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Using the Power of 3 with Total Joint Surgery Patients

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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,
and that any and all revisions required by
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Abstract

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by

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Abstract

The purpose of patient education is to provide patients and their families with the tools needed to care for themselves after discharge from the hospital, but shortened hospital stays, limited health literacy, language, and age can impede the patient's comprehension of the information provided. Researchers have found that the lack of effective patient education is related to 30-day hospital readmissions. The Power of 3 educational tool, designed by Sanchez and Cooknell, addressed the factors that impeded effective patient teaching by using the adult learning theory and low health literacy concepts. The Power of 3 was implemented as a quality improvement project in the Total Joint Center in October 2014. The purpose of this project was to assess the effect of an adult learning-based educational tool on the readmission rates for venous thrombus embolism and infection and on the effect on mobility in total joint surgery patients. This goal was accomplished by performing a retrospective chart review on 90 randomized patients, 45 before and 45 after implementation. The Power of 3 demonstrated a statistically significant change in the length of time a patient remained out of bed on the day of surgery after implementing the educational tool (0.75 hours vs. 1.514 hours, $p = 0.0182$, CI 95%). In addition, the number of patients that nursing staff documented who were out of bed was also statistically significant on the day of surgery (12 patients vs. 24, $p = 0.0461$, CI 95%). This educational tool can facilitate patient teaching by addressing language and educational barriers between patients and health care workers.

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Dedication

This project is dedicated to my husband Joe, and children, Sydney and Dustin. Without their continual support, patience, and understanding this would not have been possible.

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Section 1: Nature of the Project

Patients are staying fewer days in the hospital, limiting the time for patient education to occur. This limited length of stay provides obstacles to effective patient teaching. A patient's comprehension of the teaching provided at discharge can be limited due to medication, anxiety, pain, and the patient being overwhelmed with information (Gilboy & Howard, 2009). The lack of health literacy, age, and social issues as well as ethnicity, family influence, and chronicity of the disease process can also impede the comprehension and effectiveness of patient education (Coleman, Parry, Chalmers, & Min, 2006; Muma, 2012). According to Muma (2012), effective patient education is of equal importance to clinical and technical advancements.

Fredricks, Guruge, Sidani, and Wan (2010b) found that providing postoperative education that is individualized, presented in multiple sessions, and that integrates a multimedia approach demonstrates positive patient outcomes. Fredricks, Beanlands, Spalding, and DeSilva (2010a) concurred stating that patients who had discharge teaching performed over multiple sessions and patients who had information that was individualized and provided in a multimedia fashion, had a decreased utilization of health care services after discharge. Ideal characteristics of patient teaching include information that has specific points, is simple yet precise, and addresses health literacy through the use of pictures (Houts, Witmer, Egeth, Loscalzo, & Zabor, 2001). In addition to using the appropriate educational media and methods, Muma (2012) stated that effective patient

education is information that the health care provider has presented in such a manner that it empowers the patient.

Hansen, Young, Hinami, Leung, and Williams (2011) stated that there is no implementation alone that has helped prevent readmissions into the hospital. However, the lack of comprehension of discharge instructions has a positive correlation to readmissions. Health care professionals need to focus on the factors that contribute to 30-day readmissions including health literacy and language barriers (Kripalani, Theobald, Anctil, & Vasilevskis, 2014). In addition, health care providers need to address those individuals at risk for having low health literacy such as immigrants and the elderly (National Network Library of Medicines [NNLM], 2014). Addressing the populations who are at higher risk for hospital readmissions will lessen the health care gap between these populations.

The Power of 3 is an educational tool developed and validated in 2014 by Sanchez and Cooknell in the use with open heart surgery patients (Sanchez, 2014a; Appendix A). This educational tool was modified to be used for patients undergoing total joint surgery (Appendix B). The Power of 3 is a laminated tool that focuses on the three most important discharge instructions related to surgery, as well as pictures of clock faces, to encourage mobility and to stay up and out of bed. The tool uses adult learning concepts and pictures to address health literacy (Sanchez, 2014a). The Power of 3's educational concepts were taught by the total joint educator/coordinator to all patients

prior to admission during the preoperative education class, and then the educational tool was placed in the patients' rooms prior to admission.

Background and Evidence Based Significance

According to Goodman, Fisher, and Chang (2013), readmissions are due to a variety of factors including a patient's lack of understanding of his or her treatment plan or diagnosis, family members not participating in discharge planning, and/or simply not understanding the discharge instructions provided.

Discharge Teaching

Discharge teaching postoperatively is a common and important nursing role (Ozcan, Yildiz Findik, & Sut, 2010). The nurse's role is to provide information regarding tasks the patient and family should perform to prevent readmission and provide the patient with tools to increase his/her self-care and self-efficacy (Ozcan et al., 2010). Fredericks et al. (2010b) concurred stating that postoperative teaching should revolve around strategies to prevent complications and increase the patient's self-care knowledge. According to Muma (2012), the goals of patient education are that patients will

- Assume more responsibility for their health.
- Improve their ability to manage chronic and acute illnesses.
- Improve compliance with the treatment regimen.
- Be provided with choices for a healthier lifestyle.
- Improve satisfaction with the care provided.

According to Bastable (2008), patient education should enable patients to not only understand their health condition but also be able to make appropriate decisions and changes. Increasing a patient's ability to retain and comprehend the information presented increases their ability to comply with needed lifestyle modifications (US Department of Health and Human Services, 2003).

Obstacles to Effective Discharge Teaching

Some of the obstacles that can impede the effectiveness of discharge instructions include anxiety related to the discharge (Fredricks, 2009) and a lack of comprehension and retention of the information (Flacker, Park, & Sims, 2007). According to Spandorfer, Karras, Hughes, and Caputo (1994), 23% of patients did not understand at least one component of their discharge teaching. Engel et al. (2009) agreed stating that 34% of patients demonstrated a lack of comprehension of discharge instructions.

Overall 33% of readmissions are preventable and are in part due to noncompliance with discharge instructions (Shimizu et al., 2014). A patient's noncompliance can be related to health literacy and comprehension (Engel et al., 2009; Hastings et al., 2011; Spandorfer et al., 1994). Makaryus and Friedman (2005) concurred by stating that health literacy, practicality of the information provided, and time are pivotal factors in patients not complying with discharge instructions, leading to complications.

Health Literacy

Health literacy is a national problem with only 12% of the population having adequate health literacy skills and more than 77 million people in the United States having low health literacy skills (U.S. Department of Health and Human Services, 2008). Low health literacy costs the health care system between $106 billion to $238 billion annually in additional expenses (NNLM, 2014). According to Schwartzberg, Cowett, VanGeest, and Wolf (2007) and Dennison et al. (2011), low health literacy is related to higher hospital admissions, higher mortality, and lower health care outcomes. People with low health literacy are 1.5 to 3 times more likely to have adverse health care outcomes and have an increase in healthcare management (DeWalt, Berkman, Sheridan, Lohr, & Pignone, 2004). Education, culture, emotion, literacy, age, disability including hearing, seeing, and memory issues, as well as language, influence health literacy (Osborne, 2006).

According to McCarthy et al. (2012) and Choi (2011), when teaching a person with low literacy, it is important to focus on two or three key concepts. In addition, adding pictures with simple meaning also improves a patient's recall of information presented (Houts et al., 2001). Marcus (2014) added that not only must the information be presented at the appropriate level of understanding, it must also be presented in the patient's own learning style and at an age appropriate level.

Readiness for Discharge

According to Weiss et al. (2008), readiness for discharge is pivotal in the comprehension and understanding of health instructions. Readiness for discharge can

relate to how well the information was taught and the confidence of the person providing the instructions. Weiss et al. stated that more important than what information presented was how the nurse delivered the discharge education. Lerret (2009) and Weiss et al. stated that discharge readiness corresponds with how effectively the nurses provided the discharge teaching. Effective discharge teaching increased a patient's confidence, therefore, increasing his or her readiness for discharge (Lerret, 2009). Weiss et al. (2007) concurred and stated that the more effective the discharge teaching, the fewer readmissions that patient's experienced. Brent and Coffey (2013) stated that patients perceived that they had received a low quality of discharge education, indicating an opportunity for nurses to increase the quality of discharge teaching.

Concepts for Effective Patient Teaching

Healthcare professionals should acknowledge the patient's learning style to increase comprehension. A learning style is the method in which a person receives and processes information that affects how the person comprehends and retains information (Denig, 2004). The three main categories are visual, auditory, and kinesthetic (Osborn, 2006; Romanelli, Bird, & Ryan, 2009). A visual learner prefers written instructions, pictures, or timelines; an auditory learner prefers spoken instructions, and a kinesthetic learner prefers physically using or manipulating objects when retaining information (Osborn, 2006).

To ensure the health care professional addresses all learning styles, the content should be presented in multiple media forms such as reading, auditory, graphics, and

visual aids (Muma, 2012). Samuels-Kalow, Stack, and Porter (2012) recommended that discharge information should be presented verbally, followed by written information at an appropriate reading level. Fredricks et al. (2010a) concurred stating that effective patient education can be achieved through teaching performed at multiple sessions and using multiple media methods. When presenting learning opportunities, a healthcare professional should include visual aids, multimedia presentations, models, graphics, and handouts for the visual learners; lecture format with repetition, varying both speed and volume of the presentation for auditory learners; and bulletin boards, handouts, models, or small objects to manipulate for the kinesthetic learner (Kearney-Nunnery, 2008). The use of combining written and verbal instructions have resulted in more effective outcomes (Fredericks, Ibrahim, & Puri, 2009; Johnson, Sandford, & Tyndall, 2009).

Problem Statement

In 2010, the United States government initiated a Hospital Readmissions Reduction Program (HRRP; Kohlnhofer, Tevis, Weber, & Kennedy, 2010). The program penalizes hospitals that have an above average readmission rate in patients whose primary diagnosis is myocardial infarction, heart failure, or pneumonia (Kohlnhofer et al., 2014). According to the Center for Medicare and Medicaid Services (CMS; 2014), patients who have undergone total hip arthroplasty and total knee arthroplasty will now be considered under the HRRP beginning in 2015 (CMS, 2014). The national readmission rate for total hip and total knee arthroplasty, according to the hospital compare website, ranges between 2.8% and 9.4% (CMS, 2014). This limited readmission

range noted for patients who have undergone total joint arthroplasty provides an opportunity to prevent fiscal penalties through the HRRP in 2015 by preventing readmissions through improved discharge teaching.

In an effort to decrease costs, hospitals have decreased the length of stay for total joint surgery patients (Ayalon et al., 2011). A nurse's ability to provide effective discharge teaching can be impeded due to the shorter length of stays, increased clinical acuity, increased nurse patient ratios, and patient characteristics including health literacy (Coleman et al., 2013; Flacker et al., 2007; Maramba, Richards, Myers, & Larrabee, 2004; Weiss, Yakusheva, & Bopay, 2011). Certain factors, such as shorter length of stays and an increase in patient acuity at discharge, have placed more emphasis on the importance of discharge teaching, since the patient is expected to perform more complex self-management tasks after discharge (Coleman et al., 2013). According to Weiss and Lokken (2009), the nurses' role in effective discharge teaching is pivotal in preventing readmissions; an ineffective nurse who is rushed has limited time to answer questions or is unprepared, decreases a patient's readiness for discharge, which correlates to readmissions.

According to a systemic review by Fredricks et al. (2010), nurses should provide patient education incorporating specific factors: multimedia, repeated multiple times, and being individualized, but no specific educational tool or device is identified. Nurses would benefit from an evidence-based tool that addresses those factors that limit patient education and at the same time provide a specific approach and method.

Purpose Statement

The purpose of this project was to assess the impact of the Power of 3 (Sanchez, 2014a) an educational tool, on preventable 30-day readmissions in total hip arthroplasty and total knee arthroplasty patients as well as compliance with patient mobility while hospitalized. The Power of 3 educational tool can provide passive learning for patients and families and serve as a reminder of active teaching for health care workers. The Power of 3 assisted the Total Joint Center in continuing to be rooted in evidence-based practice while being competitive in the healthcare market by proactively addressing the two primary reasons for readmission in total joint surgery patients. The two reasons are venous thrombolitic events (VTE) and infection (Pugely, Callaghan, Martin, Cram, & Gao, 2013; Saucedo et al., 2014; Zmistowski et al., 2013). The Power of 3 educational tool facilitates discharge teaching between patient, family, and health care workers and promotes self-efficacy and ownership in the patient's own care (Sanchez, 2014b). This project, by providing an evidence-based tool that enables nurses to provide effective and time efficient patient education, addresses those factors that impede discharge teaching: nursing time and health literacy.

Project Objectives

The Power of 3 was implemented in the Total Joint Center in October 2014 as a quality improvement project. The project objectives were to assess the influence of the Power of 3, a patient teaching tool, on

1. Promoting adherence to mobility guidelines while in the hospital.

2. Decreasing preventable readmission related to VTE and infection in total joint surgery patients.

The data were obtained by randomizing patient charts both before and after implementation of the educational tool and performing a retrospective chart review. This chart review assessed the rate of readmission related to VTE and infection as well as compliance with documentation of mobility goals.

Project Question

In hospitalized adult patients undergoing total joint surgery, did the utilization of the Power of 3, a discharge teaching tool based on the adult learning theory in comparison to standard discharge teaching

1. Increase patient mobility in hospital?
2. Decrease 30-day readmissions related to VTE?
3. Decrease 30-day readmissions related to postoperative infection?

Adult Learning Theory

According to Powers, Cartensen, Colon, Rickheim, and Bergenstal (2006), healthcare professionals can use the adult learning theory by employing paced learning through successive need to know content, providing adequate time between sessions for practice and application of applied knowledge, and building confidence by assisting a patient to demonstrate his or her progress toward specific goals. A healthcare professional promotes self-directed learning and utilization of the information by using a patient's life experiences (Sinclair & Ferguson, 2009). In addition, by encouraging the

patient to become an active participant in the learning process, it moves the focus from knowing to doing (Candela, Dalley, & Benzel-Lindley, 2006). Choi (2011) stated that meaningful learning occurs when the learner makes a connection with the information he/she deems relevant. The Power of 3 educational tool (Sanchez, 2014a) facilitates communication between patient, family, and health care workers as well as promotes self-efficacy and ownership in the patient's own care (Sanchez, 2014b).

Definitions of Terms

The following definitions are included in this project.

Adult learning theory: A set of principles and assumptions regarding how adults learn (Merriam, 2001).

Discharge instruction: According to CMS.gov (2013), this focuses on "instructions that the patient must follow after discharge" (p.1) to address any remaining issues.

Discharge teaching: Defined by Weiss et al. (2011) as the totality of teaching provided to a patient and his or her family in preparation for discharge.

Health literacy: According the Centers for Disease Control and Prevention (2014), this is "the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate decisions" (p.1).

Mobility: Ambulation without physical therapy or sitting up in the chair.

Patient education: As defined by Mensing et al. (2000), these are educational interventions that provide a patient with the knowledge and tools to fulfill his/her needs.

Patient teaching: Defined by Barber-Parker (2002), this is health information provided to the patient and his or her family regarding a disease, disease progression, treatment, lifestyle changes, and self-care activities.

Power of 3: As defined by Sanchez (2014a), this is an educational tool based on the adult learning theory that incorporates health literacy concepts and learning styles to enhance patient teaching and empower patients and their families to actively participate in their health care.

Readiness for discharge: The patient's and his or her family's perception of the patient's ability and preparedness for leaving the acute care facility (Weiss & Piacentine, 2006).

Readmission: As defined by Centers for Medicare and Medicaid (CMS.gov, 2014), this is an admission to a subsection hospital within 30 days of a discharge from the same or another subsection hospital.

Self-efficacy: As defined by American Psychological Association (2014), this is a person's belief in "his or her capacity to execute behaviors necessary to produce specific performance attainments" and "reflects confidence in the ability to exert control over one's own motivation, behavior, and social environment" (p.1).

Self-care: As defined by World Health Organization (2014), this is "what people do for themselves to establish and maintain health, prevent and deal with illness" (p.1). Self-care can include nutrition, hygiene, lifestyle, and environmental factors.

Self-management : As defined by Clark et al. (1991) cited in Barlow, Wright, Sheasby, Turner, and Hainsworth (2002), these are the day-to-day tasks needed to be performed by an individual to control a health disease.

In health care literature, patient teaching, patient education, and discharge teaching are defined similarly, but with varying emphasis on what education has been provided. For the purposes of this paper, the terms *discharge teaching, patient education, patient teaching,* and *discharge instructions* are used interchangeably and are defined as the combination of teaching provided to a patient and his or her family in regards to disease progression, lifestyle changes, and care needed upon discharge from an acute facility to prevent readmission or complications.

Assumptions and Limitations

The assumptions of this project were as follows: The primary data were collected using strict data collection guidelines and transcribed correctly to the data collection spreadsheet. The second assumption was that the statistical calculations and inferences were based on Prism 6 calculations and were accurate. Permission to use unit specific data was received. The third assumption was that the healthcare workers used the tool as instructed.

The limitation of this project was that the data were limited to the local hospital and data collected from the electronic medical record. No patient interviews or questionnaires were performed; therefore, the number and times of patient mobility were restricted to chart documentation. The final limitation was that there is no written policy mandating the use of the educational tool.

Scope

Discharge teaching is a crucial part of nursing care but can be limited due to the length of stay and staffing issues (Commodore-Mensah & Himmelfarb, 2012; Weiss et al., 2011). The focus of this project was to ascertain if by providing bedside nurses with a simple and easy method to teach their patients it would increase the amount of education they provided. This increase in education would be reflected in a decrease in preventable 30-day readmissions due to increasing a patient's self-efficacy and comprehension of the discharge teaching that health care workers have provided. The scope of this project included all adult patients who had a scheduled total hip or total knee arthroplasty between June 2014 and March 2015 at the participating hospital and who spoke either English or Spanish.

Significance to Practice

In 2012, according to Klees, Wolfe, and Curtis (2012), there were over 51 million people with Medicare in the United States. According to Gerhardt et al. (2013), Medicare participants had an 18.4% readmission rate, with over 600,000 admissions in 2012 (Wright, 2013). These readmissions have cost Medicare 26 billion dollars, with 17 billion

paid on preventable readmissions (Lavizzo-Mourey, 2013). Of those readmissions, total joint surgery readmissions cost between $12,781 and $21,216 per admission (Kiridley et al., 2014).

In October 2012, as part of the Affordable Care Act, the federal government initiated the HRRP (CMS.gov, 2014). The HRRP penalizes hospitals that have excessive 30-day readmissions in specific measures such as heart failure, myocardial infarction, and pneumonia (CMS.gov, 2014). Beginning in 2015, additional readmission measures included total hip arthroplasty and total knee arthroplasty (CMS.gov, 2014). In the United States, the current readmission rate for total joint arthroplasty ranges between 2.8% and 9.4% (CMS, 2014). According to Fredricks et al. (2010b), one key factor contributing to these readmissions is ineffective discharge teaching.

Discharge teaching plays a vital role in preventing readmissions and increasing compliance with medications and self–care (Fredricks et al., 2010b; McBride & Andrews, 2012). Factors that influence readmission include the quality of discharge instructions, health literacy, and demographics such as race, low socioeconomic status, and low educational level (Cloonan, Wood, & Riley, 2013; Hu, Gonsahn, & Nerenz, 2014). In addition, the short length of stay places the patient in a rapid stage of change where he or she transitions from a dependent adult to a self-reliant adult who may struggle with complex discharge instructions (McBride & Andrews, 2012). According to Johnson, Sandford, and Tyndall (2003), the decrease in length of stay has required that

the discharge education be more detailed, emphasizing the role that patients and families play in their continued health.

The Power of 3 (Sanchez, 2014a) allows discharge instructions to be repeated quickly and succinctly throughout the hospital stay by numerous health care workers promoting consistency in interdisciplinary communication and empowering patients and families (Sanchez, 2014a). “The Power of 3 encourages nurse and patient therapeutic communication, as well as improving nursing practice and teaching skills, allowing more time to provide care, and encourage holistic approach, focusing on not only the disease process, but addressing the person" (Sanchez, 2014c, para. 1, unpublished). According to Marcus (2014), effective patient teaching includes verbal instructions along with consideration for the patient’s learning style, literacy, and culture.

By providing nurses with a tool that can assist them in effectively and efficiently providing discharge teaching, nurses can directly influence readmissions and, as a result, impact health care costs and utilization. In addition, by implementing a project that facilitates discharge teaching in the Total Joint Center, nursing knowledge can grow. This project highlighted the bedside nurse’s role as an educator and the importance of providing simple yet effective tools that facilitate patient teaching. In addition, this project illustrated how implementing an evidence-based project at the unit level can stimulate discussion regarding mobility and 30-day readmissions on other nursing units. This discussion can increase the awareness of evidence guided practice among nurses.

Social Change

Kripalani et al. (2014) stated that to prevent readmissions, health care workers need to identify those individuals who are at high risk for readmission. Joynt, Orav, and Jha (2011) identified those patients most at risk for readmission includes elderly Medicare patients and patients who are African American. CMS (2014) concurred, identifying hospitals that care for a higher percentage of Medicaid and/or African-American patients have higher readmission rates. In addition to age, income, and race disparities, patients at higher risk for readmission include those at higher risk for low literacy (Dennison et al., 2011).

The NNLM (2014) identified those at greatest risk for low health literacy as the elderly, people with low income, immigrants, and minorities. According to the NNLM, 71% of older adults have difficulty reading print material whereas 80% have difficulty understanding forms or charts. Immigrants who have not graduated high school are also at risk for readmission due to the difficulty with health literacy. Seventy six percent of immigrants who did not complete high school and 41% of Hispanics scored at or below basic literacy ratings (NNLM, 2014). Health literacy impacts all aspects of a patient's life, including health status and access to health services (NNLM, 2014). Hansen et al. (2011) and Kripalani et al. (2014) stated that there is no single solution to preventing readmissions. For this reason, nursing needs to address those factors that contribute to readmission.

Joynt et al. (2011) stated that hospitals can reduce readmissions by addressing specific factors such as follow-up care and patient education. This project bridged the gap between health care professionals and those patients who are at risk for readmission by addressing factors that impede patient education. The educational tool used in this project addressed low health literacy through the use of pictures, color, and repetition. In addition, this project allowed those patients who are at the greatest risk for readmission more time to review and comprehend the discharge teaching provided as the education is continuous and left at the bedside. This project also addressed the language barrier with Spanish speaking patients as the nurses can provide the tool in Spanish.

Summary

Patient education strategies need to address the barriers to effective discharge education such as shorter patient stays, health literacy, patient's self-efficacy, and teaching style (Commodore-Mensah & Himmelfarb, 2012). The Power of 3 educational tool addresses the barriers of health literacy and self-efficacy by empowering the patients to become active members of their own care (Sanchez, 2014b). According to McBride and Andrews (2012), when health care professionals provide effective discharge teaching, health care entities will incur a decrease in 30-day readmissions and a healthy community. In the next section, I will discuss the literature search results regarding discharge teaching. In addition, I will review the conceptual model and evidence based model used to implement this project.

Section 2: Review of Literature and Theoretical and Conceptual Framework

Patient teaching is a pertinent part of nursing practice (Ozcan et al., 2010). Patient teaching should provide patients and their families the information for self-management and increase a patient's self-efficacy (Ozcan et al., 2010). Due to many factors such as shortened length of stay, health literacy, language barriers, and age, nurses may have difficulty in providing effective patient teaching (Kripalani et al., 2014). The lack of effective patient teaching can lead to an increase in hospital readmissions and complications (Fredricks et al., 2010b; McBride & Andrews, 2012). To examine what factors contribute to a patient's comprehension of patient teaching as well as the relationship between patient teaching and readmissions, I conducted a literature review. I will begin this section by discussing the results from a general and specific literature search. I will review the adult learning theory, which was the conceptual model for this project, and conclude with the relationship between patient teaching and the adult learning theory.

Background

This project was initiated in a 350-bed hospital, serving a population of 150,000 people. This hospital is accredited by Det Norske Veritas, and its current mission is to provide excellent patient and person centered care. The Total Joint Center is a 12-bed specialized unit in which only patients who have undergone elective total hip and total knee arthroplasty are admitted.

This project interested me from a patient teaching approach. As a cardiac rehabilitation nurse, I am tasked with providing education to patients and their families

regarding home care after open heart surgery, myocardial infarctions, and cardiac procedures. I employ the adult learning theory as well as health literacy concepts on a daily basis. The use of an educational tool that bedside nurses can use quickly yet efficiently that empowers patients and their families in preventing readmissions is what stimulated my interest in pursuing this project.

Literature Search Strategy

A literature review examining the relationship between patient teaching and readmissions was performed. The purpose of the literature review was to evaluate, combine, and review primary and secondary sources related to effective discharge teaching and effects on hospital readmissions for relevance and appropriateness. A literature search was performed using EBSCO with Medline, Science Direct, Google Scholar, Cumulative Index to Nursing and Allied Health Literature (CINAHL), Sage Journal Database, and Thoreau. The search terms included *adult learning theory + discharge teaching, effective patient discharge teaching, health literacy, readiness for discharge, effective patient discharge and nursing, discharge teaching + effective, health literacy + patient outcomes*, and *adult learning theory*. These sources were organized by constructs of adult learning, readiness for discharge, teaching strategies, and health literacy.

General

The general literature search initially revealed 983 articles within medical and nursing journals beginning in 1984 with Knowles's "Andragogy in Action" to 2014.

These articles were then narrowed down using limiters including adult patients and excluding articles that were not written in English or mentioning patient discharge and/or discharge teaching. The abstracts from the remaining articles were reviewed for appropriateness, and a final review of 25 peer-reviewed articles was performed. Common themes that emerged included adult learning, readiness for discharge, teaching strategies, and health literacy.

Six articles mentioned appropriate teaching methods. These methods include the use of multimedia approaches such as visual, verbal, and tactile to address different learning styles (Alberti, & Nannini, 2013; Fredericks, Beanlands, Spalding, & Da Silva, 2010a; Fredericks et al., 2010b; Fredricks & Yau., 2013; Suhonen & Leino-Kilpi, 2006; Veronovici, Lasiuk, Rempel, & Norris, 2013). Twelve articles referred to health literacy as a major facet to comprehending and applying discharge teaching (Alberti & Nannini, 2013; Choi, 2011, 2013; Clarke et al., 2005; Cloonan et al., 2013; Coleman et al., 2013; Gilboy & Howard, 2009; Klein-Fedyshin, Burda, Epstein, & Lawrence, 2005; Lapum, Angus, Peter, & Watt-Watson, 2010; McCarthy et al., 2012; Mitchell, Sadikova, & Jack, 2012; Samuels-Kalow et al., 2012). Health literacy, according to the U.S. Department of Health and Human Services (2003), can affect a patient's ability to perform aspects of self-care needed upon discharge to manage his/her disease process effectively. Nine articles referred to concepts related to adult learning, including individualizing the teaching provided and identifying patient's self needs (Bopay, Jerofke, Weiss, & Yakusheva, 2010; Choi, 2013; Coleman et al., 2013; Fredericks et al.,

2010a, 2010b; Fredricks & Yau., 2013; Lapum et al., 2010; McBride & Andrews, 2013; Veronovici et al., 2013). Additional adult learning theory concepts that were addressed in the nine articles included that the discharge teaching focused on improving a patient's self-care knowledge and behavior (Choi, 2011; Fredericks et al., 2010a, 2010b; Fredricks & Yau., 2013; Veronovici et al., 2013). Four articles specifically correlated readiness for discharge with appropriate and effective discharge teaching (Brent & Coffey, 2013; Coffey & McCarthy, 2012; Maloney & Weiss, 2008; Weiss et al., 2011).

Specific

In addition to the general literature search, a more refined search regarding readiness for discharge, health literacy, and teaching strategies were performed (Appendix C).

Readiness for Discharge

Readiness for discharge returned 10 articles. Readiness for discharge according to Weiss and Piacentine (2006), is defined as the patient's and family's perception of their ability to care for themselves and the disease process at home. Weiss et al. (2007) stated that a patient's readiness for discharge has a direct correlation to readmissions and reutilization of health care resources within 30 days after discharge. Readiness for discharge, according to Weiss et al., is related to the nurse's style and confidence at the time of patient teaching more than the content involved. In addition, discharge readiness is also influenced by age and comorbidities as well as living arrangements (Bopay et al., 2010; Weiss et al., 2007).

Health Literacy

Health literacy affects a person's ability to take medications appropriately and read and interpret labels and health messages. In addition, Berkman, Sheridan, Donahue, Halpern, and Crotty (2011a) stated that people who have low health literacy have an increased incidence of depression, increased hospitalizations, and an increase in mortality. Health literacy has a direct impact on a patient's comprehension of the discharge instructions that the nurses provide. According to Houts et al. (2001), the use of pictographs when providing medical information can aid patients with low literacy in recalling information. Other tools, according Berkman et al. (2011b), which health care professionals can use to assist those people with low literacy include rewriting information into simpler text, adding illustrations, and utilizing audio or visual instructions.

Teaching Strategies

Teaching strategies include methods that are geared towards health literacy and learning styles. Learning styles are a person's preferred way of learning and can be visual, auditory, and/or kinesthetic (Russell, 2006). Visual learners acquire knowledge best through reading and seeing pictures or diagrams (Russell, 2006). Auditory learners prefer hearing and talking through the process, whereas kinesthetic learners need to be manipulating or moving to best acquire knowledge (Russell, 2006). Teaching strategies should include tools that appeal to a range of learners and include a multimedia approach (Russell, 2006). To assist those patients who have low literacy, the use of simple

pictographs/pictures is beneficial (Choi, 2013; Houts et al., 2001). The pictures should be simple and reflective of one element of instruction (Choi, 2013).

Adult Learning

Adult learning theory concepts influence how and when nurses should provide discharge teaching. According to Knowles and Associates (1984) and Merriam (2001), the basic concepts in the adult learning theory include:

- Adults have accumulated life experiences that provide resources for their learning.
- Adults are self-directed and are independent learners.
- Adults accept responsibility for their learning and they direct the time, place, and method or learning style.
- Adults are internally motivated to learn.
- Adult's learning needs are related to their social roles and responsibilities.
- Adults are problem-centered and learn to address those problems.
- Adults being problem-centered expect the information obtained to be directly relevant to the problem and immediately applicable.
- Adults are transformational learners where what they learn changes how they view the world.

In adherence with the adult learning theory concepts, a nurse should provide discharge teaching that is individualized and that is relevant to increasing a patient's self-efficacy.

Gap in Literature

The literature review highlights the need for effective patient teaching that utilizes multimedia approaches in numerous educational sessions. The literature review does not provide one all-encompassing tool or approach that bedside nurses are able to use quickly and efficiently. Identifying an educational tool that can address health literacy and language barriers would enable nurses to provide effective patient teaching and increase a patient's self-efficacy. This project would add to the current literature the importance of adult learning based educational tools, tools for effective discharge teaching, and the role of discharge teaching throughout the hospital stay. In addition to these this project would add an example of an effective patient teaching tool, one which bedside nurses can use effectively and quickly.

Conceptual Framework

Adult Learning Theory

The adult learning theory, developed by Knowles, is a combination of andragogy and self-directed learning (Merriam, 2001). Andragogy, the first pillar, was developed in contrast to pedagogy. Pedagogy classifies the learner as a dependent person, giving the instructor or teacher the full responsibility for making decisions about what, how, and when a subject should be taught. Pedagogy also focuses on common teaching tools such as lecture and it disregards a learner's experiences and his or her readiness to learn

(Knowles & Associates, 1984). It is assumed in pedagogy that a person's motivation to learn is influenced by external pressure such as teacher's and peers expectations peers (Knowles & Associates, 1984).

Andragogy organizes how adults learn into a framework of assumptions, strategies, and principles (Knowles & Associates, 1984). Andragogy assumes that the adult learner is self-directing and that he or she has a desire to be perceived as taking responsibility for his/her actions. According to Knowles and Associates (1984), when adults are placed in a situation in which they are unable to participate in decision making, a feeling of resentment develops (Knowles & Associates, 1984). Other assumptions in andragogy include the concept that adults acquire a lifetime of knowledge and they can serve as resources to other participants in a learning situation. In regards to their readiness to learn adult learners become willing to learn when acquiring knowledge is imperative to performing a task more effectively in their lives (Knowles & Associates, 1984). According to andragogy, adult learners are problem-centered and they do not learn just for the sake of learning as children do. The final assumption of andragogy is that internal desires motivate adult learners these can be a better quality of life, increased self-confidence, or recognition (Knowles & Associates, 1984).

The second pillar of the adult learning theory is self-directed learning. Based on the works of Houle and Tough, self-directed learning is grounded in humanistic philosophy (Merriam, 2001). The first underlying assumption of self-directed learning is that a person should accept the responsibility of his/her own learning (Merriam, 2001).

The second assumption of self-directed learning is the development of transformational learning and critical reflection within the learner. The final assumption of self-directed learning is that this transformational process should promote emancipatory learning and social action (Merriam, 2001). Self-directed learning requires the adult to assess where he/she is in regards to self-directedness, self-readiness, and personal characteristics. According to Merriam (2001), adults can remain self-directed over long periods of time and change when they progress from novice to expert in a subject matter. This emphasizes the need for critical self-reflection. The combination of these two pillars provides the basic assumptions of the adult learning theory as listed previously in this chapter.

Adult Learning Theory and the Effect on Patient Education

The adult learning theory assists educators in recognizing the unique needs of an adult learner, including those issues of trust and acceptance. According to Wills and McEwen (2011), when an adult learner is placed in an environment of openness, trust, and acceptance they are able to learn effectively. When nurses use the adult learning theory and are aware what motivates adults to learn and what environment is best suited to an adult learner, they can provide effective discharge teaching (Syx, 2008). The situation and the context of that learning, according to Merriam (2011), is crucial to the comprehension and application of that knowledge.

Socially, the adult learning theory has a direct impact on health care costs by influencing patient knowledge and comprehension. The change in patient comprehension

influences all aspects of a patient's care including health promotion, prevention, and treatment. The adult learning theory can affect all adult patients from the new mother caring for her infant to an elderly patient learning how to manage his or her chronic disease. The adult learning theory influences how health care professionals teach their patients, which in turn can affect a patient's comprehension and his or her management of an illness or disease. A patient's lack in comprehending and his or her inability in following discharge instructions can affect readmissions and the use of community resources (Lerret, 2009). Friedman, Cosby, Boyko, Hatton-Bauer, and Turnbull (2011) stated that the most effective patient education delivery was one which accounted for the patient's individual needs, was structured, and incorporated multiple different learning styles. These aspects of best practice reflect the adult learning theory in that they acknowledge a patient's individuality and his or her learning abilities.

Evidence Based Model

Permission was granted to use the IOWA model of evidence-based practice, developed by Titler and Associates (2002), to promote quality care for this project (Appendix E and F). The IOWA model, awarded the Sigma Theta Tau International Research Utilization Award 1997 (Titler et al., 2002), has been cited in more than 175 scholarly journals as a basis for implementing evidence based practice. The IOWA model begins with a knowledge or problem trigger (White & Dudley-Brown, 2012). Literature regarding the use of the adult learning theory and health literacy in patient education was the initial trigger for the project. A needs assessment was completed and the tool was

implemented as a quality improvement tool in a pilot unit to assess the effect on 30-day readmissions. This step is in alignment with the IOWA model of piloting change in practice (White & Dudley-Brown, 2012). Utilizing the IOWA model, after implementing the tool in a pilot unit, the process and outcomes will be evaluated and practice guidelines will be modified (White & Dudley-Brown, 2012). If the results are significant, the expectation is to implement this tool hospital-wide.

Summary

Effective patient education relies on addressing the health literacy, readiness for discharge, adult learning preferences, and teaching methods. Health care professionals should provide education in multiple sessions using a combination of visual, auditory, and tactile approaches. Utilizing visual and auditory strategies also assist those patients with low health literacy in comprehending the information presented. Effective patient educational approaches include recognizing that the adult learner prefers to set the time and place for learning to occur, as well as ensuring the information presented can be immediately utilized by the patient. This project addressed the need for an educational tool that empowers patients, families, and health care workers, allowing education to be continuous, simple, yet precise. Implementing a patient educational tool that can facilitate all nurses, not just patient educators, in providing concise and effective patient teaching is important to me as a patient educator. Identifying the need for this project, and then implementing this educational tool, allowed me the opportunity to impact patients across

the spectrum of care and improve the health of the community. The next section discusses how this educational tool was implemented within the Total Joint Center.

Section 3: Methodology

According to Ozcan et al. (2010), patient education is a mainstay of nursing care and should increase a patient's self-management. Issues in providing effective patient education arise due to a variety of factors from both the patient's ability to comprehend the information and the nurse's ability to relay the education. The purpose of this project was to assess the efficacy of a patient teaching tool that uses the adult health theory and low health literacy concepts on preventable 30-day readmissions. In this section, I will discuss the project's design including the needs assessment, participants, data collection, and analysis as well as the evaluation plan.

Project Design

The educational tool was initiated as a quality improvement program after a needs assessment had been performed to assess which unit would benefit from an enhanced patient teaching tool. The total joint coordinator provided education to the staff and physical therapists regarding the educational tool. The project team then laminated and placed the tool in the alcove window of every patient room in the Total Joint Center. The total joint coordinator educated patients and their families about the Power of 3 (Sanchez, 2014a) during the preoperative education classes. After surgery, the total joint coordinator reviewed the educational concepts of the Power of 3 during daily rounds with the patients who had total joint surgery. The staff also reviewed the educational concepts of the Power of 3 with the patient and his or her family throughout the day. After the patient completed his or her gym time for the day, the physical therapist returned the

patient to his or her chair and marked on the Power of 3 the time up in the chair and the expected time to return to bed.

A retrospective nonexperimental design was used to evaluate the effectiveness of the Power of 3 (Sanchez, 2014a) on patients undergoing total joint arthroplasty in regards to preventable 30-day readmissions and meeting mobility goals while hospitalized. A power analysis was performed to determine the sample size for a full powered study, and a sample of 45 participants for each group was identified. Inclusion criteria were as follows:

- Admitted to the participating local hospital,
- Immediate post total joint surgery at participating local hospital,
- An adult,
- English or Spanish speaking patients, and/or
- Mentally competent to participate; mentally competency was based on the patient's ability to comprehend written and/or spoken instructions.

Exclusion criteria included the following:

- Postoperative length of stay greater than 7 days,
- Nursing home upon discharge, and/or
- Patients physically impaired and unable to ambulate.

The retrospective study included patients from June 2014 until March 2015.

Needs Assessment

Prior to initiating this project, a needs assessment was conducted to ascertain which unit would benefit from the modified patient teaching approach in preventing readmissions. Based on Medicare's Hospital Compare website, the normative need demonstrated "no different than national rate" (Medicare.gov, n.d) on heart attack, heart failure, pneumonia, and total hip/joint arthroplasty measures. The national readmission rates for three of the four measures were greater than 15% whereas the national readmission rate for total hip/joint arthroplasty was only 5.2% (Medicare.gov, n.d). A 5.2% readmission rate in this organization would equate to a total of 21 patients a year. To maintain a readmission rate of less than 21 patients total in a year, this organization needs to provide effective patient education to help patients and families avoid preventable readmissions due to infection or VTE. In addition, the vice president chief nursing officer perceived there to be an educational need as the participating hospital's length of stay for total hip/knee arthroplasty is only 2 midnights, allowing limited time for patient education. Therefore, to continue to be competitive in the health care arena and prevent 30-day readmissions, the Total Joint Center was chosen for this project.

Project Team

This project's team consisted of the total joint coordinator, surgical educator, cardiac rehabilitation nurse (me), and director of surgical services. The total joint coordinator and I recruited the team. The total joint coordinator established the project as a quality improvement project based on the cardiac rehabilitation in-patient teaching

project. Team members were chosen based on leadership and experience. The director of surgical services was included as she had a direct influence on the success of the program related to approval and finances. The educator of surgical services was included as a key member needed to educate the staff regarding the new tool. The total joint coordinator was included as the primary liaison and chair of initiating education with patients, patients' significant others, staff nurses, and physical therapists. The cardiac rehabilitation nurse was included due to her expertise in patient education and the use of the educational tool. All team members had worked together on previous committees. The stakeholders involved included the patients, patients' significant others, physical therapists, and bedside nurses.

Data and Participants

Population and Sampling

The population was a retrospective random sampling of all adult patients who met the inclusion criteria and had total hip/knee joint arthroplasty at the local participating hospital from July 2014 until March 2015. The medical record numbers of all patients who had total hip/knee arthroplasty during the stated time frame were obtained from the total joint coordinator. Adhering to inclusion and exclusion criteria, a total of 90 random patients were selected. This selection included 45 patients for the 4 months prior to implementation of the educational tool and 45 patients for 4 months after the implementation of the education tool. I had no contact with the population being sampled.

Data Collection

This project's coordinator collected data retrospectively; therefore, no informed consent was required. Internal Review Board (IRB) approval from the participating hospital and from Walden University was obtained (IRB number 2014.22; Walden IRB 08-31-15-0072348). A list of the medical record numbers of patients who had total joint surgery was obtained from the total joint coordinator. The medical record numbers were sorted for pre- and post-intervention, and 45 numbers were randomly selected from each group. After accessing the electronic medical record, the medical record numbers were deleted to ensure confidentiality. I complied with the participating hospital's electronic medical record confidentiality policy as well as with Health Insurance Portability and Accountability Act (HIPAA) standards. After ensuring that those patients selected conformed to inclusion and exclusion criteria, data were collected from the electronic medical record. Data collection included demographics of age, gender, ethnicity, and length of stay in hospital; type of total joint arthroplasty surgery; disposition on discharge; readmission within 30 days post discharge; complications; and mobility or out of bed documentation per shift. These data were collected and tallied in an Excel spreadsheet. All data collected are secured on the participating hospital's internet. Data collection worksheets were secured in the cardiac rehabilitation office in a locked file and then shredded upon entry into the Excel spreadsheet.

Data Analysis

The data were analyzed using mean as well as an independent *t* test, Fishers exact test, and Mann Whitney U to assess for comparison between before and after implementation of the educational tool on 30-day readmission and patient mobility or out of bed documentation. The data were analyzed using Prism 6 software.

Products of the DNP Project

Project Evaluation Plan

This project used process and outcomes evaluations. A process evaluation was used to review project related factors and how these factors can be improved to meet each of the project's goals (Hodges & Videto, 2011). The factors that I reviewed include resources, activities, outputs, and outcomes. Included in this assessment was the participation and education of the staff nurses, the total joint coordinator, and the timing and staffing needed to be able to perform the education. Other resources that were considered included budget for supplies such as laminating, printing, and adhesive strips.

Primary Product

Initial outputs that this project evaluation included were completing education with staff regarding the use and benefit of the educational tool. In regards to educating families, outputs included the additional time needed by the total joint coordinator to review the educational tool in the preoperative class with prospective patients. The total joint coordinator and I were responsible for the initial and continuing education of the staff members regarding the use of the educational tool. The total joint coordinator was responsible for educating patients and their families regarding the purpose and function of the educational tool.

Other outputs included modification of the educational tool for use with total joint patients as well as printing and posting the educational tool in all total joint surgery patient rooms. The director of surgical services was responsible for approving the budget

for the lamination and adhesive strips. I was responsible for performing the literature search in regards to total joint surgery preventable readmissions; modifying the educational tool to be used for total joint surgery patients; providing initial education to the total joint coordinator, surgical educator, and director of surgical services; providing continuing education for staff as needed; and the collection of data from the electronic medical record. The data needed to perform a process evaluation included educational sign in sheets for staff as well as printing and laminating of the teaching tool.

Strengths, Weaknesses, Opportunities, and Threats

Strengths of the project included support from the director of the Joint Center and the Vice President of Patient Care Services. In addition, the organization is on a journey to advance nursing education and evidence based projects therefore is supportive of nursing initiatives. The weaknesses for the project included a lack of consistent staff within the Total Joint Center. The majority of the staff at that time were resource or flex pool staff, limiting the consistency in using the tool as well as lack of education for each resource person who works on the Total Joint Center. The opportunities of the project included the potential for a new hospital wide teaching tool that empowers nurses, patients, and families. Obstacles or threats that the team encountered included opposition from the staff regarding another change in practice as well as the lack of participation from staff in conducting the patient education.

To address these potential obstacles and weaknesses, the total joint coordinator and I provided education to staff, nurses, and physical therapists regarding the purpose

and desired effect of the educational tool. The total joint coordinator relayed the simplicity of the tool and the time required of the staff on a daily basis, as the total joint coordinator is on the unit daily.

The outcomes evaluation assessed the short and long-term objectives of the project. The long-term goal was to decrease 30-day readmissions in total joint surgery patients related to VTE and infection. According to Bastable (2008), Fredricks et al. (2010a), Fredricks et al. (2010b), Goodman et al. (2013), Hansen et al. (2011), Joynt et al. (2011), McBride and Andrews (2012), Shimizu et al. (2014), and Weiss et al. (2007), when patients and their families are provided with appropriate and effective patient education there is a decrease in 30-day preventable readmissions. Therefore, if the Power of 3 (Sanchez, 2014a) was an effective teaching tool, the patient and his or her family should have an increase in self efficacy regarding how to prevent VTE and infection at home, how to quickly identify signs of infection and VTE, and interventions needed to address VTE and infection at home without hospital readmission. This goal was demonstrated through a decrease in 30-day readmissions related to VTE and infection, from one readmission pre intervention to zero readmissions post intervention. The short-term goal was to increase a patient's mobility during hospitalization. The data needed to evaluate the short and long term goals included a review of the patient's chart assessing the documentation of movement as well as reviewing the number and cause of 30-day readmissions related to VTE and infection.

Sustainability

In order to sustain this project, team members viewed the educational tool as an expected and normal part of everyday operations. Currently the nurses and physical therapists on the Total Joint Center have become accustomed to seeing the Power of 3 (Sanchez, 2014a) educational tool in all of the patient rooms. Further staff education may need to be performed with staff to promote sustainability due to staff turnover. New staff will be educated on the importance and use of the Power of 3 upon hire and during orientation. In addition, depending on the success of the educational tool with total joint surgery patients, the vice president chief nursing officer is evaluating the potential use of the Power of 3 throughout the entire hospital.

Sustaining this project can lead to a decrease in readmissions related to VTE and infection in total joint surgery patients. This potential decrease in readmissions can affect the hospital's financial performance. A decrease in preventable 30-day readmissions can lead to an increase in reimbursement from the government, an increase in the number of scheduled cases due to positive outcomes, and an increase in money on hand related to a decrease in financial penalties.

Summary

The goal of the project included increasing mobility and decreasing 30-day readmissions related to VTE and infection in total joint surgery patients. The sample population was obtained from a single center. All patients in the post intervention sample population were exposed to the educational tool. A retrospective sampling was obtained

of patients before and after implementation of the teaching tool to assess the impact of the Power of 3 on readmissions and mobility. The data were analyzed to assess for a statistical difference in 30-day readmissions and documentation of mobility. This method of education has the ability to positively affect all patients within the organization, especially those who have a shortened length of stay, have low health literacy, and are elderly.

Section 4: Findings, Discussion, and Implications

Providing patient education is a vital part of nursing care. The purpose of patient education is to provide patients and families with the information that is required for care to continue at home and increase a person's self efficacy (Marcus, 2014; Ozcan et al., 2010). Many factors influence the effectiveness of patient education. These include shortened length of stay; a patient's health literacy, language, and age; as well as the nurses ability to teach (Kripalani et al., 2014; Weiss et al., 2008). According to Weiss et al. (2007), there is a direct correlation between patient education and 30-day hospital readmissions. To address these issues, an educational tool, the Power of 3 (Sanchez, 2014a), was initiated as a quality improvement project in the Total Joint Center in October 2014.

The project objectives were to assess the impact that the Power of 3, a patient teaching tool had on the following:

1. Promoting adherence to mobility guidelines while in the hospital.
2. Decreasing preventable readmissions related to VTE and infection in total joint surgery patients.

The project question was as follows: In hospitalized adult patients undergoing total joint surgery, does the utilization of the Power of 3, a discharge teaching tool based on the adult learning theory, in comparison to standard discharge teaching:

1. Increase patient mobility in hospital?
2. Decrease 30-day readmissions related to VTE?

3. Decrease 30-day readmissions related postoperative infection?

Summary of Findings

To assess the impact that the Power of 3 had on increasing patient mobility and decreasing 30-day hospital readmissions after total hip/knee arthroplasty, a retrospective study was performed. Data were collected through a retrospective chart review and a total of 90 randomized patient charts were reviewed. Data that were collected included the following:

1. Gender,
2. Primary language spoken,
3. Whether an initial physical therapy consult was initiated on the day of surgery,
4. Documentation that the patient was out of bed each day,
5. The length of time that the patient was out of bed,
6. Documentation by the nursing staff that the patient attended physical therapy daily,
7. 30-day readmission status, and
8. 30-day readmission diagnosis.

The Power of 3 (Sanchez, 2014a) demonstrated a statistically significant change in the length of time a patient remained out of bed on the day of surgery after implementing the educational tool (0.75 hours vs. 1.514 hours $p = 0.0182$, CI 95%) but not on subsequent days. In addition, the number of patients who nursing staff

documented were out of bed was also statistically significant on the day of surgery (12 patients vs. 24, $p = 0.0461$, CI 95%) but decreased on the following days, although not statistically significantly.

Findings and Implications

The project the Power of 3 had three goals or outcomes. The short term goal of the project was to increase patient mobility during hospitalization. The long term goal was to decrease 30-day readmission in total joint surgery patients related to VTE and infection. Currently, the short term goal was accomplished, but the data did not show a change in preventing 30 day readmissions. Data were analyzed employing Mann Whitney U and Fishers exact test as the data did not pass normality tests for Gaussan distribution.

Short Term Goals

The short term goal was achieved as the patient's mobility as demonstrated by out of bed (OOB) documentation and time spent out of bed increased after the intervention on the day of surgery (DOS). The results were as follows. The sample size included 90 patients, with 45 patient in each group. The groups were homogenous. English as a primary language was noted in 82% ($n = 37$) of the patients in the preimplementation group and 96% ($n = 43$) of patients in the postimplementation group ($p = 0.0897$). Initial physical therapy consults on the day of surgery occurred in 64% ($n = 29$) of the preimplementation group and 76% ($n = 34$) in the postimplementation group ($p = 0.3577$). In the preimplementation group, there was one readmission (2%), and in the

postimplementation group, there was zero readmissions. The admitting diagnosis in the preimplementation group was cellulitis.

Mobility goals were to have the patient up and out of bed on the day of surgery for at least 2 hours, and on subsequent days to be out of bed for at least 2 hours twice a day after physical therapy. The number of patients that the nurse documented who were OOB was calculated. The results were as follows. In the preimplementation, OOB documentation DOS was 15% (n = 12), postoperative day (POD) 1 OOB documentation was 33% (n = 29), and POD 2 OOB documentation was 22% (n = 19). In the postimplementation DOS OOB documentation was 29% (n = 4), POD 1 OOB documentation was 30% (n = 26), and POD 2 OOB documentation was 17% (n = 15). Using Fishers Exact test demonstrated a significant difference on OOB mobility on the DOS between pre- and post-implementation (12 patients vs. 24, p = 0.0461, CI 95%) but not on POD 1, 29 patients vs. 26, p = 0.3850, CI 95%) and POD 2 (19 patients vs. 15, p = 0.3838, CI 95%).

The average time that patients remained out of bed was calculated, and the results were as follows. In the preimplementation group on the DOS, average time was 0.75 hours, POD 1 average time was 2.446 hours, and POD 2 average time 1.293 hours. In the postimplementation group on the DOS, average time was 1.514 hours, POD 1 average time was 3.244 hours, and POD 2 average time 0.844 hours. Using Fishers exact test, the time that a patient remained OOB was significantly different between the pre- and post-implementation group on the DOS (0.75 hours vs. 1.514 hours p = 0.0182, CI 95%). On

POD 1, the time that a patient remained OOB increased but was not statistically significant (2.446 hours vs. 3.244 hours, $p = 0.2499$), and on POD 2, time decreased after implementation but was not considered statistically significant (1.293 hours vs. 0.844 hours, $p = 0.5971$). Table 1 shows the pre-and post-implementation findings and the *p* values.

Table 1

Pre- and Post-implementation data

CI 95%		Preimplementation	Postimplementation	*P value*
Gender (*N*=)	Male	18	23	0.3974
	Female	27	22	
Language (*N*=)	English	37	43	0.0897
	Non-English	8	2	
Time OOB (hours)	DOS	0.75	1.514	0.0182
	POD 1	2.446	3.244	0.2499
	POD 2	1.293	0.844	0.5971
Nurse documentation OOB (*N*=)	DOS	12 (Yes) 26 (No)	24 (Yes) 20 (No)	0.0461
	POD 1	29 (Yes) 14 (No)	26 (Yes) 19 (No)	0.3850
	POD 2	19 (Yes) 24 (No)	15 (yes) 29 (No)	0.3838

Readmission (*N*=)	1	0	1.000

Unanticipated Outcomes and Limitations

The Power of 3 did show statistical significance in increasing nursing documentation and patient OOB mobility on the DOS, but not on the subsequent days. This could be due to a couple of factors. One factor could be the lack of direct observation of the patients, as this was a retrospective review. In addition, nurses were not required to use the Power of 3 as it was not dictated in a policy. Analyzation of the data did not demonstrate any consistency in documentation among staff members. Other factors that may have influenced findings include on the day of discharge, patients may be discharged early morning to late afternoon. The early morning discharges would not have documented long times OOB, affecting the average time on POD 2. The lack of consistent twice a day therapy and initial physical therapy consults on the DOS and subsequent days may also have influenced the documentation of OOB as well as the amount of time the patient was OOB.

Implications

One of the main constructs of the adult learning theory is that adults learn best when the information is important to them, is applicable to their daily lives, and is taught at a time and place of their choosing. The Power of 3 allows patients and families to review the discharge information at the time that is most convenient to them, as well as allowing repetition and continuity in the teaching. In addition, the educational tool allows increased communication between caregivers, families, and patients. This is clearly

demonstrated in the increased time that the patient's remained OOB after surgery on the day of surgery.

The Power of 3 (Sanchez, 2014a) has the potential to influence patient discharge teaching and mobility throughout healthcare organizations. The Power of 3 demonstrated the effect of having mobility goals clearly identified for the patient, family members, and health care members. Implementing the Power of 3 and mandating its use through a policy change may increase nurses' documentation, increase communication between team members, and decrease 30 day preventable readmissions in different surgeries.

The Power of 3 has demonstrated the ability to increase OOB mobility. This educational tool can impact those who are marginalized in the health care system, the elderly, people with poor economic status, non-English speakers, and minorities. The Power of 3 crosses the language and social barriers by providing a simple yet precise way to communicate goals and educational concepts. The clock faces encourage mobility, communicating mobility goals without a language barrier. It allows those marginalized the time to absorb the information presented, formulate questions, and communicate to their health care providers regarding those goals. By providing time and a consistent, non-threatening manner in which to communicate health care goals, the at-risk populations have the potential to increase their self efficacy and decrease complications and re-admissions.

Recommendations

The use of the Power of 3 (Sanchez, 2014a) as an educational tool is applicable in all areas of nursing. The tool provided a means for patients, families, and health care providers to communicate discharge teaching and a common goal regarding mobility while the patient is hospitalized. The concept of providing patient education throughout the hospital stay through a non-threatening, easy to use communication device has demonstrated the significance in promoting adherence to a common goal. To ensure use of the Power of 3, a policy will need to be written that mandates the use of the Power of 3 and the teaching concepts behind the mnemonic alliteration. To improve health care worker's documentation, a change in the electronic medical record may be required that simplifies OOB charting, but is specific to time and activity, including ambulation, distance, and out of bed activity.

The concept in the Power of 3 is to provide simple yet precise discharge instructions that are evidence based, using alliteration and a mnemonic device. The tool can be modified to any nursing area. To implement the Power of 3 in another nursing area the organization should first obtain permission to modify the tool and follow the guidelines provided by the tool's designers.

Further studies are recommended to demonstrate a significant change in patient's 30-day readmissions with other nursing cohorts, as well as a larger subset of patients to demonstrate change in mobility and length of stay. In addition, additional studies are recommended to assess the impact that the tool has on decreasing length of stay.

Doctoral Team

The project team included the total joint coordinator, the director of surgical services, the surgical educator, and the cardiac rehabilitation nurse (me). The total joint coordinator was instrumental in providing initial and continued education to the patients as well communicating additional educational needs regarding the Power of 3. The total joint coordinator conducted preoperative educational classes where the Power of 3 was first introduced to the patients and then conducted daily patient rounding on all total joint surgery patients after surgery. The surgical educator and director of surgical services provided the needed financial and educational support for continued success of the project. My role included performing the literature search; modifying the educational tool; providing the initial education to the total joint coordinator, surgical educator, and director of surgical services; and collection, analyzation, and dissemination of the data from the electronic medical record. Recommendations from the total joint coordinator included making the Power of 3 larger, placing the Power of 3 under the television set rather than at the alcove window. Recommendations from the director of surgical services and the surgical educator included increased instruction regarding documentation in the electronic medical record for all health care workers. Currently, the Power of 3 is being used with open heart surgery patients and total joint arthroplasty patients. The director of surgical services has a goal of modifying the tool to be used with post elective colorectal surgery patients to promote early mobilization and prevent 30-day readmissions.

Strengths and Limitations of the Project

The strengths of the Power of 3 project included utilizing the strengths of team members, from patient interaction to vision and communication skills. In addition, the project identified the importance and need of continual patient education as well as communication among health care workers. Other strengths included promoting evidence based practice within the organization and highlighting that a doctorally prepared nurse does not have to be a nurse practitioner or in administration. The limitations included being isolated to one unit within the organization and limited to one hospital; therefore generalization of the data obtained is not possible. Other limitations included the time from implementation to data gathering left a lull in momentum and a lack of motivation to continue with the process. In addition, the lack of a policy mandating the use of the Power of 3 provided some healthcare workers with the opportunity to not utilize the tool. Another limitation was the sample size of the project, with a small initial 30-day readmission rate, the small sample size may not have adequately captured the any readmissions or change in readmission rates. A larger sample size might better reflect the impact that the Power of 3 has on 30-day readmissions.

Future projects include the use of the Power of 3 for heart failure patients, identifying additional discharge teaching strategies that use the adult learning theory, as well as assessing how discharge instructions are provided throughout the organization and if those methods comply with the adult learning theory. If not, how can those

methods be changed to better serve the patients, especially those with low health literacy, minorities, and non-English speaking patients.

Summary

This project demonstrated the effectiveness of the Power of 3 and the potential to impact patient education. The Power of 3 educational tool can be implemented in any nursing area to promote continuous discharge teaching, as well as a means for nurses to provide simple, yet precise discharge instructions; and communication between patient, family, and health care workers in regards to mobility goals while hospitalized. Assessing and addressing the limitations outlined previously should aid in the success of future projects.

Section 5: Scholarly Product

The most important step in performing an evidence based project is the dissemination of the results (Zaccagnini & White, 2011). The results of this project will be disseminated to the organization via two methods. First, the IRB will receive a project summary report in which the data analysis will be communicated to the board members. In order to communicate the project results to the hospital at large, a poster presentation will be designed and presented at the annual evidence based practice day. At this event, projects that have been implemented throughout the organization are displayed for staff members to review.

Dissemination of project results advances the nursing profession and promotes new ideas (Oermann & Hays, 2011). To further communicate the effectiveness of the Power of 3, the results of this project can be disseminated via either poster presentation, journal publication, and/or podium presentation at a national or local conference. One venue that would be appropriate for dissemination would be the American Nurses Credentialing Center (ANCC) Pathway to Excellence conference. This conference focuses on evidence based practice and promoting nursing excellence, and an abstract for either a podium or poster presentation could be prepared and submitted for next year, as this year's deadline has already passed. Another option for dissemination could be submission of a manuscript to the *Med/Surg Nursing* journal. According to the author guidelines, the goal of the journal is to enhance a nurse's knowledge and improve the health of adults. Another journal that I can consider is *Patient Education and Counseling*.

The author guidelines state that the journal looks to explore communication models in health care.

Analysis of Self

Leaders have specific qualities that define them as leaders. These traits include innovation, inspiration, and challenging the status quo (Curtis, de Vries, & Sheerin, 2011). Nursing leaders have these qualities, but according to Curtis et al. (2011), they also have one additional quality: They "influence and improve the practice environment" (p. 307). When first starting the DNP program, I can honestly reflect and say that I felt that I might be innovative, but inspiring or challenging the status quo were not adjectives I would have used to describe myself. In fact, when performing a perception of leadership quiz by Grossman and Valiga (2009), I scored a 60 out of 80, which was defined as a "high perceived leadership ability." Interestingly though, one of the lowest scores was in regards to change and self-confidence.

As I reflect now, I realize the amount of growth, personally and professionally, I have made over the last 2 years. I realize that initiating change requires me to challenge the status quo, thereby invoking change. To be able to successfully implement a project, I had to be confident in the project and in my ability to guide and influence others, and I had to let them see what I knew the project could do for patients and staff. I understand that by realizing that change needed to be made and what could be done to influence that change required creativity and innovation, traits that I would have never attributed to myself, until now.

According to Grossman and Valiga (2009), one of the qualities of a leader is serving as a symbol and encouraging the growth of others. This trait I truly see as one of the proudest accomplishments of my project. Many floor nurses have asked me why I am getting my DNP and what I plan to do with it. I tell them that it had nothing to do with advancement at the organization but with my personal dream of accomplishing my Doctor of Nursing Practice (DNP). My journey to obtain my DNP helped me grow as a nurse, helped me improve care for my patients, and helped me improve the working environment for nurses. It is through my journey that many have changed their views of what a DNP does and their goals of continuing their own journey in lifelong learning.

Finishing the project is overwhelming and surreal. It is a journey that I felt for a while would never end and for a while I was unsure of ever completing. I reflect back at the challenges and how it has helped me grow as a person and as a leader. One of the challenges included frustrations with new operating systems including down time with the electronic medical records. In addition, other challenges revolved around personal management of time and sacrifices with family, children, and events. These challenges helped me grow and place into perspective what was important in my life, what I hoped to accomplish, and learning to let go over the events that I had no control over. Looking at the leadership quiz now, I can honestly change some of my answers and realize that yes I am a leader, I do inspire others, I do challenge the status quo, and I am creative and innovative.

For my future, I envision becoming published regarding this project and others regarding simulation learning. I envision myself forging headlong into new unchartered waters as a simulation educator. I can see myself promoting change and inspiring others to challenge the status quo and consistently promoting best practice. I see myself having textbooks published and manuscripts written. I now have the confidence to head towards those goals, recognizing I am a leader. A quiet, but unmistakable leader.

Summary

The Power of 3 project provided statistical significant changes in improving OOB mobility in patients post total hip or knee arthroplasty. The concept in the Power of 3 is to provide simple yet precise discharge instructions that are evidence based, using alliteration and mnemonic device. The tool can be modified to any nursing area and implements evidence based practice at the bedside. This educational tool has the potential to improve care and close the divide between those at highest risk for readmission by addressing health literacy, language barriers, and communication. This tool empowers patients and health care workers to identify and meet the same goals, improving the patient's self-efficacy and health.

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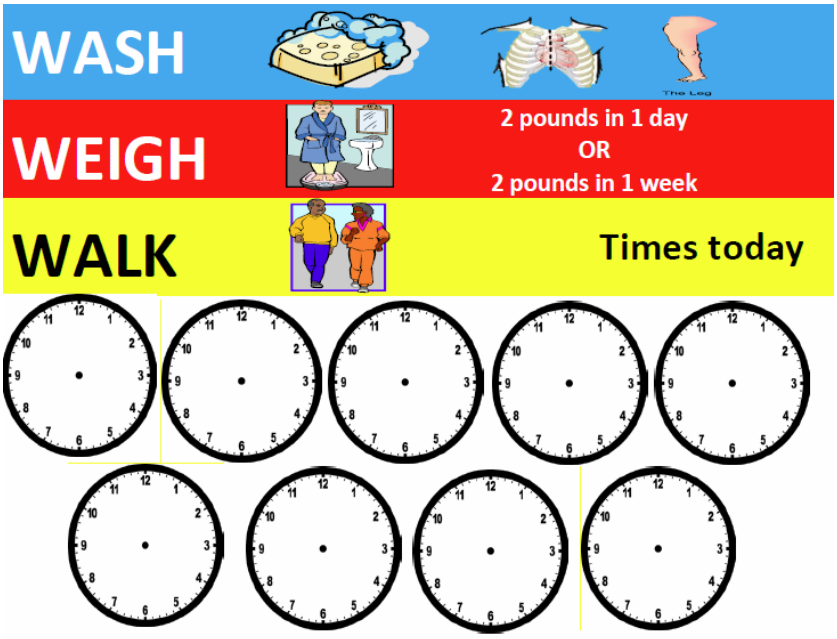
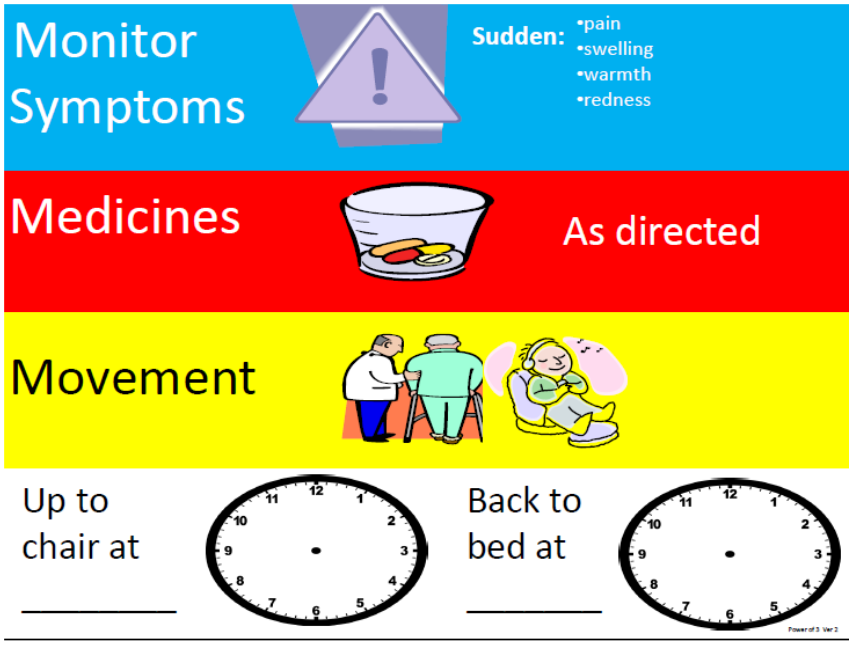
Appendix A: The Power of 3 (Original)



Appendix B: The Power of 3 (Modified Version for Total Joint Surgery Patients)



Appendix C: Literature Search Results

Author/Date	Health Literacy	Readiness for Discharge	Adult Learning Concepts	Teaching Methods
Alberti, T., & Nannini, A. (2013).	x			x
Bopay, K., Jerofke, T., Weiss, M., & Yakusheva, O. (2010).			x	
Brent, L., & Coffey, A. (2013).		x		
Choi, J. (2011).	x			
Choi, J. (2013).	x		x	
Clarke, C., Friedman, S. M., Shi, K., Arenovich, T., Monzon, J., & Culligan, C. (2005).	x			
Cloonan, P., Wood, J., & Riley, J. (2013).	x			
Coffey, A., &McCarthy, G. (2012).		x		
Coleman, E., Chugh, A., Williams, M., Grigsby, J., Glasheen, J., McKenzie, M., & Min, S. (2013).	x		x	

Fredericks, S., Beanlands, H., Spalding, K., & Da Silva, M. (2010a).			x	x
Fredericks, S., Guruge, S., Sidani, & Wan, T. (2010b).			x	x
Fredricks, S., & Yau, T. (2013).			x	x
Gilboy, N., & Howard, P. (2009).	x			
Klein-Fedyshin, M., Burda, M., Epstein, B., & Lawrence, B. (2005).	x			
Lapum, J., Angus, J., Peter, E., & Watt-Watson, J. (2010).	x		x	
Maloney, L., & Weiss, M. (2008).		x		
McBride, M., & Andrews, G. (2013).			x	
McCarthy, D. M., Engel, K. G., Buckley, B. A., Forth, V. E., Schmidt, M. J., Adams, J. G., & Baker, D. W. (2012).	x			
Mitchell, S., Sadikova, E., & Jack, B. (2012).	x			

Samuels-Kalow, M., Stack, A., & Porter, S. (2012).	x			
Suhonen, R., & Leino-Kilpi, H. (2006).				x
Veronovici, N., Lasiuk, G., Rempel, G., & Norris, C. (2013).			x	x
Weiss, M., Yakusheva, O., & Bopay (2011)		x		

Appendix D: Permission for Use of the Iowa Model

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Appendix E: IOWA Model