that nursing on our unit needs to be more than just completing tasks, as it is the connection with the patient that is important for both patient satisfaction and nurse satisfaction. Peplau has taught me that relationships with my direct reports need to be built on trust, and need to be a priority. I make sure to dedicate time meeting with all of my team personally, in one-on-one meetings throughout the year, where we discuss their professional development. Just as Peplau was first an educator, I feel the same in the nurse manager role. I am ultimately responsible for my team of nurses, to educate and guide them, and to ensure they provide high quality, safe care to our patients.

As stated by Rega, Telaretti, Alvaro, and Kangasniemi, (2017), "In the course of their clinical practice, nurses need to know how to act, but theoretical knowledge can provide arguments about why they should act" (p.74). Philosophy has guided the nursing practice through nursing theory. Nursing research laid the foundation for the science of nursing. A mixture of practical, philosophical, and theoretical knowledge is needed "because evidence-based practice alone cannot explain phenomena that are exclusive to nursing" (Rega, Telaretti, Alvaro, & Kangasniemi, 2017, p.71). Subsequently, individual nurses rely on philosophy and theory. Nurses reflect on philosophical concepts, their personal beliefs and values, and then relate the theoretical concepts to their own personal practice.

Why Health Literacy?

When thinking about what I wanted to focus on for my doctoral project, I thought long and hard on my experience at the bedside as a medical–surgical and telemetry nurse. I thought about my patients that I cared for as a primary nurse, and I thought about the

patient population that I care for now, as nurse manager of two busy medical surgical units. Our patients are sick, navigating through co-morbidities and life-changing events, and they're scared of the unknown, and often the complexity of the acute care hospital setting can be overwhelming for the patient. In addition, patient education in the acute care setting can be a challenge for the bedside nurse who juggles a multitude of priorities throughout the workday. The patient education piece is important because patients need to be informed on their medical conditions and treatment plans so that they can advocate for their own health care choices. It is also vital for patients to be well informed so that they can properly care for themselves at home. Well-educated patients are better able to manage their own health care needs and facilitate their own plan of care. Patient-nurse communication is a vital key element of patient education, but I thought, how much does the patient really understand and is the nurse taking the time to recognize that the patient doesn't understand? It is important for the clinical nurse to recognize the complexities during the hospital admission, often related to medical terminology, treatment plans, and patient care equipment and devices. This also includes education on the diagnosis and treatment plan, goals, new medications and potential adverse effects, and follow-up needs. From a patient perspective, management of health care needs becomes even more challenging when the complexities of health care are combined with limited or low health literacy levels. And this is where I recognized there was opportunity for improvement. This doctoral project addressed the topic of health literacy. Low health literacy puts the patient at greater risk for poorer compliance and poorer access to care, which leads to poorer patient outcomes.

As the project developer, the many hours invested in this practicum experience allowed me to witness the many challenges that the bedside nurse confronts daily when providing patient education throughout the patient's hospital stay as well as at the time of discharge. On a busy medical floor, time is of the essence, so I knew immediately that I needed to find an assessment tool that was efficient and valuable to the nurse. Numerous hours were spent scouring the literature and the Internet for a tool that would strengthen this important initiative, and when I came across the REALM-SF I knew that this tool was exactly what I was looking for. This process in itself reinforced my commitment to this project, as now I understood the value in a project developer, who is patient and persistent, yet determined to explore the literature in an effort to develop an innovative strategy to overcome a gap in clinical practice.

Challenges

The biggest challenge for me through this process was certain nurse's blatant display of resistance to change. While the majority of nurses who attended this program were open to the education provided to them and excited about the opportunity to learn something new, there were a select few who challenged the process. Two nurses, in separate sessions, interrupted the education with complaints about an additional assessment being time-consuming and demanding, rather than absorbing the information discussed and looking at this as a learning opportunity for them. One nurse in particular was so challenging that she was disruptive to the group. During this doctorial experience, I have learned strategies to address barriers to resistance to change, and through patience, perseverance, and effective communication, this challenge was overcome. This program

taught me the importance of always staying true to the reason why we are here in this place, for the better of society as we promote positive social change. My doctoral instructors, facilitators, and mentors have taught me to inspire and engage nurses, even in times of uncertainty and resistance, and these efforts ran true during this experience.

Hopes for the Future

My long-term career goals are two-fold. First, I want to continue my growth as a nurse scholar and nurse leader, transforming and advancing the nursing profession. It is important to me to share my knowledge on the topic of health literacy with continued hope to promote positive change of bedside nursing practice. My hope for the future is that this project has helped to improve nursing practice at the bedside surrounding the context of patient education. My hope is that, thorough individualizing patient education based on the patients' health literacy needs that patient outcomes will improve in the long-term. I also hope to continue to research on this topic, as its value to improving patient outcomes is vast. Second, I want to continue to influence nursing practice and the future of nursing, from novice nurses new to this great profession to the overall care continuum. Completion of this doctorial journey provides me not only with knowledge and expertise, but with professional respect that will help allow me to further influence this great profession.

Summary

As a result of this educational module, nurses will be better equipped to understand their patients' health literacy level. Nurses will then be able to individualize their patient education based on their patient's personal needs. When discussing the topic

of health literacy, it is important to note the contributing factors and the potential implications for nursing practice and social change as a result of this doctorial project. Nurses need to see the value in this education provided to them, and they need to make the personal decision to alter the way that they practice. The goal is that nurses will assess their patient's literacy level using the REALM-SF, so that the nurses can then intervene according to the results of this assessment and provide the patient with education that they will be able to understand and comprehend.

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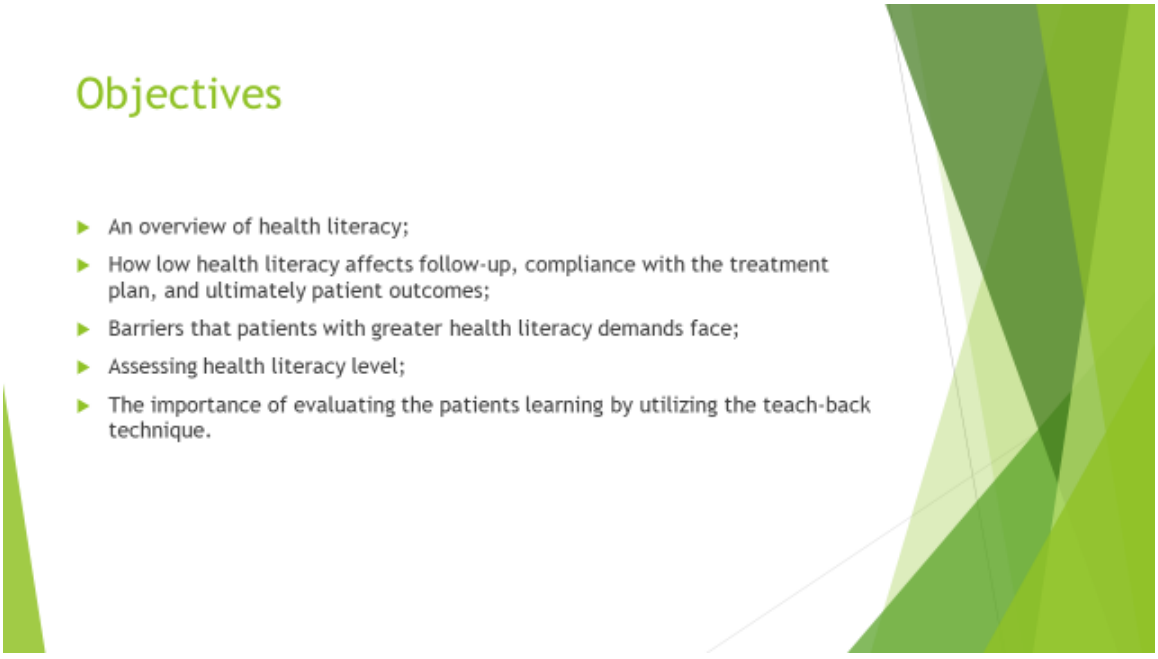
Appendix A: Educational PowerPoint



Health Literacy

- *Health literacy* is defined as "the degree to which individuals have the capacity to obtain, process and understand basic health information and services needed to make appropriate health decisions" (Stiles, 2011, p. 35).
- Health literacy is not independent of general literacy.

Health Literacy, a widespread challenge

What is it like being a patient?

Clinicians and hospital staff	Patients and family
• Know how the hospital works and how to get things done	• Are strangers in this environment • Do not understand the system or culture • Know about their body and life situation better than hospital staff
• Know who hospital staff are and what they do	• Do not know who different staff are and what they do • May want family or friends to support them
• Are busy and under a lot of stress	• Are often in pain or uncomfortable, vulnerable, or afraid • Are worried and want to do what they can for the patient (family members) • Aware that hospital staff are busy and may not want to bother you
• Want to provide high-quality and safe care	• Trust hospital staff to provide safe and high-quality care

5

Why focus on communication ?

- This is the foundation of all interactions with patients and families
- The nurse plays the role of teacher and educator
- Research shows that patient-centered communication can improve:
  - Patient safety
    - More then 70% of adverse events are caused by breakdowns in communication
  - Patient outcomes, including emotional health, functioning, and pain control
  - The patient experience

Complexity of Health Care

- Medical terminology
- Treatment plans can be overwhelming
- Patient care equipment/devices, difficult to understand
- Diagnosis, do they really understand what is going on in their bodies?
- Goals of care: what do they really want?
- Medications, adverse effects
- Follow-up needs

Low Health Literacy

Limited (or low/poor) health literacy.

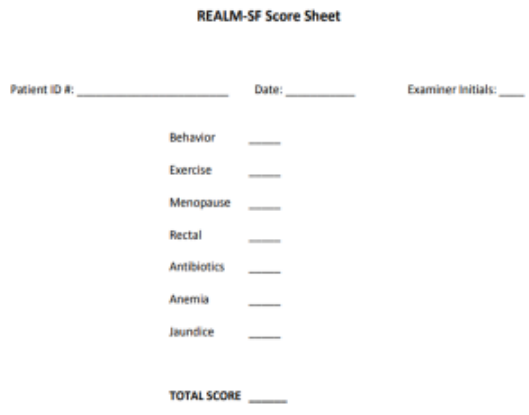
A health literacy skill level that is lower then what is necessary to obtain, process, and understand basic health information to make appropriate health related decisions.

Low health literacy is associated with:

- Poor patient: clinician relationship, linked to feelings of fear and embarrassment, individuals with low health literacy tend to ask fewer questions when with clinicians (Carollo, 2015).
- Limited knowledge about medications which results in decreased adherence to medication regimen, resulting in adverse drug reactions and emergency room visits (Whittaker, Tom, Bivens, & Klein-Schwart, 2016);
- Limited knowledge of preventive health services which results in decreased access to health care (Carollo, 2015);
- Poorly managed chronic illnesses (Carollo, 2015);
- Higher incidence of hospital admissions and readmissions (Stiles, 2011);
- Higher incidences of morbidity and mortality (Stiles, 2011).

Assessing the Patient's Health Literacy Level

- Rapid Estimate of Adult Literacy in Medicine tool (REALM-SF)
- This 7-item word recognition test, which can be administered in under 2 minute's time, will provide nurses with a valid and quick assessment of the patient's health literacy



REALM-SF Score Sheet

Patient ID #: _____ Date: _____ Examiner Initials: ____

Behavior ____
Exercise ____
Menopause ____
Rectal ____
Antibiotics ____
Anemia ____
Jaundice ____

TOTAL SCORE _____

Administering the REALM-SF

- The nurse will perform this literacy assessment using the REALM-SF tool upon admission onto the medical-surgical unit.
- To begin, the nurse will explain to the patient the purpose of the tool and the instructions using scripting:
  - *I want to make sure that I explain things in a way that is easy for you to understand. Will you help me by reading some words for me? Let's start at the top of this list, and please read each word out loud. If you don't recognize a word, you can say pass and move on to the next word.*
- The nurse will then give the word list to the patient. If the patient takes more than 5 seconds on a word, say "pass" and move to the next word.
- The nurse will hold on to the scoring sheet, it is not to be visible to the patient.

Scores and Grade Equivalents for the REALM-SF

Score	Grade range
0	Third grade and below; will not be able to read most low-literacy materials; will need repeated oral instructions, materials composed primarily of illustrations, or audio or video tapes.
1-3	Fourth to sixth grade; will need low-literacy materials, may not be able to read prescription labels.
4-6	Seventh to eighth grade; will struggle with most patient education materials; will not be offended by low-literacy materials.
7	High school; will be able to read most patient education materials.

What next?

- Consider the Scores and Grade Equivalents for the REALM-SF during all patient interactions, but especially during patient education
  - Discussing the patients plan, studies/tests
  - New medications, side effects
  - Diagnoses, especially chronic diseases
  - Discharge planning, especially follow-up needs
  - Reviewing discharge instructions

Does your patient really understand ?

Use the patient education handouts

- Click on your patient in Cerner
- Look to the top of the screen, click on Patient Education
- Search for the topic that you need to educate your patient on
- Are they low health literacy? If so, choose the Easy-to-Read option

What is teach back?

- An opportunity to assess how well clinicians explained a concept, and, if necessary, re-teach the information
- Ask the patient and family to repeat back **in their own words** what they need to know or do to be sure **you explained things well**
- Tips for teach back:
  - Start slowly
  - Do **not** ask yes or no questions
  - Chunk information when explaining more than one concept and use teach back after each concept

15

What else can you do?

- Take your time, especially during the discharge process
- Use plain language, speak slowly, avoid medical jargon
- Use patient education hand-outs, visuals
  - Highlight important pieces
- Repeat education throughout the day
- Be careful not to overwhelm your patient with too much at once, space out education
- Include family and caretakers, if your patient allows
- Be sure to verify understanding through teach-back

How do these tools benefit you?

- Help make sure your patients have better outcomes
- Help improve quality and safety by making sure patients and families share important information
- Ensure the patient and family have a better transition from the hospital

17

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Appendix B: Pre- and Post-test

Health Literacy Knowledge and Experience Survey

Your participation in the survey will contribute to the body of knowledge on health literacy.
Your responses will be kept anonymous and in no way affect your employment. I encourage you to participate; however, participation is optional. Informed consent is implied with completion of the survey.

Directions: Questions are multiple-choice questions. Choose the best answer and record only one response for each question.

1. Low health literacy levels are most prevalent among which of the following age groups?
    A. 16 to 24 years of age.
    B. 25 to 34 years of age.
    C. 35 to 44 years of age.
    D. 45 to 54 years of age.
    E. 65 years of age and older.

2. Low health literacy levels are common among:
    A. African Americans
    B. Hispanic Americans
    C. White Americans
    D. all ethnic groups

3. The research on health literacy indicates that:
    A. the last grade completed is an accurate reflection of an individual's reading ability.
    B. most individuals read three to five grade levels lower than the last year of school completed.
    C. if an individual has completed high school they will be functionally literate.
    D. if an individual has completed grammar school they will be functionally literate.

4. The best predictor of health care status is:
    A. socioeconomic status
    B. literacy
    C. gender
    D. educational level

5. Patients with low health literacy skills:
    A. rate their health status higher than those with adequate literacy skills.
    B. experience fewer hospitalizations than those with adequate literacy skills.
    C. are often prescribed less complicated medication regimens than those with adequate health literacy skills
    D. are often diagnosed late and have fewer treatment options than those with adequate health literacy skills.

6. The most effective way for a nurse to determine how well a patient with low health literacy understands Health care information is to:
    A. Utilize a pre-test before instruction and a post-test following instruction.
    B. Ask the question, "Do you understand the information I just gave you?"
    C. Have the patient teach back the information to the nurse.
    D. Verbally ask the patient a series of questions following instructions.

7. The recommended reading level for written health care information is:

A. 5th grade.
B. 8th grade.
C. 10th grade.
D. 12th grade.

8. After providing written health care information to a patient he states, “Let me take this information home to read.” This may be a clue to the nurse that the patient:
A. Is in a hurry and does not have time for instructions.
B. Is not interested in learning the information.
C. Is noncompliant with health care treatments.
D. May not be able to read the materials.

9. An individual with functional health literacy will be able to:
A. Follow verbal instructions but not written health care instructions.
B. Read health care information but have difficulty managing basic health care needs.
C. Read and comprehend health care information.
D. Read, comprehend, and actively participate in decisions concerning health care.

10. What is the strongest advantage of conducting health literacy screenings? Health Literacy screenings:
A. provide nurses with a good estimate of the educational level of individuals.
B. will help nurses to be more effective when providing health care teachings.
C. can be used to diagnose learning difficulties that serve as barriers to patient teaching.
D. assist health care agencies to comply with educational standards

11. Which of the following statements, made by the nurse, would be the best approach to initiating a health literacy screening with a patient?
A. “It is necessary for me to assess your reading level; this will take a few minutes and it is very important.”
B. “I need to conduct a test to see if you can read. Please read these words for me.”
C. “I want to make sure that I explain things in a way that is easy for you to understand. Will you help me by reading some words for me?”
D. “I need to administer a reading test to you. If you cooperate this will not take long.”

12. When working with individuals who have low health literacy skills the nurse should keep in mind that these individuals:
A. may not admit that they have difficulty reading
B. will readily share that they need assistance with written information.
C. will frequently ask questions about information they do not understand.
D. should not be expected to manage their health care since they cannot read

Appendix C: Pre- and Post-test Answer Key

Health Literacy Knowledge and Experience Survey

1. E.
2. D.
3. B.
4. D.
5. D.
6. C.
7. A.
8. D.
9. D.
10. B.
11. C.
12. A.

Appendix D: Health Literacy Tool

REALM-SF Score Sheet

Patient ID #: _____ Date: _____ Examiner Initials: ____

Behavior	_____
Exercise	_____
Menopause	_____
Rectal	_____
Antibiotics	_____
Anemia	_____
Jaundice	_____
TOTAL SCORE	_____

Administering the REALM-SF:

Suggested Introduction:

"Providers often use words that patients don't understand. We are looking at words providers often use with their patients in order to improve communication between health care providers and patients. Here is a list of medical words.

Starting at the top of the list, please read each word aloud to me. If you don't recognize a word, you can say 'pass' and move on to the next word."

Interviewer: Give the participant the word list. If the participant takes more than 5 seconds on a words, say "pass" and point to the next word. Hold this scoring sheet so that it is not visible to the participant.

Scores and Grade Equivalents for the REALM-SF

Score	**Grade range**
0	Third grade and below; will not be able to read most low-literacy materials; will need repeated oral instructions, materials composed primarily of illustrations, or audio or video tapes.
1-3	Fourth to sixth grade; will need low-literacy materials, may not be able to read prescription labels.
4-6	Seventh to eighth grade; will struggle with most patient education materials; will not be offended by low-literacy materials.
7	High school; will be able to read most patient education materials.

Appendix E: Permission to Use REALM-SF

From: Davis, Terry [redacted]
Sent: Saturday, May 19, 2018 5:49:17 PM
To: Heather Smith
Subject: Re: Permission to use REALM-SF

I am delighted u want to use REALM sf
Terry

Sent from my iPhone

On May 19, 2018, at 4:45 PM, Heather Smith [redacted] wrote:

Good afternoon

I am working on my DNP, and for my Doctoral Project I am focusing on health literacy interventions in the acute care setting. Upon my review of the literature I came across the REALM-SR on the AHRQ site. I am writing to request permission to use the REALM-SF.

Thank you,

Heather Smith

Appendix F: Pre- and Post-test Data

	Q1PRE	Q1POST	Q2PRE	Q2POST	Q3PRE	Q3POST	Q4PRE	Q4POST	Q5PRE	Q5POST	Q6PRE	Q6POST	Q7PRE	Q7POST	Q8PRE	Q8POST	Q9PRE	Q9POST	Q10PRE	Q10POST	Q11PRE	Q11POST	Q12PRE	Q12POST
A	N	Y	Y	Y	Y	Y	N	N	Y	Y	N	Y	N	N	N	N	N	N	Y	Y	Y	Y	Y	Y
B	N	Y	Y	Y	Y	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	Y	Y	N	Y
C	N	Y	Y	Y	N	Y	N	Y	N	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y
D	Y	Y	Y	Y	N	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y
E	N	Y	N	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	N	Y	Y	Y	N	Y
F	N	Y	Y	Y	N	Y	N	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y
G	Y	Y	Y	Y	N	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
H	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
I	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y
J	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y
K	Y	Y	N	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y
L	N	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y
M	Y	Y	Y	Y	N	Y	N	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y
N	N	Y	Y	Y	Y	Y	N	N	N	Y	Y	Y	N	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y
O	N	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y	Y	Y
P	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Q	N	Y	Y	Y	Y	Y	N	N	Y	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y	Y	Y	Y	Y
R	N	Y	Y	Y	N	Y	N	Y	N	N	Y	Y	N	Y	Y	Y	N	Y	N	Y	N	Y	N	Y
S	N	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y
T	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y
U	Y	Y	N	Y	Y	Y	N	Y	Y	Y	Y	Y	N	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y
V	Y	Y	Y	Y	Y	N	N	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
W	Y	Y	Y	Y	N	Y	N	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y
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BB	Y	Y	Y	Y	Y	N	N	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
CC	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
DD	N	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y
EE	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y
	13	30	28	31	18	28	8	28	23	30	28	31	15	29	26	30	19	30	20	31	29	31	26	31
	42%	97%	90%	100%	58%	90%	26%	90%	74%	97%	90%	100%	48%	93%	84%	97%	61%	97%	64%	100%	93%	100%	84%	100%