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The Effects of Preoperative Education on Readmission Rates for Total Joint Arthroplasties

Michele Gobble
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The Effects of Preoperative Education on Readmission Rates for Total Joint

Arthroplasties

by

Michele Gobble

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Submitted by: Approved by:

_____   _____
Michele L. Gobble   Dr. Cindy Miller

_____   _____
Date   Date

Abstract

Background: Primary total hip arthroplasty (THA) and total knee arthroplasty (TKA) are two of the most successful procedures performed in orthopedics. The demand for these procedures is estimated to grow 174% for THAs and 673% for TKAs by 2030, which will have a valued bill of almost $50 billion for Medicare. The bundled payment plan is a way to reduce costs for these procedures, where an estimated 35% of the bill is related to post-discharge care (Schaeffer et al., 2015, p. 723).

Review of the Literature: In 2015, this healthcare reform began including readmission penalties for patients readmitted within 30 days post total knee arthroplasty (TKA) DRG 469 and total hip arthroplasty (THA) DRG 470. These postoperative TKA/THA readmissions include all-cause hospital-wide readmissions, linking payments to patient outcomes as developed by the Centers for Medicare and Medicaid Services (CMS) (Lavernia & Villa, 2015, p. 1127).

Purpose: The purpose of this MSN Thesis was to align the incentives of the hospital, the surgeons, and pre/post-acute care providers, with focused pre-operative education classes, screening appointments and one-on-one information sessions with positive patient outcomes and experiences. This research examined readmission rates and patient satisfaction scores before and after the implementation of the Orthopedic Nurse Navigator role.

Methods: This research was a quantitative descriptive study that was retrospective in nature and examined patients who underwent total hip replacement or total knee replacement and who were enrolled in CMS's BPCI (Medicare or Medicaid) reimbursement program.

Results: During the period of time before the Orthopedic Navigator began providing preoperative education and support, the BPCI patients (n=202) experienced a readmission rate of 10.40% (n=21). After the Orthopedic Navigator began providing preoperative education and postoperative support, the BPCI patients (n=206) experienced a readmission rate of 8.74% (n=18). This change in readmission rates for BPCI patients is a 1.66% reduction. Additionally, after the Orthopedic Navigator began, patient satisfaction scores for "Likelihood to Recommend" were measured for five months, from May 1, 2016 and ending September 30, 2016. These scores improved by 8.16 percentage points.

Conclusion: While the readmission rate reduction was not statistically significant, the reduction created a positive outcome for patients and reimbursement, creating value for the patients, hospital and orthopedic navigator program. The increase in patient satisfaction scores also indicates value for the navigator program and improved patient "likelihood to recommend".

Keywords: Bundle Payments for Care Improvement (BPCI), Total Joint Arthroplasty (TJA), Total Hip Arthroplasty/Replacement (THA), Total Knee Arthroplasty/Replacement (TKA), Centers for Medicaid and Medicare (CMS), Patient Satisfaction Scores, Orthopedic Nurse Navigator

Table of Contents

List of Figures

List of Tables

CHAPTER I

Introduction

As the cost of healthcare rises, reimbursement strategies are being closely examined. The traditional fee-for-service method of payment created incentives for volume, with little incentive to reduce costs, improve quality, or reimburse for care coordination (Iorio et al., 2016, p. 343). The Affordable Care Act (ACA) of 2010 was implemented with the intent to improve the health care system, while also including cost-controlling elements such as financial penalties for hospital systems with high readmission rates for selected conditions (Lavernia & Villa, 2015, p. 1127).

In 2015, this healthcare reform began including readmission penalties for patients readmitted within 30 days post total knee arthroplasty (TKA) DRG 469 and total hip arthroplasty (THA) DRG 470. These postoperative TKA/THA readmissions include all-cause hospital-wide readmissions, linking payments to patient outcomes as developed by the Centers for Medicare and Medicaid Services (CMS) (Lavernia & Villa, 2015, p. 1127). As such, these cost-containment efforts have resulted in a new Bundled Payment for Care Improvement (BPCI) initiative where a bundled payment for an "episode of care" is the central strategy with the value-based purchasing model to challenge hospital systems to reduce readmission rates and improve the quality of care these systems provide at a lower cost to Medicare (Iorio et al., 2016, p. 343).

Significance

Currently, primary total hip and total knee arthroplasty are two of the most successful procedures performed in orthopedics. The demand for these procedures is estimated to grow 174% for THAs and 673% for TKAs by 2030, which will have a

valued bill of almost $50 billion for Medicare (Schaeffer et al., 2015, p. 723). The bundled payment plan is a way to reduce costs for these procedures, where an estimated 35% of the bill is related to post-discharge care. Longitudinal trends in Medicare beneficiaries undergoing THAs have shown to have an increase in readmission rates, as well as an increase in comorbidities (Schaeffer et al., 2015, p. 723). Likewise, similar studies for TKAs have shown an increase in readmission rates related to uncontrolled or unmanaged co-morbidities. Institutions have implemented a variety of strategies to improve reimbursements for the BPCI patients with an increased focus on patient outcomes by providing quality care and reducing readmissions with an increased focus on those issues that have been linked to readmissions post TKA and THA.

Purpose

The purpose of this MSN Thesis was to align the incentives of the hospital, the surgeons, and pre/post-acute care providers, with focused pre-operative education classes, screening appointments, and one-on-one information sessions with positive patient outcomes and experiences. The research suggests that institutions participating in Medicare's BPCI initiative should set goals around improving efficiency, coordination of care and value for patients to provide state-of-the-art care and return patients to normal daily function much more quickly than traditional volume driven, fee-for-service plans.

Theoretical or Conceptual Framework

Patients who elect to undergo a total knee or total hip replacement often do so with hopes of returning to a state of health that perhaps disease and years of wear and tear have stolen from them. Just as nursing's goal is to help individuals maintain health or regain health, the focus also includes those goals the patient has for their own health after

surgery. Using Imogene King's Theory of Goal Attainment, the nurse is able to assess

the patient and their environment, make a nursing diagnosis, evaluate the concepts of

perception of the surgery, and also communicate the patient's needs to interdisciplinary

health team (Smith & Parker, 2015, p. 137). King's Theory of Goal Attainment is
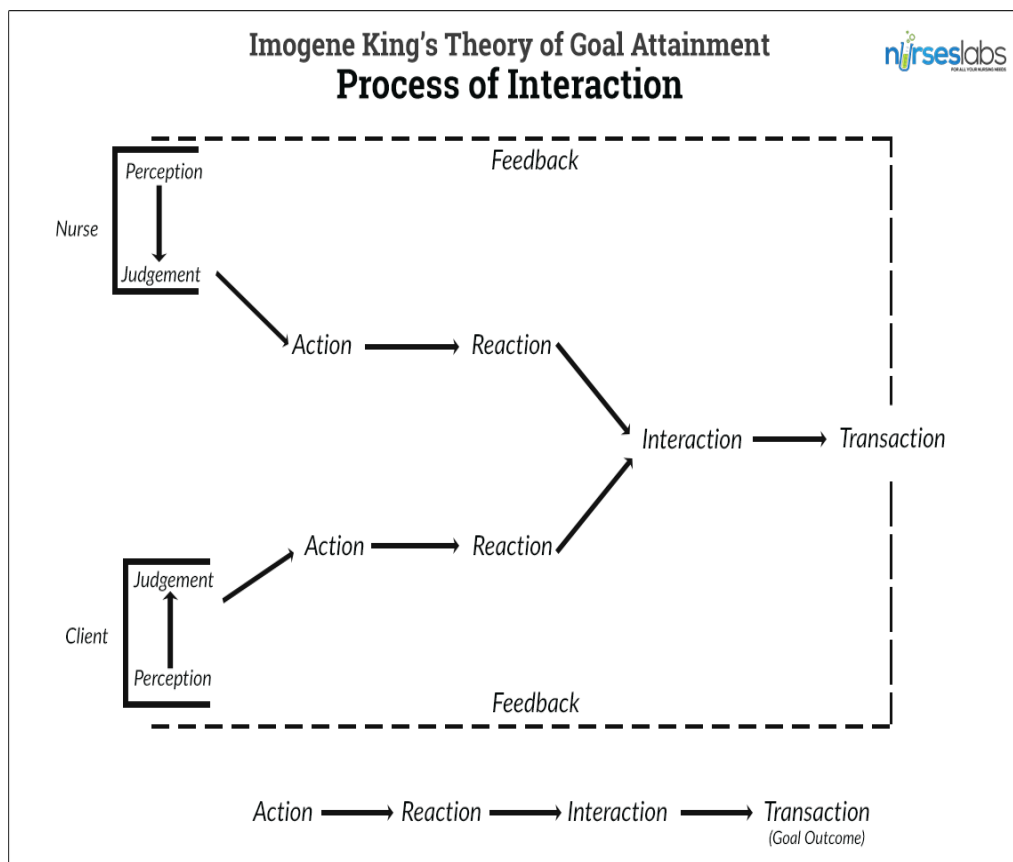
presented in Figure 1.

Figure 1. Imogene King's Theory of Goal Attainment

Through a collaborative process with a multi-dimensional approach, patients undergoing TKA/THA gained a greater understanding of the partnership that was developed with the healthcare team from the pre-operative phase of up to three weeks before surgery through 90 days post-operatively. The objective of enrolling BPCI total joint patients in education classes, scheduling for pre-operative visits to identify potential risk factors for readmission and developing a personalized plan of care developed in conjunction with the orthopedic navigator was to provide high-quality, cost-effective care that provided the patients and their families with the necessary resources to successfully undergo joint replacement surgery with minimal side effects. The relationship between King's concepts and the implementation of the orthopedic nurse navigator role is shown in Table 1.

Table 1

Relationship between King's Concepts and Orthopedic Nurse Navigator Role

Clinical Problem Elements	King's Concepts	Application to the Project
Population: Patients scheduled for elective TKA/THA	Clients and Nurses	Members of the Interdisciplinary Team
Intervention: Pre-operative Education classes, pre-op appointment and 1:1 with Ortho-Navigator	Transaction Process: Information Exchange	Goals Attainment Scale to be used as an assessment tool to provide patient data to plan and implement nursing care
Outcomes	Goals explored	Review clinical practice guidelines for post-operative care of the TKA/THA patient
Outcomes	Explore means to achieve goals	Goals implementation plan devised
Outcomes	Agree on means to achieve goals	Goals implementation plan accepted by health care team and patient

Thesis Question or Hypothesis

The questions addressed in this MSN Thesis were: What are the 30-day readmission rates for TJA patients at a specialty hospital in the Southeastern region of the United States five months pre- and post-implementation of the Orthopedic Nurse Navigator role? What are the patient satisfaction scores for TJA patients at a specialty hospital in the Southeastern region of the United States five months pre- and post-implementation of the Orthopedic Nurse Navigator role? The following objectives were addressed through this study:

1. Identifies hospital objectives for participating in Medicare's BPCI reimbursement program for TKA or THA surgeries.

2. Identifies nursing strategies to align hospital goals and BPCI patient outcomes.

3. Identifies influence of interventions on hospital goals and BPCI patient outcomes.

4. Utilizes King's Goals Attainment Scale to influence BPCI's patient goals and influence nursing care.

5. Reviews results of interventions with measurable data related to readmission data of BCPI patients who participated in interventions.

6. Compares results to retrospective data collected from 2015 for same patient population.

7. Compares patient satisfaction data for the operative in-patient period to 2015 data for same patient population.

Definition of Terms

- BPCI: (Bundled Payments for Care Improvement Initiative) The Centers for Medicare and Medicaid's reimbursement for an identified patient's episode of care, for this purpose Total Knee Arthroplasty and Total Hip Arthroplasty patients.

- Centers for Medicare and Medicaid: (CMS) A federally sponsored health insurance program for persons older than 65 and certain disabled persons; and a government program administered by the states that provides medical services to the medically needy (Pozgar, 2014, p. 5-6).

- Episode of care: (Also referred to as a "full cycle of care") This is defined as the period of time the patient is identified for TKA/THA 30 days before surgery to 90 days post-surgery (DiGioia, Greenhouse, Giarrusso, & Kress, 2016, p. 1).

- Orthopedic Navigator: Registered Nurse that supports patients undergoing orthopedic procedures, provides information, education and resources for this patient population and also interacts with other interdisciplinary team members to make referrals, as well as follow up with patients after procedures related to orthopedic surgery.

- Pre-operative education: Those elements of teaching that occur before a surgery; this may include classes, handouts, and verbal sharing of information.

- Total Knee Arthroplasty (TKA): The replacement of the knee and immediate components with manufactured joints and attachments.

- Total Hip Arthroplasty (THA): The replacement of the hip and immediate components with manufactured joints and attachments.

Summary

With the changing face of healthcare and the need to maximize the dollars allocated for specific disease processes and health issues, CMS has offered a bundled payment for care improvement initiative for certain common health care issues that are higher cost. One of those areas that are recognized and participate in bundled payments are total knee replacement and total hip replacement surgeries, also referred to as total joint arthroplasties or TJA, when referring to both hip and knee replacement patients. Health care systems are analyzing ways to improve the quality of care for these patients and identify co-morbidities that may compromise the postoperative recovery period covered in the episode of care for these bundled payment patients. The purpose of this study was to examine the effects of preoperative education provided by the orthopedic nurse navigator on 30-day readmission rates and patient satisfaction on TJA patients.

CHAPTER II

Literature Review

The purpose of this MSN Thesis was to determine the effects of preoperative education provided by the orthopedic nurse navigator on 30-day readmission rates and patient satisfaction for TJA patients at a specialty hospital in the Southeastern region of the United States.

Review of Literature

Literature research was conducted to identify the BPCI plans and the impact this payment structure is having on healthcare systems. Additionally, research was reviewed for opportunities to reduce the financial impact of the BPCI patients, while also investigating measures healthcare systems are utilizing to identify those patients with the greatest risk for readmissions within 30 days of surgery. For the literature review, the following databases were accessed: CINAHL, Science Direct, SciVerse, Pub Med, Elsevier, Ebscohost, Springer, Wiley Online Library, as well as Google Scholar. Key words used for the search included bundled payment, readmission rates, 30-day readmission rates, navigator, healthcare navigator, preoperative education, total joint arthroplasties, total hip replacement, total knee replacement, and patient satisfaction scores.

Bundled Payments for Care Improvement Initiative

According to The Centers for Medicare and Medicaid (CMS), the demand for total hip and knee arthroplasties is projected to increase to a magnitude that will impose significant economic burden on the health care system in the United States. The following literature reviews show the various initiatives healthcare systems are

implementing to reduce costs as we move away from fee-for-service payment structures and begin alternate payment models (APMs) like the bundled payment plans.

In a New Jersey based community hospital study on the Bundled Payment for Care Improvement Initiatives (BPCI), a multidisciplinary team developed a plan that would diminish the overall cost of the Total Joint Arthroplasty (TJA) by decreasing complications and improving postoperative patient functioning. Additionally, this team wanted to improve quality of care and patient satisfaction while increasing surgeon and practice reimbursements for TJA through shared savings and increased patient referrals (Doran & Zabinski, 2015, p. 353). In this study, practice modifications were interdisciplinary in an effort to reduce costs: Several surgeons made modifications or altered their surgical approach and technique to improve patient recovery; the hospital began a preoperative patient education class, preoperative physical therapy, hired a hospital based TJA nurse navigator who worked to optimize medical comorbidities with standardization of protocols; perioperative measures focused on pain control and reductions in urinary, hemodynamic, and gastrointestinal complications; and lastly standardization of implant choices with options for demand matching were some of the ways this hospital worked to reduce costs for TJAs (p.354). The culmination of these efforts revealed a decrease in the cost of the TJA episode of care, primarily through decreased length of inpatient stay, increased discharges to home rather than a skilled nursing facility (SNF), reduction in implant cost and improvement in readmission rates.

Just as the New Jersey community hospital identified BPCI initiatives, other alternate payment models (APMs) incentivize physicians, hospitals, and payers to deliver quality care at lower costs. One study utilized Dillman's Tailored Design Method for a

two-stage, single mode (online), self-administered, descriptive survey sent to physicians who were members of the American Association of Hip and Knee Surgeons (AAHKS) (Kamath et al., 2015, p. 2046). The team looked at the level of familiarity surgeons had of the concepts of APMs and how they perceived the initiative. Although the majority of the respondents had a fee-for-service model in place, many were in favor of the bundled payment system, as it would improve quality while reducing costs, (p. 2046). This study also supported dialogue between orthopedic surgeons and administrators on initiatives and information exchange to address concerns around reimbursement before the institution enters into a new payment model. One area the study identified is that it was typically the hospital administrator who led discussions regarding APM implementation and encouraged the orthopedic surgeons to play a more prominent role in this form of healthcare delivery. Reducing discharges to Skilled Nursing Facilities (SNFs) by improving inpatient rehabilitation is another measure the study identified to reduce costs and provide education to the physicians around the importance of goal alignment (p. 2048). The limitations from this study include a low response rate of 25.2%, with larger orthopedic groups participating in APMs (p<0.001). It was acknowledged that high-volume adult reconstruction specialist in large organizations have greater bargaining power with payers. The strength in this study was the evaluation of the demographic data compiled from the survey. These differences provided insight into the differences in practice based on physician age, practice location, and practice volume.

In another study, site-specific examination of standardized care pathways was evaluated as a mechanism by which "gains in efficiency and quality were realized" (Froemke et al., 2015, p. 1676). This study details how standardized care pathways and

gainshare arrangements coordinate services and eliminate inefficiencies. Again, favorable outcomes were identified with reductions in length of inpatient stay, discharge disposition—with fewer discharged to SNFs, total allowed claims, OR time, implant costs, and lower readmission rates. These outcomes were compared between a pre-pilot cohort (351 patients) and pilot cohort (317 patients), with inclusionary criteria for patients to include (1) Receiving elective THA or TKA with a DRG of either 469 or 470; (2) Covered by the single contracted payer included in the pilot and with one of the 12 contracted physicians at this site; (3) Surgery was not bilateral or a revision surgery (p.1678). Additionally, a patient satisfaction measure (the likelihood to recommend facility to friends or family) was collected from a random sample of all patients with elective TJA and compared to national averages. The study used the t-test for continuous variables and the chi-square test for the categorical variables. The results of this study confirmed the expectation of the value in standardized care pathways, with reductions in length of stay (LOS) hours from 70.8 to 58.2 (p<0.001), discharged to home self-care up to 63.7% from 54.1% (p=0.01), and reductions in discharges to SNFs from 20.5% to 18.3% (p=0.01). This study illustrated the importance of a multi-disciplinary approach and alignment of goals between hospital administration and surgeons. The limitation of this study is the comparison of historical cohorts to the pilot cohort. The result of this study and the implementation of the changes resulted in an average of $21,790 difference in total allowed claims between patients with and without readmission (p.1681).

Similar to Froemke's study, Iorio et al. (2016) study also used standardized clinical pathways for each episode of care to reduce costs after TJA. The goals of standardization of the clinical pathway include reducing nonessential OR and hospital

services, reducing readmissions, reducing discharges to inpatient rehabilitation, LOS

reductions, as well as reducing implant, supply and drug costs. This on-going three year

institutional study has implemented changes that have already shown cost-savings in the

patient component over baseline (Iorio et al., 2016, p. 343).

One area that requires understanding before the bundled payment program can be

acknowledged is the identification of the current cost of TJA for hip and knee

replacement. DiGioia et al. (2016) identified the phases of care for each episode of care

(30 days before surgery to 90 days after surgery) for a patient undergoing TJA. Those

phases included pre-hospital, hospital, and post-hospital. In this study, identifying patient

flow through each segment of care was important to better drill down costs associated

with each phase. Using calculations for non-physician personnel time and administrative

time, research and education time for physicians, salary costs per minute were calculated

to identify the true costs for THR (total hip replacement) and TKR (total knee

replacement) by the segment of care. Additionally, the true overall cost of THR and

TKR over the full bundle of care presented a parametric analysis using incremental

implant device costs; primary overall costs to include consumable and personnel;

segmentation costs for care delivered through the phases of care; and space and

equipment costs. The study was able to analyze standardized care pathways with low

variability to identify true costs comparisons between surgeons and facilities. Limitations

of this study included the acknowledged challenges of scalability to replicate this model.

Patient Readmissions

Hospital readmissions are a measure of hospital quality of care and have become

an important factor in patient outcomes. One recent study identified variables associated

with early readmissions following total knee and total hip arthroplasty with a focus on hospital acquired conditions (HACs) (Raines, Ponce, Reed, Richman, & Hawn, 2015, p. 1299). This retrospective study using the national Veteran's Administration (VA) data on patients from 96 hospitals undergoing total and partial knee or hip arthroplasties from 2005 to 2009, identified those variable associated with readmissions. For this study, as pertinent to TJAs, the HACs included: air embolism, pressure ulcer stages III and IV, injuries related to falls and trauma (fracture, dislocation, intracranial injury, crushing injury, burn), catheter associated urinary tract infection, manifestation of poor glycemic control (diabetic ketoacidosis, nonketotic hyperosmolar coma, hypoglycemic coma, secondary diabetes with hyperosmolarity), surgical site infections (SSI), deep vein thrombosis and pulmonary embolism. The readmission rate from this study of 1,106 TKAs and 834 THAs was 15% (6.6% TKA; 8.4% THA) with SSIs most strongly associated with TJA early readmissions. The American Society of Anesthesiologists' (ASA) pre-screening tool classifies patients on a scale of 1-4 (1=least likely; 4=most likely) on their likelihood for readmission, based on co-morbidities. ASA classes 3 and 4, as well as diabetes were strongly associated with early readmissions in both populations. Other significant variables associated with readmissions were age, Chronic Obstructive Pulmonary Disease (COPD), higher body mass index (BMI), and steroid use. This study's strengths were validated sources for data and tracking and extraction of readmission incidence were performed without bias. Limitations of this study included the design of retrospective analysis, which added a level of difficulty identifying complications and cause of readmission; additionally, the study was comprised of primarily older male patients with multiple comorbidities.

Another similar study identifying causes for readmissions after surgery, determined that three of four readmissions were potentially preventable. The study acknowledged that the factors that fold into readmission risk adjustment models should exclude admissions related to comorbidities post operatively; however, hospitals have no control over this metric (Lucas & Pawlik, 2014, p. 192). Parsimoniously, the ASA screening tool and length of stay (LOS) essentially identified comorbidities as risk factors for readmissions, as well as socioeconomic status and the discharge environment with caregiver availability. The study recommended efforts to improve discharge planning and coordination of care would be critical in decreasing unnecessary admissions in the future.

As CMS now includes TJAs in the Hospital Readmission Reduction program, researchers at the Department of Orthopedics and Rehabilitative Medicine at The University of Wisconsin School of Medicine and Public Health completed a retrospective study of one hospital's tertiary care quality improvement database and identified 4,792 discharges from the department of orthopedics over a 24 month period of time (Bernatz, Tueting, Hetzel, & Anderson, 2016, p. 838). The all-cause 30-day readmission rate was 4% (95% confidence interval [CI], 3.8-4.8) with length of stay (odds ratio [OR], 1.10 per day; $p<0.001$), ASA score (OR, 1.89 per point; $p<0.001$) and care under trauma (OR, 2.55; $p<0.001$) or "other" (OR, 1.65; $p=0.009$) as compared with joint subspecialty associated with increased risk of readmission. The most common surgical cause for readmission was SSIs (38%) and the most medical readmissions were from gastrointestinal bleed, pulmonary embolus, and unrelated trauma (each 9% of medical readmissions). The conclusion of this research acknowledged that CMS should develop a

more clinically relevant definition of 30-day readmissions to more accurately evaluate the rate of admissions.

Similarly, the Department of Orthopaedics and Rehabilitation at the University of Iowa Carver College of Medicine identified 11,814 TKA and 8,105 THA patients from the 2011 American College of Surgeons National Surgical Quality Improvement Program (ACS NSQIP). Overall readmission rates within 30-days of surgery were 4.6% for TKA and 4.2% for THA patients with complications associated with wound infections, sepsis, thromboembolic, cardiac and respiratory related causes (Pugely, Callaghan, Martin, Cram, & Gao, 2013, p. 1500). The limitations of this study included the NSQIP database prevented any reporting of diagnosis at readmission; the data was limited to 2011; variables of historic importance were excluded for low completion rates; and lastly demographic data such as socio-economic status and insurance status were unknown. The research identified those similar reasons for readmissions for TKA and THA, while also acknowledged they were not identical. Understanding the incidence, cause and risk factors for readmission will be essential for patient risk stratification (p. 1503).

In a study from Tufts Medical Center, the retrospective case-control study of patients who underwent primary THA and TKA from 2007 to 2012 included those readmissions that occurred within 30 days of hospital discharge. These researchers identified demographic variable such as age, gender, insurance, and marital status; as well as comorbidity data of hypertension, diabetes, coronary artery disease (CAD), chronic obstructive pulmonary disease (COPD), obstructive sleep apnea (OSA)/asthma, history of alcohol or drug abuse, and depression. Additionally, body mass index (BMI) was also recorded on this population. The results of this study had a trend toward

increased readmission risks in patients with BMI's >35, but did not reach statistical

significance (p=0.108). The female gender and high ASA class of III or IV remained

significantly associated with readmission in both univariate analysis and in the logistic

regression model. When the readmission diagnosis was pulled for these patients, the

most common reason for readmission was surgical complications (including dislocation,

periprosthetic fracture, or surgical site infection). Narcotic induced and post-operative

ileuses were identified as a predictable post-operative complication that presents within

the first week of discharge. Interestingly, patients with inadequate pain control or with

medical complications were most frequently readmitted within two weeks of discharge,

while those with surgical issues were most often readmitted later (Tayne, Merrill, Smith,

& Mackey, 2014, p. 1940). The conclusion of this study found that female gender, ASA

class, and duration of procedure predict readmission and suggest that improved education

and earlier outpatient follow-up for high-risk of readmission patients might further reduce

readmission rates (p. 1941).

A study to determine the influence of minority and socioeconomic status on

readmission rates was conducted by researchers from the Department of Orthopaedic

Surgery at the University of Missouri, School of Medicine. The study indicated that

patients of minority or low socioeconomic status have a higher risk for hospital

readmission following elective THA and TKA, lower postoperative functional outcome

scores and a disproportionate surgical revision rate (Keeney et al., 2015, p. 2082). The

study attributed the higher readmission rate to many different factors to include:

"decreased access to ambulatory care, decreased social support at home, more medical

comorbidities, and other behaviors that can contribute to poor physical health" (Keeney

et al., 2015, p. 2082). The study was performed to examine whether the introduction of

service wide protocols intended to decrease surgical complications were equally effective

in reducing 30-day readmissions after THA and TKA among minority and

socioeconomically disadvantaged patients. It was determined that minority THA patients

had higher 30-day readmission rates than non-minority patients both before (8.9% vs

3.0%, p=<0.0001) and after the introduction of risk reduction initiatives (6.1% vs 3.0%,

p<0.01). It was also noted that increased 30-day readmission rates were also noted

among socioeconomically disadvantaged THA patients compared with conventionally

insured THA patients both before (5.3% vs 2.4%, p=0.02), and after the protocols were

initiated (6.5% vs 2.3%, p<0.001). It was noted that the risk reduction protocols were

only associated with a significant decline in 30-day readmissions among minority THA

patients who were not socioeconomically disadvantaged (10.4% vs 3.3%, P<0.01).

Additionally, a significant decline in 30-day readmissions was only noted among non-

minority TKA patients (4.9% vs 2.8%, p<0.01). The multivariate analysis identified

patient characteristics in these categories with the greatest risk for readmission to include:

patients with Medicaid insurance, categorical BMI <20kg/m2, Medicare insurance,

African American race and low socioeconomic status (Keeney et al., 2015, p. 2083). The

limitations of this study included the retrospective observational study and the

introduction of initiatives to reduce surgical complications that were engaged in serial

fashion without intent for investigation. Additional limitations of this study include

readmission rates may have been under reported and also characteristics of minority

socioeconomic status may differ from the studied region to others.

In a study conducted on 1,874 TJA patients on avoiding readmissions, a team evaluated the use of their TJA Clinical Pathway (CP), which consisted of preoperative, intraoperative, acute postoperative, and post-discharge phases of care. A navigator assisted the patient through all phases of care, beginning with the preoperative admission team. This phase of care included a required "Joint Academy Education Program (JA)" that all patients undergoing elective TJA would attend. During this class, patients are provided instructions on chlorhexadine skin preparation and dressing care. The education team arranges for durable medical equipment (DME) and discusses inpatient expectations, while assessing the patient and family for home setting and discharge needs (Edwards, Levine, Cullinan, Newbern, & Barnes, 2015, p. 528). The intraoperative team consisted of the anesthesia team, Operating Room (OR) team, and the Post-Anesthesia Care Unit (PACU), who worked to deliver multi-modal pain management. The acute postoperative team (Advanced Practice Nurse (APN), Registered Nurse (RN), Social Worker (SW), Physical Therapist (PT), JA Education Coordinator and Navigator) performed daily patient rounds in the morning, assessing efficacy of the multi-modal pain regimen and thrombosis prevention. Early mobility was encouraged on the day of surgery and then twice the first day after surgery with physical therapists. The navigator maintains routine communication with the patient, surgeon, Physician Assistant (PA), and APN throughout the 120-day postoperative episode with scheduled phone calls to address concerns or questions (Edwards et al., 2015, p. 528). The results of these interventions from the team reduced readmissions from a baseline of 16% to 9.2% during this period of collaborative and multi-disciplinary intervention. One of the limitations of this study is the nature of the retrospective study, as is the macro-nature of the data in the

comparison group with difficulties extrapolating specific data due to CMS de-identifier methodology. Additionally, another identified constraint was the inability to document how many patients' surgeons excluded from TJA in either the comparison group or the study group. The study concluded with an admitted model shown to deliver a decrease in readmissions while still maintaining a short LOS. The researchers attributed the decrease in readmissions to the introduction of the navigator's ability to contact the patient post operatively, which they coined as "high touch" contact via telephone, email and visits (Edwards et al., 2015, p. 529).

One of the reasons patients are readmitted to the hospital post operatively is due to poorly controlled pain. One study identified that the femoral nerve blocks (FNB) provide adequate immediate postoperative analgesia after TKA. There were several post-operative FNBs evaluated for pain control to include: FNB via injection; FNB via pain pump; and no FNB were studied. It was determined that both FNB groups were associated with a lower risk of readmission (30,90,365 days, p<0.001) (Lovald et al., 2015, p. 2076). This study found that the injection FNB group had a higher risk for early postoperative falls relative to the continuous FNB group, while the continuous FNB group had preserved quadriceps function, which facilitated early mobility and rehabilitative efforts that allowed for an early discharge, with a reduced LOS. These researchers did identify knee stiffness, which may have been related to prolonged weakness, as well as the increased cost of the block placement as having potential drawbacks to the use of FNBs. The limitations of this study included the inability to fully know the extent of correctly coding co-morbidities and accuracy of the diagnosis and illness. Nonetheless, this study provided key information to the discussion of

postoperative pain control after TKA and concluded a lower adjusted readmission risk in a subset of patients receiving a FNB (Lovald et al., 2015, p. 2081).

In another study evaluating readmission rates status post TJA, nutritional status was determined to play an important role preoperatively to predict the postoperative course of recovery. A number of studies have identified preoperative malnutrition as a risk factor for surgical site infections (Bohl, Shen, Kayupov, & Della Valle, 2016, p. 15). This retrospective analysis of prospectively collected data for patients who underwent THA and TKA was collected from a surgical registry database from the American College of Surgeons National Surgical Quality Improvement Program (ACS-NSQIP). The researchers discovered the prevalence of hypoalbuminemia was 4.0% (95% confidence interval [CI}, 3.8%-4.1%). Patients with hypoalbuminemia had a higher risk for occurrence of any complications, when compared to patients with normal serum albumin concentrations. Additionally, these patients had a mean postoperative length of stay (3.52 vs 3.10, p<0.001) and an increased rate of unplanned readmission rate (6.3% vs 3.5%, p<0.001). Delayed wound healing and SSI after TJA have been linked through previous studies and now this study is able to link other postoperative complications with readmissions such as pneumonia. This study identified additional work that is needed to "clarify the extent to which hypoalbuminemia is a direct cause versus a correlate of poor surgical outcomes and whether correction of hypoalbuminemia or correction of the additional associated deficiencies will reduce the rates of postoperative adverse events" (Bohl et al., 2016, p. 19). The strengths of this study included the use of the ACS-NSQIP, which is highly accepted in the orthopedic and general surgical literature worlds as a valid and reliable data source for risk-adjusted clinical investigations. Conversely,

this is also where the weakness for this study was attributed as the ACS-NSQIP does not collect data on orthopedic-specific outcomes such as return to function, change in pain, periprosthetic fracture, or patient satisfaction and then also only to the 30th postoperative day. To conclude, this study found that hypoalbuminemia prior to TJA is independently associated with specific complications, increased LOS and readmission (Bohl et al., 2016, p. 20).

Patient Education

 The effects of preoperative patient education have shown value in reducing complications and managing disease. The following reviews of literature support this statement and also acknowledge the importance of repeat education and follow up education assessments postoperatively.

In a small study out of Denmark, researchers hypothesized that preoperative education for TKA would reduce the risk of knee stiffness requiring manipulation under anesthesia (MUA). Two studies were completed with one from 36 patients who underwent MUA after TKA and also 36 patients randomly selected from 629 TKA patients who did not receive MUA and were operated on in the same time frame. This study demonstrated a marked positive effect of attending a preoperative information setting, which was considered part of the active continuity of patient care, which allowed optimization of care planning for the patient. The limitations of this study included the risk of recall bias and the level of difficulty that the screening tool, the Oxford Knee Scale (OKS) is known for, as it oversimplifies the TKA patient's complex condition. The conclusion of this study supports the hypothesis: Preoperative patient education helped

to reduce the risk of knee stiffness following TKA, reducing the risk for readmission and MUA (Livbjerg, Froekjaer, Simonsen, & Rathleff, 2013, p. 1284).

In another study, preoperative education was evaluated to determine how effective this intervention was for patients undergoing same-day surgeries. Factors that this research attributed to insufficient pain management included poor communication between the patient and providers, unrealistic patient expectations and lack of proper patient education (O'Donnell, 2015, p. 222). O'Donnell (2015) states "it is imperative that patients be comfortable enough to participate in the recovery process and resume self-care activities quickly in the postoperative period. Preoperative education is a vehicle for preparing patients about their role in the pain management plan and postoperative recovery" (p.222). Patients in the intervention group (n=13) and comparison group (n=11) for this study completed the American Pain Society Patient Outcome Questionnaire-Revised (APS-POQ-R) during their first postoperative clinic visit two weeks after surgery. Out of the 24 patients, five patients in the intervention group and four patients in the comparison group received education and completed questionnaires in Spanish.

A limitation of this study is the small sample size and restricted time for providing patients education during the preoperative visit. The results suggested that patients who received the preoperative education intervention experienced severe pain in the first 24 hours postoperatively less often than those who did not receive the education intervention. Additionally, preoperative education may decrease the "frequency and severity of side effects, increase the patient's use of nonpharmacological methods to

control pain, and reduce the negative impact pain can have on important patient activities during the postoperative period" (O'Donnell, 2015, p. 226).

Nurse Navigators

Just as preoperative education has shown to be important in directing patient outcomes for postoperative side effect management, the role of the patient navigator is equally important in directing the patient through the complexities of the healthcare system.

Patient Navigators provide a means to improve timeliness to optimal patient-centered care by reducing barriers, improving patient outcomes, offering patients seamless and efficient transitions of care, and improving patient satisfaction and overall quality of health care (McMullen, 2013, p. 105). "The use of a conceptual framework can help guide the navigation process by improving the effectiveness of programs as they are developed" (McMullen, 2013, p. 106). The conceptual model this research used to align goals of patient navigation to nursing was the Synergy Model, which promotes patient needs and nursing competencies to gain improved patient outcomes. This research acknowledged that the roles and responsibilities of navigators are often determined by the facilities or area they serve and is operationalized differently depending on the care setting. Even so, it is noted in this research that the partnerships the navigator creates with patients and families is valuable and can promote improved care for the patient across the continuum of care by providing education and guidance, while reducing unnecessary readmissions.

The perception of patient navigators is that they alleviate barriers to health care services and provide resources for patients and families. In a multi-perspective analysis,

the role of the patient navigator is assessed for ability to reduce socioeconomic, racial and ethnic disparities in health care for the patients and families with a specific disease process, in this case an oncology nurse navigator. This study was part of a larger "Randomized Control Trial (RCT) of Patient Navigation –Activation" designed to evaluate effectiveness of patient navigators on cancer-related healthcare quality and outcomes (Yosha et al., 2011, p. 397). The results of this study analyzed 18 patient-navigator dyads (36 separate interviews) and revealed themes of struggles in patient navigation to include imbalanced investment, relational amelioration, and context of relationship building. Some of the limitations of this study included the interviews exploring relational phenomena and the researchers in the position of having multi-perspective data that was not intended to be analyzed. Additionally, interviews were conducted in person and by phone, which led to different interpretations and level of engagement that may have affected the data analysis. To conclude, this research determined navigation programs are growing in number and have the opportunity to improve training to better prepare the navigator to perform in the role as they are seen: as a valuable resource for patients and the healthcare team (Yosha et al., 2011, p. 401).

The role of the nurse navigator is described in this Australian-based article as a forward step in the evolution of nursing models of care and embodied within the philosophy of primary health care (PHC). In their article, McMurray and Cooper described the nurse navigator as the pivot person in the interdisciplinary team that can make a significant contribution to health reform by working towards patient-centered care (McMurray & Cooper, 2016, p. 1). This patient-centered care position offers seamless, timely care that is culturally appropriate and offers guidance and support, while

empowering patients to have the confidence to navigate through the services they need. The navigator is seen as a position that contributes to the healthcare team with improvements to processes, access, equity, efficiency, effectiveness and sustainability of healthcare services. The limitations of this article are the lack of research to support the perception of the authors. Nonetheless, the role of the nurse navigator has enormous potential for assisting today's healthcare system to maximize resources, while they support patients and families on their journey.

Another study that illustrates the benefit of the nurse navigator (NN) was conducted in the Royal Alexandria Hospital's radiology department. The use of the NN was shown to improve patient outcomes, increase positive patient feedback, decrease the workload for frontline staff and help to reduce patient delays for procedures. This work identified four main themes when discussing the NN role: coordination of care, improving patient outcomes, creating partnerships and system improvements. Through this work, the NN approaches the patient from a holistic approach, assessing the psychosocial needs of each patient. The patients report they have decreased anxiety with the individualized procedure-specific education they receive and that the NN is "watching out for (them)" (Brown, 2012, p. 99).

Summary

To conclude, total joint arthroplasty patients for total knee replacement and total hip replacement are being discharged from acute care settings more quickly today than historically. In an effort to ensure the patients undergoing TJA are informed about their procedure, preoperative education, and utilization of the nurse navigator through all phases of care for the surgical patient can prove beneficial. With BPCI in place,

readmission rates need to be closely scrutinized for opportunities to intervene and positively impact these surgical patients to improve their outcomes after TJA.

The literature review has identified some of the reasons for postoperative readmissions after TJA in the immediate 30-day period, 60-day period and 90-day period; the positive impact of preoperative education; and the value the nurse navigator can bring to the health care team by improving patient outcomes and maximizing reimbursements for healthcare systems. The review of the literature did not expressly illustrate the value of the "Orthopedic Nurse Navigator" on patients undergoing TJA. This thesis explored the roles of the orthopedic nurse navigator in improving TJA patient outcomes and reducing 30-day readmission rates with individualized patient education and early identification of patient needs with resource alignment.

CHAPTER III

Methodology

As individual elements of the healthcare system work to align their incentives with focused pre-operative education classes, screening appointments, and one-on-one information sessions to produce positive post-operative patient outcomes, healthcare systems are testing and implementing strategies to achieve outcome goals that enhance the patient's experience, while promoting efficiencies in processes and reducing readmissions. Successful goals would provide reductions in the cost of healthcare to the patient, CMS, and healthcare systems while improving the patient experience. In this study, surgical patients undergoing TJA and enrolled in Medicare and Medicaid's BPCI program were assessed and followed through the pre-operative, peri-operative and post-operative phases of care by the Orthopedic Nurse Navigator. The navigator provided one-on-one education, referred appropriately for co-morbidities and shared patient information with case managers for post-operative and rehabilitation care planning.

Study Design

This quantitative descriptive study examined patients undergoing total hip replacement or total knee replacement who were enrolled in CMS's BPCI (Medicare or Medicaid) reimbursement program. These patients received pre-operative education and guidance, as well as postoperative follow up by the orthopedic navigator. A retrospective analysis of readmission rates and patient satisfaction data from five months before the navigator's intervention (December 2015-April 2016) were compared to readmission rates and patient satisfaction data collected for the five months after the navigator's intervention (May-September 2016). The episode of care for this bundled payment

begins 30 days before surgery and extends for 90 days post-operatively. The hospital's objectives for participating in the BPCI program include higher quality of care delivery, consistency with the delivery of care, meeting cost-saving objectives that reduce readmissions and length of stays, as well as improved patient outcomes and satisfaction. The following questions guided this study:

- What are the 30-day readmission rates for TJA patients at a specialty hospital in the Southeastern region of the United States five months pre- and post-implementation of the Orthopedic Nurse Navigator role?

- What are the patient satisfaction scores for TJA patients at a specialty hospital in the Southeastern region of the United States five months pre- and post-implementation of the Orthopedic Nurse Navigator role?

Setting and Sample

The population for this study included patients from an inpatient specialty hospital in the southeastern region of the United States. The patients who were referred to the specialty hospital's pre-operative screening clinic for assessment from May 2016 through September 2016 and who were 18 years of age and older, undergoing Total Knee Arthroplasty (TKA) or Total Hip Arthroplasty (THA) were selected based upon meeting the criterion of being enrolled in the Center for Medicare and Medicaid's (CMS) Bundled Plan Care Initiative Plan (BPCI). Patients who were enrolled in the BPCI program, undergoing Total Joint Arthroplasty (TJA) but who did not attend the pre-operative screening assessment appointment were excluded from the study. There were 206 patients who were eligible for participation and were retrospectively compared to 202

patients who had TJA and enrolled in the BPCI program from December 2015 through April 2016.

The pre-operative screening clinic is located within the hospital, has eight private patient rooms, a laboratory and several offices. Initial Health Assessment (IHA) screenings are conducted on all patients from one of these offices prior to the patient's pre-operative screening appointment. Registered Nurses (RN) assess all of the patients, along with an Anesthesia Physicians' Assistant (PA), and a Medical Doctor (MD). Patients enrolled in BPCI have an additional appointment slot during this visit with the Orthopedic Navigator to discuss co-morbidity education, pre-operative, peri-operative, and post-operative education.

Design for Data Collection

This quantitative research study is retrospective and descriptive in nature. In this study, data collected from May 1, 2016 through September 30, 2016 on TJA readmission rates and patient satisfaction scores was compared to the five months prior to the navigator's intervention. The orthopedic navigator began in her role in March 2016 and began a consistent approach to assessment and education with TJA patients enrolled in BPCI on May 1, 2016. The pre-navigator intervention/standard care group is profiled as receiving the "usual treatment" or standard care at the time, which was documented as inconsistent and sporadic education. The post-navigator intervention group received referral for co-morbidities, case management consults based on potential rehabilitation needs, pre-operative preparation information, information about the surgical procedure and what to expect the day of surgery, and then also post-operative nursing care and pain management. Additionally, while in-patient these patients received a daily visit from the

orthopedic navigator post-operatively to assess needs and answer questions, as well as arrange for identified referrals if needed.

The hospital system's readmission data is released quarterly and was limited to the dates within this study: for the pre-navigator intervention/standard care group, December 1, 2015 through April 30, 2016; for the post-navigator intervention/comparison group, May 1, 2016 through September 30, 2016. The data for patient satisfaction is scored by Press Ganey for both groups and was also compared, from the "Likelihood to Recommend" category, with the selection of "date of discharge" to appropriately identify the patient responses.

Measurement Methods

Reliability is the extent to which an instrument will produce the same results each time it is used (Cottrell & McKenzie, 2011). The instruments used in this study were the institutions readmission reports and the Press Ganey Patient Satisfaction reports. The readmission reports were all assessed for the same information: readmissions to the same hospital as the patient's surgery facility for BPCI patients and readmissions greater than 24 hours to an inpatient unit within 30 days of discharge from the initial admission for TJA.

The Press Ganey Patient Satisfaction Surveys use a Likert Scale to determine a patient's "likelihood to recommend (LTR)" our facility to a friend or family member. This form of scaling determines the opinion or attitude of a subject and contains a number of declarative statements with a scale after the statement (Grove, Burns, & Gray, 2013). In this case, the agreement options were selected for ease of response. In response to "How likely are you to refer this hospital to your friends and family?"

patients were provided the following options to rate their care: Very Good, Good, Fair, Poor and Very Poor.

Data Collection

Using Medicaid and Medicare's utilization data for December 1, 2015-April 30, 2016, patients who were over 18 years of age, undergoing TJA and enrolled in the BPCI program were analyzed for 30-day readmission rates and compared to the same data pull for May 1, 2016-September 30, 2016 for 30-day readmission rates. This data was pulled by the hospital's financial department with the request to pull the 30-day readmission data for the specified population during the period of time being measured. The measurements for a 30-day readmission included a "yes" for hospitalizations to the facility where the surgery was performed, within 30 days of surgery, to include any inpatient hospitalization greater than 24 hours on an inpatient unit.

The responses for patient satisfaction were retrieved from the Press Ganey database to compare to the LTR scores for the two groups (pre- and post- implementation of the orthopedic nurse navigator role). The number of responses is associated to a percentage score of 1-100%, and provides the score for patient satisfaction as indicated by "likelihood to recommend" (LTR). This data is then compared to the national benchmark standards of other hospital systems with similar profiles. This data was pulled by the hospital system's "Human Experience" department with the request to pull "Likelihood to Recommend" scores for the dates indicated for the study.

Protection of Human Subjects

Approval from the University's Institutional Review Board (IRB) and the

facility's IRB (IRB# 16-606) were obtained prior to initiation of the study. The study

involved retrospective analysis of data before and after an intervention.

Data Analysis

The groups compared were the pre-navigator standard care group and the post-

navigator intervention group. The 30-day readmissions data collected for the five months

pre-navigator standard care group was compared to determine if there was a reduction in

the 30-day readmission rate in the five months post-navigator intervention group.

When comparing patient satisfaction scores, the same identified groups were

compared for the statistic of "Likelihood to Recommend". The survey responses that

were analyzed pre and post navigator intervention were anonymous and randomly

selected without any identification to link the survey results to the patients.

The 30-day readmission rates and the patient satisfaction scores were summarized

using descriptive statistics for the two groups (five months before the navigator's

intervention and then again five months after the navigator's intervention).

CHAPTER IV

Results

The purpose of this MSN Thesis was to determine the influence of pre-operative education and post-operative follow up by the Orthopedic Nurse Navigator on readmission rates and patient satisfaction scores in BPCI Total Joint Arthroplasty surgery patients. The data for this study was collected over a five-month period of time from May 1, 2016 through September 30, 2016 and compared to pre-existing data from the period of time of December 1, 2015 through April 30, 2016.

Sample Characteristics

The sample size for the post intervention group was 206 patients. The patients in this group were provided individual one on one pre-operative education with an Orthopedic Navigator and monitored post operatively for readmission propensity. These readmission rates were compared to non-intervention patients (n=202) from the five months prior to the Orthopedic Navigator's intervention from December 1, 2015 to April 30, 2016. There were no exclusions from these particular data sets; if the patients qualified for a bundled payment program (BPCI), they were included in the study.

Major Findings

The study examined readmission rates for five months pre- and post-implementation of the Orthopedic Nurse Navigator role. Readmission rates are shown in Figure 2.

Month	PRE			POST		
	# of cases for DRG 469 & 470	# of cases with secondary encounters within 30 days	Pre-readmission rate	# of cases for DRG 469 & 470	# of cases with secondary encounters within 30 days	Post-readmission rate
1	44	2	4.55%	41	3	7.32%
2	40	4	10.00%	40	5	12.50%
3	43	3	6.98%	34	2	5.88%
4	41	5	12.20%	61	6	9.84%
5	34	7	20.59%	30	2	6.67%
Totals	202	21	10.40%	206	18	8.74%

Figure 2. Pre and Post Readmission Rates

Figure 3 illustrates the BPCI readmission rates for the five months pre- and post-implementation of the Orthopedic Nurse Navigator role.
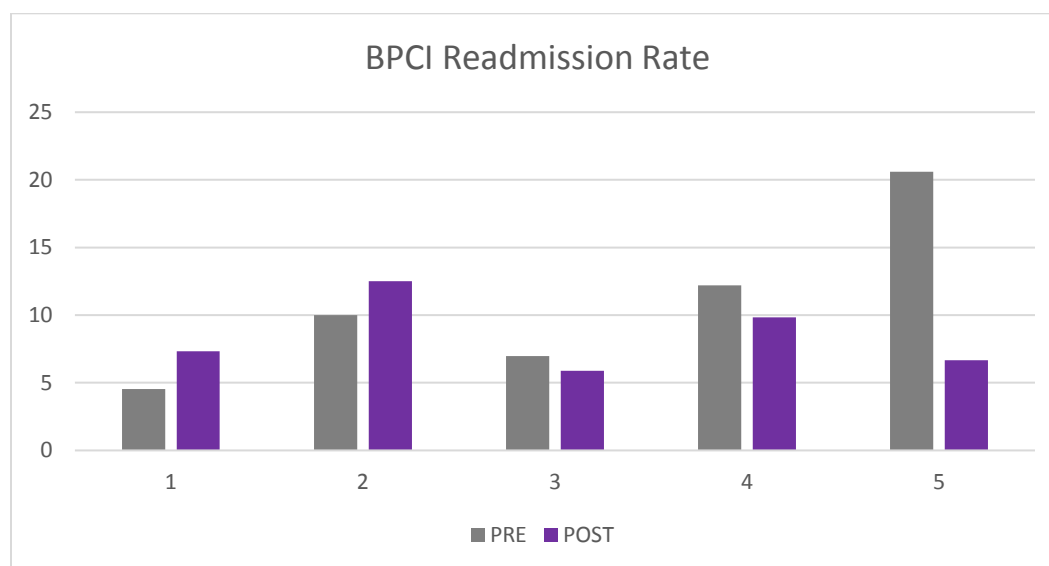

Figure 3. Readmission Rates

During the period of time before the Orthopedic Navigator began providing preoperative education and support, the BPCI patients (n=202) experienced a readmission rate of 10.40% (n=21). After the Orthopedic Navigator began providing preoperative education and postoperative support, the BPCI patients (n=206) experienced a readmission rate of 8.74% (n=18). This change in readmission rates for BPCI patients is a 1.66% reduction or 16% improvement.

The study also examined patient satisfaction scores for five months pre- and post-implementation of the Orthopedic Nurse Navigator role. Patient satisfaction scores are shown in Table 2.

Table 2

Pre and Post Patient Satisfaction Scores

Hospital IP Surgery LTR Results		
Row Labels	Sum of top box	Sum of n
Likelihood of recommending center		
12/1/15 12/31/15	88.6	35
1/1/16 1/31/16	85.2	27
2/1/16 2/29/16	76.2	21
3/1/16 3/31/16	67.9	28
4/1/16 4/30/16	50	6
Total	73.58	117

Hospital IP Surgery LTR Results		
Row Labels	Sum of top box	Sum of n
Likelihood of recommending center		
5/1/16 5/31/16	100	7
6/1/16 6/30/16	78.6	42
7/1/16 7/31/16	75	40
8/1/16 8/31/16	82.1	39
9/1/16 9/30/16	73	37
Total	81.74	165

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Figure 4 illustrates patient satisfaction scores for the five months pre- and post-implementation of the Orthopedic Nurse Navigator role.

Figure 4. Patient Satisfaction Scores

During the period of time before the Orthopedic Navigator began, patient satisfaction scores were measured as "Likelihood to Recommend" and had a favorable rate of 73.58% over the five month period beginning December 1, 2015 and ending April 30, 2016. These scores were measured on a Likert scale of Very Good, Good, Fair, and Poor. After the Orthopedic Navigator began, patient satisfaction scores for "Likelihood to Recommend" were measured for five months, from May 1, 2016 and ending September 30, 2016. These scores improved by 8.16 percentage points to 81.74% favorable for recommending the facility to others. This reflects an increase of 11.08% in patient satisfaction scores for the post navigator intervention period of time.

CHAPTER V

Discussion

The purpose of this MSN Thesis was to determine the influence of pre-operative education and post-operative follow up by the Orthopedic Nurse Navigator on 30-day readmission rates and patient satisfaction scores in BPCI Total Joint Arthroplasty surgery patients. The following are the questions that were identified for this thesis:

- What are the 30-day readmission rates for TJA patients at a specialty hospital in the Southeastern region of the United States five months pre- and post-implementation of the Orthopedic Nurse Navigator role?

- What are the patient satisfaction scores for TJA patients at a specialty hospital in the Southeastern region of the United States five months pre- and post-implementation of the Orthopedic Nurse Navigator role?

Implication of Findings

As a result of the Orthopedic Nurse Navigator alleviating barriers by providing pre-operative education, assisting the patient and family plan for the post-operative period of time, as well as the post-operative follow up and continued support, readmission rates for BPCI Total Joint Arthroplasty patients were reduced on average by 1.66% and patient satisfaction scores increased by 8.16%. The impact of the nurse navigator in reducing a patient's readmission is widespread to include improved quality of care in the hospital, improved quality of life, as well as improved patient and family satisfaction. McMurray and Cooper describe the nurse navigator as the pivot person in the interdisciplinary team that can make a significant contribution to the health reform by working toward patient-centered care (McMurray & Cooper, 2016, p.1).

Application to Theoretical/Conceptual Framework

Imogene King's "Theory of Goal Attainment" (see Figure 1) helped guide the

Orthopedic Nurse Navigator to properly assess the surgical patient pre-operatively,

understand the patient's home environment, recognize support systems, and make a

nursing diagnosis that supported the optimization of the patient before surgery. King

believed that the practice of nursing is differentiated from other healthcare professions by

what nurses do with and for individuals: the nurse and client communicate information

(pre-operative appointment), set goals mutually (health optimization) and then act to

attain those goals (surgical success).   Using King's Theory of Goal Attainment, the

navigator developed individualized plans of care that provided an opportunity for the

navigator to work with the patient to set a goal such as weight loss, develop an action

plan, provide assistance and support resources to assist and then follow up or monitor the

patient over a period of time before the surgery to evaluate for success or additional

needs (Smith & Parker, 2015). Additionally, reviewing the anesthesiology assessment

using the American Society of Anesthesiologist (ASA) screening tool to identify the

likelihood of readmission based on co-morbidities, provided guidance on goal setting to

reduce readmission propensity.

Limitations

As the nurse navigator was a newly created position, a limitation of the

interventions of assessments and preoperative education presented opportunities to

continually refine the educational content, improve the assessment capabilities of the

nurse, develop relationships with the interdisciplinary team members and grow the

resource support structure over the course of time. One other limitation included the

navigator capturing 100% of the BPCI patients in the comparison period of May 1, 2016

through September 30, 2016. With only one navigator, it was impossible to staff this

position each day during the five-month period of time. Those patients that were

scheduled for their pre-operative visit when the navigator had a vacation day did not

receive the same one on one education as those patients who met personally with the

navigator. Phone calls were placed to those patients and efforts were made to contact

them before surgery; however, not all patients returned phone calls from the navigator.

These patients were prioritized for post-operative visits, education and support.

Additionally, the limitations of the patient satisfaction data include the random

surveys sent via mail and the patient's ability or desire to return completed surveys. As

the surveys are anonymous, there is no way to positively correlate the improvement in the

patient satisfaction scores to the interventions offered by the nurse navigator. While this

research question is valid, the results may be considered coincidental. During the second

comparison period of time, there were new leaders and team members, as well as new

processes to improve patient flow through each episode of care.

Implications for Nursing

The importance of providing nursing support to surgical patients pre-operatively

will benefit the patients and their families by improving quality of care, education of

medications, non-pharmacologic pain interventions, resources for answering questions, as

well as encouragement. As the navigator's role is appraised, it will be important to track

progress and continue to expand the role of the navigator to meet the changing needs of

the patient. The value of nursing can be measured by directly comparing pre-navigator

readmissions to post-navigator readmissions, with the current cost of an all-cause

readmission for a total hip replacement averaging $12,300 and for a total knee replacement averaging $10,200 (Rizzo, 2013, p. 1). The direct value of the care the Orthopedic Nurse Navigator provided could be calculated when the cost savings of this intervention provided over the five-month period are assessed.

Recommendations

Moving forward, it will be important to continue to refine the assessment and screening process for Total Joint Arthroplasty patients. This enhanced screening will promote early specialty referrals to address those health issues that could cause complications post-operatively. Adding a Navigator to Orthopedic surgery programs can support the goals of improved outcomes, improved quality of care and reduced readmissions. As healthcare systems strive for high patient satisfaction scores and decreased length of stay, having a navigator on the team to guide a patient's pre-operative and post-operative journey is a special touch that has added value for all parties involved.

Conclusion

Total Joint Arthroplasty is the fastest growing elective surgical procedure in our nation. The bundle payment program rewards hospital programs for providing high quality, low cost care that provides a complication-free 90-day post-operative outcome. As our nation's population lives longer, patients are seeking ways to remain active and joint replacement is one way to support this aging population. Nurse navigators can provide a monetary value to health care systems, as well as improve quality through patient outcomes. Coincidental or not, patients seem to appreciate the extra attention the nurse navigator can provide to answer questions and support them on their journey. As the benefit of the Orthopedic Navigator gains support, creating additional positions to

assist in the management of orthopedic patients pre-operatively will help to eventually

capture 100% of all patients undergoing Total Joint Arthroplasty and then further expand

the role to also guide all patients who may elect to have an orthopedic surgery. Patients,

families, and communities will benefit from the attention and professional guidance the

orthopedic navigator provides to them on the journey to wellness and improved quality of

life.

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