Orthopaedic Nurse Navigators and Total Joint Arthroplasty Preoperative Optimization

Improving Patient Access to Musculoskeletal Care

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Preoperative optimization programs for total joint arthroplasty identify and address risk factors to reduce postoperative complications, thereby improving patients' ability to be safe surgical candidates. This article introduces preoperative optimization programs and describes the role of orthopaedic nurse navigators. This foundation will be used to produce an article series with recommendations for optimization of several modifiable biopsychosocial factors. We consulted orthopaedic nurse navigators across the United States and conducted a literature review regarding preoperative optimization to establish the importance of nurse navigation in preoperative optimization. The responsibilities of nurse navigators, cited resources, and structure of preoperative optimization programs varied among institutions. Optimization programs relying on nurse navigators frequently demonstrated improved outcomes. Our discussions and literature review demonstrated the integral role of nurse navigators in preoperative optimization. We will discuss specific risk factors and how nurse navigators can manage them throughout this article series.

Introduction

Recent projections for utilization of total joint replacement in the United States report an increasing demand for primary total joint arthroplasty (TJA), with projected demand for 850,000 total hip arthroplasty procedures and 3.42 million total knee arthroplasty procedures in 2040 (Kurtz et al., 2007; Singh et al., 2019). The greatly increased demand for TJA to treat osteoarthritis (OA) can be attributed in part to increasing prevalence of factors that contribute to the severity of patients' OA and its accompanying symptoms, including increasing average body mass index (BMI) and age among patient populations (George et al., 2017; U.S. Government Printing Office, 2020). Although TJA can vastly improve quality of life by reducing pain and improving patient-reported function and mobility (Neuprez et al., 2020), it is not without

risks. Patient comorbidities such as obesity, uncontrolled diabetes, and smoking are associated with increased postoperative complications such as infection, poor wound healing, cardiac or pulmonary adverse events, and short-term readmissions following TJA (Changulani et al., 2008; Duchman et al., 2015; Harris et al., 2013; MacMahon et al., 2021; Martin et al., 2017; O'Connor et al., 2022; Sabesan, Rankin, & Nelson, 2022; Springer et al., 2019; Wiznia et al., 2021; Yang et al., 2017; Zhang & Jordan, 2010). In addition, social determinants of health, such as socioeconomic status or mental health conditions, may act as barriers to care and confer higher risks of increased length of stay in the hospital after TJA, or contribute to postoperative complications such as infection (Ahn et al., 2020; Gold et al., 2016; Hinman & Bozic, 2008; Lakomkin et al., 2020; Maman et al., 2019; Sabesan, Rankin, & Jimenez, 2022). These

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biopsychosocial factors can influence patients' preparedness for TJA and ability to recover from surgery (Bennett et al., 2017; Browne et al., 2014; Gold et al., 2020).

The Centers for Medicare & Medicaid Services has transitioned to a bundled payment model for TJA, a reimbursement structure in which costs for hospital visits and services linked to TJA within 90 days following the procedure are reimbursed as one collective episode of care (Salmond & Echevarria, 2017). As return visits and longer hospital stays increase costs of care for one episode but are not additionally reimbursed and thus reduce profit margins, surgeons and hospitals are financially incentivized to reduce postoperative events leading to emergency department (ED) visits or hospital readmission and achieve shortened postoperative hospital stays. Healthcare institutions may attempt to achieve this by operating on only the healthiest of patients who lack risk factors for complications, which results in the exclusion of patients who have comorbidities and health issues that confer risk of complications. The bundled payment model for TJA, or Comprehensive Care for Joint Replacement Model, is thus a major impetus for the expansion of preoperative optimization programs (Dundon et al., 2016; Karas et al., 2018; Krueger et al., 2020).

Preoperative optimization programs reduce the risk of postoperative complications by taking advantage of the fact that many medical comorbidities and biopsychosocial factors associated with postoperative complications are modifiable conditions that can be addressed preoperatively (Ahn et al., 2019; Dlott et al., 2020; Dlott & Wiznia, 2022; Parsons et al., 2013; Rozell et al., 2016; Ryan et al., 2019; Sau-Man Conny & Wan-Yim, 2016; Weiner et al., 2020). While patient optimization is beneficial to both providers and patients, the implementation of optimization processes has at times led to the exclusion of patients of color, women, patients with Medicaid, and patients with lower incomes from receiving care (Dlott & Wiznia, 2022; Wang et al., 2018; Wu et al., 2021). This exclusion is a risk of implementing preoperative optimization that must be avoided, as several studies have demonstrated that TJA is already underutilized by patients of color and women despite the increased burden of OA among these populations (Cavanaugh et al., 2019; Dlott & Wiznia, 2022; MacFarlane et al., 2018; Salazar et al., 2019; Singh, 2011; Singh et al., 2014; Wu et al., 2021) and that patients of color are less likely to receive high-quality care at high-volume hospitals (Arroyo et al., 2018; Cai et al., 2012). Practices that utilize strict cutoffs such as a BMI below 40 kg/m², hemoglobin A$_{1c}$ (HbA$_{1c}$) below 7.5%, or albumin above 3.5 g/dl are likely to restrict patients from receiving care and worsen disparities (Dlott et al., 2023; Dlott & Wiznia, 2022). Systems must be in place to help patients achieve these preoperative goals so that optimization programs improve care rather than impose exclusionary criteria. As these programs have only recently become part of TJA preoperative care, there are no standardized practices for the proactive management of comorbidities or social determinants of health (Ryan et al., 2019).

The role of the orthopaedic nurse navigator is broad and varies across practice settings. The role includes providing patient care related to TJA by educating, counseling, and guiding patients to prepare them for TJA and the postoperative recovery period. Nurse navigators serve a critical role through direct patient care as well as by coordinating care among specialty providers and resources, contributing to shorter hospital stays and decreased ED visit rates postoperatively (Bernstein et al., 2018; Dlott et al., 2020; Fowler et al., 2019; Sawhney et al., 2021; Teng et al., 2021). Although preoperative optimization for TJA varies in design across institutions that have begun this practice, these programs are often implemented by orthopaedic nurse navigators. To date, there are no studies specifically analyzing the role and contributions of navigators with regard to specific risk factors addressed as part of orthopaedic preoperative optimization programs. In the absence of clear standards for proactive optimization and the unclear role responsibilities of the orthopaedic nurse navigator facilitating optimization, we sought to identify practices of nurse navigators in preoperative optimization and evidence from the literature to use in developing recommendations for nurse navigators.

This article describes the methodology for the study. Five subsequent articles will present data specific to the role nurse navigators have in preoperative optimization regarding 11 factors linked with poor outcomes (Best et al., 2015; Black et al., 2019; Gwam et al., 2020; Hinman & Bozic, 2008; Weiner et al., 2020) and their disproportionate effect on underserved populations (Gwam et al., 2020; Ihekweazu et al., 2018; Jin et al., 2019; Ponnusamy et al., 2017; Wang et al., 2018). These factors are related to individual behavior—smoking, alcohol use, and opioid use, comorbid conditions—diabetes, cardiovascular disease, obesity, malnutrition, mental health and medication management, and social determinant concerns—housing, payer status, and affordability. Optimization strategies regarding these factors as identified through our discussions with nurse navigators and a literature review will be incorporated into recommendations for implementing preoperative optimization protocols.

Methods

NURSE NAVIGATOR PERSPECTIVES

To gather perspectives on the nurse navigator role and examples of current preoperative optimization practices, nurse navigators were contacted through a thread in the Practice Discussions Forum on the National Association of Orthopaedic Nurses (NAON) website for participation in this qualitative study. Individual discussions, conducted over the phone or via video conference, were semi-structured to allow for diversity of responses. Audio recordings of each conversation were created so that the content of each discussion could be documented and revisited.

Each nurse navigator was asked four standard questions that were developed with the aim of eliciting basic

information about the nurse navigator role and preoperative optimization protocols while allowing for specific and detailed responses (see Table 1). These were followed by open-ended questions based on their responses. The standard questions allowed nurse navigators to provide an introduction of their role, describe how they interfaced with patients throughout the preoperative optimization process, and share resources that they relied on throughout the optimization process. Following standard questions with open-ended questions provided the opportunity for nurse navigators to share further details regarding practices such as the administration of screening questionnaires, laboratory tests, patient education, and connection to outside resources of a medical or social nature.

Responses were organized by thematic elements and subject matter, such that general information about the nurse navigator role and resources referenced by nurse navigators are reported in this article, while content related to specific risk factor optimization processes will be reported in future articles covering the corresponding topics. Due to the qualitative and semi-structured nature of the conversations, it was possible to calculate the rates at which some responses or practices were observed, while others were not amenable to this level of analysis due to infrequency or lack of universal commentary on the subject in question.

LITERATURE REVIEW

We queried the Scopus and Web of Science databases for our literature search. Scopus is a database that is inclusive of Medline and more, whereas Web of Science includes expanded indexes covering both health sciences and social sciences. We selected these databases with the aim of including articles that would be reflective of a diverse range of disciplines, methodologies, and perspectives. We included all articles available in English that were deemed relevant on the basis of discussion of preoperative optimization or orthopaedic nursing in general or with regard to the 11 domains we discussed with nurse navigators.

The initial search terms in Scopus were "surgery," "surgical," "operat-," "pre-operat-," "pre-surg-," "optimiz-," "hip," "knee," "replac-," "arthroplasty," and "nurs-." This search returned a total of 65 results, 24 of which were included after reading titles and abstracts to determine their relevance. The initial search terms in the Web of Science database core collection across the categories of Orthopaedics, Surgery, and General Internal Medicine were "hip," "knee," "arthroplasty," "operat-," "surg-," "pre-," and "optim-." This search

returned 511 results, 25 of which were included after reading titles and abstracts to determine their relevance. Citation chaining from the results of the primary searches was used to find 67 articles related to nurse navigation and specific risk factors. In total, we found 116 relevant articles through our literature search.

Results

PARTICIPATING NURSE NAVIGATOR PRACTICE SETTINGS

Twenty-five orthopaedic nurse navigators were successfully contacted from 18 states (see Figure 1) and employed by a total of 22 healthcare institutions ranging from ambulatory surgical centers to tertiary care centers. The majority of institutions were tertiary care centers (77%) in urban settings (55%) that were not certified by The Joint Commission (55%) (see Table 2).

NURSE NAVIGATORS AND OPTIMIZATION

Nurse navigators were involved in implementation of optimization protocols in some capacity at each institution (see Table 3). None of the nurse navigators identified strict requirements for when initial contact must be made, though 72% specified goals for timing of initial contacts with TJA patients that ranged from 1 to 8 weeks prior to surgery. Timing of initial contacts and the length of time allotted for optimization were both reportedly affected by scheduling and cancellation policies, receipt of clearance from patients' primary care providers (PCP), timing of preoperative testing and patient education sessions, and the structure of the nurse navigator's role in preoperative optimization. For example, some nurse navigators identified obtaining clearance from PCPs prior to patients being schedule for TJA as part of their role, while others were not involved until they met patients at the education sessions they led a week prior to TJA. However, the timing was not affected by type of surgery, and optimization protocols did not differ in approach between hip and knee arthroplasty patients. Twenty percent of nurse navigators mentioned recent or ongoing efforts to change surgical scheduling to allow more time to facilitate patient optimization. Sixty-four percent of nurse navigators reported that TJA patients at their institutions underwent preadmission testing (PAT) that included laboratory testing, electrocardiograms, health questionnaires, and other screenings. Although some nurse navigators contacted patients prior to PAT, others only became involved after PAT had been completed. A minority of nurse navigators
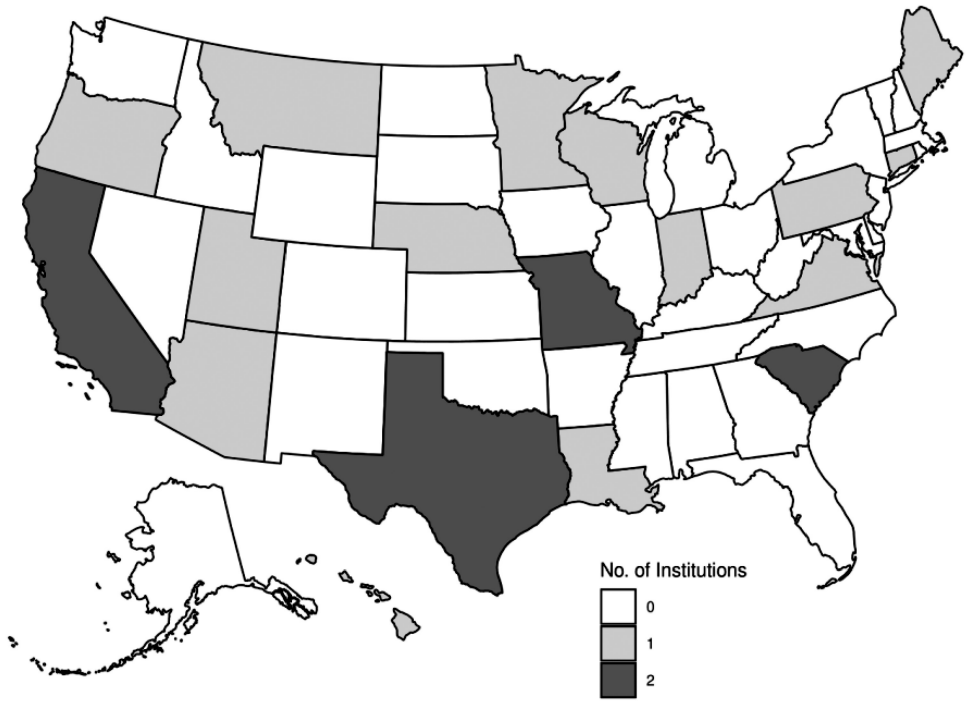
FIGURE 1. Geographic distribution of institutions employing nurse navigators.

(32%) met patients in the hospital during the perioperative period.

Nurse navigators worked with diverse care teams that included physical therapists, pharmacists, and anesthetists. Forty percent of the nurse navigators who were consulted worked with advanced practice providers. Eight percent of the nurse navigators who were consulted were nurse practitioners (NPs).

Each of the nurse navigators that was consulted described preoperative education sessions held at their institutions that were usually referred to as "joint classes." These classes were taught in person, over the phone, through digital video recordings, or through virtual presentations.

The resources available to nurse navigators to facilitate their roles in optimization varied. Twenty-eight percent of nurse navigators were able to use online or app-based patient education platforms to deliver information, messages, and reminders to patients. Some of these were personalized based on patients' individual optimization goals. Additionally, some nurse navigators kept a guide of local resources that they could refer patients to, such as durable medical equipment lending libraries, support groups for substance use disorders, or home health agencies. The majority of nurse navigators were not able to refer patients to social

TABLE 2. CHARACTERISTICS OF INSTITUTIONS EMPLOYING NURSE NAVIGATORS

Institution Features	Number of Institutions ($n = 22$)
Type	
Tertiary care center	16
Critical access center[a]	4
Ambulatory surgical center	2
Region	
Midwest	6
Northeast	3
South	5
West	8
Setting	
Urban	12
Suburban	5
Rural	5
The Joint Commission hip and knee replacement certification status	
Not certified	12
Basic	4
Advanced	6

[a]Refers to small, rural hospitals providing emergency services and limited outpatient services.

TABLE 3. NURSE NAVIGATOR ROLES IN PREOPERATIVE OPTIMIZATION DESIGN AND IMPLEMENTATION

Role	Nurse Navigator Involvement, n (%)
Met individually with patients in perioperative period	8 (32)
Worked with advanced practice providers	10 (40)
Were nurse practitioners	2 (8)
Held preoperative education sessions (joint classes)	25 (100)
Used online or app-based patient education platforms	7 (28)

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TABLE 4. OUTSIDE RESOURCES REFERENCED BY NURSE NAVIGATORS

Resources

National Association of Orthopaedic Nurses
- Webinars[1]
- Podcasts[2]
- Clinical practice guidelines[3]

American Academy of Orthopaedic Surgeons

- Provider education website citing recent literature[4]
- Patient education website with learning modules[5]
- PROM descriptions and questionnaires[6]
- Advocacy and education toolkits[7]
- Clinical practice guidelines[8]

American Academy of Hip and Knee Surgeons

- Provider education podcasts[9]
- Patient education website[10]
- Clinical practice guidelines and performance measures[11]

American Diabetes Association

- Lifestyle change programs for patients with program locator[12]
- Diabetes education program locator[13]
- Healthy living patient resources[14]
- Diabetic diet meal planning and grocery lists[15]
- Events and support groups[16]
- American Diabetes Association standards of care slide deck[17]

American Society of Anesthesiologists

- Geriatric patient perioperative care guidelines[18]
- Patient engagement training[19]
- Preanesthesia evaluation guidelines[20]

The Joint Commission

- Performance measures for TJA[21]
- Review process guide for advanced certification[22]
- Tobacco treatment resources[23]

The Journal of Arthroplasty

- Peer-reviewed, open access research[24]
- The Knee Society Score for measuring function[25]

American College of Surgeons

- *Journal of the American College of Surgeons*[26]
- Pain resources for patients and providers[27]
- Smoking cessation resources for patients[28]
- Printable handouts and resources on smoking cessation and medication management for patients[29]
- Articles and printable handouts for patients on preparing for surgery[30]

Journal of Bone and Joint Surgery

- Peer-reviewed, open access research[31]
- Podcast summaries of each journal issue[32]
- Special interest article collections[33]

Orthopaedic Nursing Journal

- Collection of literature on TJA[34]

Becker's Hospital Review

- Podcasts on orthopaedic surgery, nursing, care coordination, and risk factors[35]
- Webinars on orthopaedic surgery, nursing, care coordination, and risk factors[36]

Note. Resources are listed in order of how often they were mentioned by nurse navigators. PROM = patient-reported outcome measure; TJA = total joint arthroplasty.
[1]*Webinars*. (2022). National Association of Orthopaedic Nurses. https://www.orthonurse.org/Education/Webinars
[2]*Podcast Series*. (2022). National Association of Orthopaedic Nurses. https://www.orthonurse.org/Education/Podcast-Series
[3]*Clinical Practice Guidelines (CPG)*. (2022). National Association of Orthopaedic Nurses. https://www.orthonurse.org/Clinical-Resources/Clinical-Practice-Guidelines
[4]*AAOS Now*. (2022). American Academy of Orthopaedic Surgeons. https://www.aaos.org/aaosnow/
[5]*OrthoInfo—Patient Education*. (2021). American Academy of Orthopaedic Surgeons. https://orthoinfo.org
[6]*Patient Reported Outcome Measures: Lower Extremity*. (2022). American Academy of Orthopaedic Surgeons. https://www.aaos.org/quality/research-resources/patient-reported-outcome-measures/lower-extremity-performance-measures/

TABLE 4. OUTSIDE RESOURCES REFERENCED BY NURSE NAVIGATORS (*Continued*)

Resources
[7]*AAOS Toolkits*. (2022). American Academy of Orthopaedic Surgeons. https://www.aaos.org/quality/quality-programs/quality-toolkits/?embed_path=modexm%253DEmbed
[8]*Lower Extremity Programs—Clinical Practice Guidelines (CPGs)*. (2022). American Academy of Orthopaedic Surgeons. https://www.aaos.org/quality/quality-programs/lower-extremity-programs/
[9]*AAHKS Amplified*. American Association of Hip and Knee Surgeons. https://www.aahks.org/subscribe-to-podcast/
[10]*Home*. American Association of Hip and Knee Surgeons. https://hipknee.aahks.org
[11]*Practice Resources*. American Association of Hip and Knee Surgeons. https://www.aahks.org/practice-resources/
[12]*Lifestyle Change Programs*. (2022). American Diabetes Association. https://diabetes.org/tools-support/diabetes-prevention/lifestyle-change-programs
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[15]*Diabetes Food Hub*. (2022). American Diabetes Association. https://www.diabetesfoodhub.org
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[17]*Slide Deck*. (2022). American Diabetes Association. https://professional.diabetes.org/content-page/slide-deck
[18]Mohanty, S., Rosenthal, R. A., Russell, M. M., Neuman, M. D., Ko, C. Y., & Esnaola, N. F. Optimal Perioperative Management of the Geriatric Patient: Best Practices Guideline from ACS National Surgical Quality Improvement Program®/American Geriatrics Society [Electronic Article]. https://www.facs.org/media/y5efmgox/acs-nsqip-geriatric-2016-guidelines.pdf
[19]*Perioperative Surgical Home Patient Engagement Training for Perioperative Care Teams*. (2022). American Society of Anesthesiologists. https://www.asahq.org/shop-asa/e022m00w01
[20]Practice Advisory for Preanesthesia Evaluation: An Updated Report by the American Society of Anesthesiologists Task Force on Preanesthesia Evaluation. (2012). *Anesthesiology*, *116*(3), 522-538. https://doi.org/10.1097/ALN.0b013e31823c1067
[21]*Total Hip and Knee Replacement*. (2022). The Joint Commission. https://www.jointcommission.org/measurement/measures/total-hip-and-knee-replacement/
[22]*Disease Specific Care Certification: Organization Review Process Guide*. (2022). The Joint Commission. https://www.jointcommission.org/-/media/tjc/documents/accred-and-cert/survey-process-and-survey-activity-guide/2022/2022-disease-specific-care-organization-rpg-july-2022.pdf
[23]*Tobacco Measure Resource Links*. (May 2022). The Joint Commission. https://www.jointcommission.org/-/media/tjc/documents/measurement/measures/tobacco-treatment/dashboard-resource-links-tob-5_22.pdf
[24]*Home Page: The Journal of Arthroplasty*. (2022). Elsevier Inc. https://www.arthroplastyjournal.org
[25]*The Knee Society Score*. (2021). The Knee Society. https://www.kneesociety.org/the-knee-society-score
[26]*Journal of the American College of Surgeons*. (2022). American College of Surgeons. https://journals.lww.com/journalacs/pages/default.aspx
[27]*Safe Pain Control: Opioid Abuse and Surgery*. (2022). American College of Surgeons. https://www.facs.org/for-patients/safe-pain-control/
[28]*Quit Smoking Before Your Operation*. (2022). American College of Surgeons. https://www.facs.org/for-patients/preparing-for-your-surgery/quit-smoking/
[29]*Operation Brochures for Patients*. (2022). American College of Surgeons. https://www.facs.org/for-patients/preparing-for-your-surgery/operation-brochures-for-patients/
[30]*Strong for Surgery*. (2022). American College of Surgeons. https://www.facs.org/for-patients/strong-for-surgery/
[31]*JBJS Open Access*. (2022). *The Journal of Bone and Joint Surgery*, Inc. https://journals.lww.com/jbjsoa/pages/default.aspx
[32]*Podcast Episodes*. (2022). *The Journal of Bone and Joint Surgery*, Inc. https://journals.lww.com/jbjsjournal/pages/podcastepisodes.aspx?podcastid=4
[33]*JBJS Article Collections*. (2022). *Journal of Bone and Joint Surgery*. https://www.jbjs.org/collections.php
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[35]*Becker's Healthcare Podcasts*. (2022). Becker's Healthcare. https://www.beckerspodcasts.com
[36]*Webinars*. (2022). Becker's Healthcare. https://www.beckershospitalreview.com/upcoming-webinars.html

work or case management prior to admission because these resources were not available at their institutions. The specific resources that were utilized by nurse navigators for managing each risk factor will be discussed throughout the article series.

RESOURCES AND FUNDING FOR DEVELOPING OPTIMIZATION PRACTICES

The majority of nurse navigators we spoke to were full-time, salaried employees whose positions were funded through the budget allocated for their orthopaedics department. In other cases, the position originated as part of the institution's case management department, originally achieved funding as a pilot program with temporary budget or grant funding, or started as a part-time position.

Nurse navigators reported that they found several resources useful in designing, understanding, and implementing preoperative optimization protocols (see Table 4). The most frequently referenced resources were from the NAON) and included conferences, webinars, clinical practice guidelines, and forums. Additionally, *Orthopaedic Nursing Journal*, The Joint Commission arthroplasty certification guidelines, American Academy of Orthopaedic Surgeons, and American Academy of Hip and Knee Surgeons were frequently mentioned. Occasionally, nurse navigators mentioned other specialty associations or publications including resources from the American Society of Anesthesiology, American Pain Society, American College of Surgeons, and the *Journal of Bone and Joint Surgery*. Meetings with colleagues at individual institutions were also cited as sources of ideas and guidance for patient optimization.

LITERATURE REVIEW

Qualitative studies have shown that TJA patients appreciate greater clinical, educational, and social support

from their surgical care teams (Goldsmith et al., 2017). Patients have reported that difficulty understanding and managing pain, receiving conflicting information from different providers, and uncertain expectations for the recovery process contribute to their dissatisfaction with the TJA process. The development of nurse navigator positions has been recommended to provide patients with more education and support (Goldsmith et al., 2017). Recently, implementation of preoperative optimization programs driven by nurse navigators has been shown to provide all three types of support—clinical, educational, and social (Dlott et al., 2020). Patients benefit directly and indirectly from working with nurse navigators who are involved in presurgical education, present during the hospital stay, and available as the primary contact for concerns both pre- and postoperatively. This is demonstrated through patient responses to working with a nurse navigator, in which they indicate that having this resource helped them throughout the surgical process and potentially prevented ED visits (Teng et al., 2021). Direct benefits include services such as surgical wound assessment and delivery of clinical information pre- and postoperatively, whereas indirect benefits include the sense of security and reassurance patients gained from having direct access to a care provider (Teng et al., 2021). The navigator's availability to communicate through phone calls, e-mail or digital messaging, and in-person meetings creates further opportunities to support patients (Teng et al., 2021). Other aspects of the nurse navigator role include serving as the point of contact to coordinate care between providers, educating patients, and framing patient expectations (Fowler et al., 2019).

Recommendations for improved preoperative optimization often include the introduction or expansion of a nurse navigation model (Fowler et al., 2019; Goldsmith et al., 2017). Some models feature an NP in the navigator role, which affords greater independence for clinical decision-making in the optimization process (Bernstein et al., 2018). Studies have noted the difficulty of quantifying the time and effort nurse navigators spend optimizing patients while acknowledging the importance of their contributions (Krueger et al., 2020; McDonald et al., 2014). In addition, studies involving preoperative optimization may mention nurse navigators without describing how they implement interventions or sharing recommendations for what responsibilities they should hold in the optimization process (Bernstein et al., 2018; Bullock et al., 2017; Carmichael et al., 2022).

Discussion

Discussions with nurse navigators and a literature review revealed diverse ways in which nurse navigators implement preoperative optimization protocols and work within care teams. Nurse navigators often collaborated with care team members beyond orthopaedic surgeons, including anesthesiologists, pharmacists, and physical therapists. Some nurse navigators had greater autonomy as NPs, but this was a minority among the nurse navigators with whom we spoke. Nurse navigators universally utilized joint classes as educational vehicles to prepare patients for TJA. These classes have been demonstrated as a means of achieving cost savings via

reduced length of stay and improving functional outcomes in the immediate postoperative period, even when taught outside of the context of preoperative optimization programs (Jones et al., 2022). However, they worked with patients for different lengths of time before TJA and varied in their use of technology to interact with patients. Nurse navigators also referenced a wide array of resources for their own continuing education, including journals and podcasts. Few of these resources were specific to orthopaedic nurses and their role in preoperative optimization. In addition, the existing literature regarding preoperative optimization often discusses the design of preoperative optimization protocols by program directors and surgeons rather than the implementation role of orthopaedic nurses (Adie et al., 2019; Featherall et al., 2018). Although nurse navigators do not prescribe treatment and rehabilitation regimens, they provide great value to patients and are integral to protocol development and implementation. Our literature search revealed evidence of the unique benefits of patients receiving care from nurse navigators and provided limited examples of interventions implemented by nurse navigators when optimizing patients. The diversity of responses from nurse navigators we consulted, combined with a lack of detailed description of the nurse navigator role in the literature, reinforces the unstandardized nature of orthopaedic nurse navigation for TJA.

Nurse navigation has only recently been implemented in orthopaedic surgery and no standardized practice models are easily available. Still, it is clear that nurse navigators are uniquely positioned to provide clinical, educational, and social support for TJA patients that improves patient satisfaction and surgical outcomes (Dlott et al., 2020; Goldsmith et al., 2017; Teng et al., 2021).

Conclusion

We consulted orthopaedic nurse navigators across the United States and conducted a literature review to better understand the implementation of preoperative optimization practices and to provide practical suggestions that could be employed by nurse navigators within their institutions. We found that there was variability in the structure of nurse navigator roles and preoperative optimization programs as well as the resources used to guide these programs' development. However, nurse navigators were consistently regarded as being critical to patient optimization. In subsequent articles in this series, we will discuss optimization of smoking status, alcohol use, opioid use, diabetes, cardiovascular disease, obesity, malnutrition, mental health, housing, payer status and affordability, and medication management.

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