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PATIENT EDUCATION: PREPARING FOR AND RECOVERING FROM ORTHOPEDIC SURGERY

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1.2 Abstract

The process of preparing for and recovering from orthopedic surgery is commonly overwhelming to many patients due in part to the prevalence of medical terminology, the complex nature of the procedure, the healing process, and the numerous professionals providing patient care. Medical providers typically spend only a small amount of time with patients: screening them for surgery, explaining procedure details, and addressing various patient concerns. In order to increase the understanding and compliance of the patient with preoperative and postoperative routines, patient education is usually employed as one of the strategies. The main idea behind patient education is to equip patients with the knowledge, positive attitude, and skills needed to take an active part in the care and improve their quality of recovery (Causey-Upton et al., 2018).

Patient education comprises three main components: the first and most obvious one is providing information on treatment, prescriptions, side-effects, risks and needed life style adjustments due to the treatment; the second is to prepare the patient for the clinic pathways and routine, like checking-in procedure, therapists' schedule, visitors' policy, etc.; the third is the establishment of therapy partnership with patient, where the target is to maintain patient's involvement and activity in the therapy between the sessions. Often under-looked, yet extremely important are the first impressions and general clinical atmosphere during the first visits, which play a vital role as a trust-building factor, significantly affecting the initial outcomes, patients' attitude, and motivation. From the patient's perspective, even slighting the appearance of being under-prepared, lack of attention, empathy or clarity regarding instructions can manifest in an overall dissatisfaction with the service and professionals. The increased patient knowledge usually leads to a decrease in anxiety, enhanced rehabilitation performance and accelerated functional recovery after the surgery.

1.3 Keywords

Key Messages: It is known that many orthopedic procedures require patient education in order to prepare and recover from surgery. However, not much is known about what patients think on that topic. This study explored patient perspectives of orthopedic surgery preparation/recovery. Also, the need for better pre-operative information, clinical support, and emotional support was important for overall patient experience.

1.4 1. Introduction to Orthopedic Surgery

Orthopedic surgery focuses on the musculoskeletal system (the body's bones, muscles, cartilage, tendons, ligaments, joints, and other connective tissues). The goal of orthopedic surgery is to timely restore function to the affected area. Orthopedics deals with a range of conditions, including acute injuries (such as fractures and dislocations), chronic conditions (such as arthritis and osteoporosis), congenital conditions (such as clubfoot and scoliosis), and degenerative conditions (such as disc disease and degenerative joint disease). Many orthopedic procedures are often elective, meaning they are done as part of a scheduled procedure instead of out of urgent medical need. Common orthopedic procedures include joint replacement (such as hip and knee replacements), ankle arthroscopy, forearm fracture repair, hip fracture repair, knee arthroscopy, laminectomy, and spinal fusion.

Day-to-day activities can be greatly impacted by orthopedic surgery, so it is important for patients to plan for procedures and recovery. Simple planning can be done, like creating and reviewing checklists, to make sure nothing is forgotten. It is very important for patients to confirm plans with their doctor and follow their doctor's advice. Physical therapy is a common part of recovery from orthopedic surgical procedures. Patients may want to consider the advanced equipment utilized by physical therapists in outpatient therapy clinics, like a hydrotherapy pool and anti-gravity treadmill (Causey-Upton et al., 2018).

1.1. Definition and Scope of Orthopedic Surgery

Orthopedic surgery is frequently performed to alleviate severe arthritis, repair fractures and fixates damaged bones to reduce pain and improve musculoskeletal function (Causey-Upton et al., 2018). It is commonly related to the knee, hip, foot, ankle or spine. Other surgeries include lumpectomy of the breast, repair of a tendon or ligament, arthroscopy, carpal tunnel surgery of the hand, and fracture repair with internal fixation. Major joint surgical procedures typically require advance planning and recovery effort because of the expected time at home in a non-weight-bearing, cast-bound or immobile post-operative state.

Because of the potentially regressive nature of non-weight bearing on a single limb for a long period of time, patients may find it challenging to return to baseline functional status post-operatively. Patient preparation for such challenges can be beneficial. Preparation is defined as actions taken before any sudden event to increase the ability to mitigate or respond to the incident. Recovery, as used during the rest of this program, is the time spent in a medical facility for an acute inpatient hospital stay or a short-term rehabilitation facility stay following an orthopedic surgery. Prep time for upcoming surgery can allow the patient to become mentally and physically ready to navigate hospital stays, consult with health providers, and efficiently manage discharge plans. Major joint replacement surgery often has a predetermined surgery date; therefore, a patient's investigation process should start around the time surgeons plan post-operative medical orders. Concise tasks are covered to aid better counselor interaction at doctor's appointments

concerning hospital stays (surgery and after), discharge location, and post-discharge services/resource equipment.

1.2. Common Orthopedic Procedures

Orthopaedic surgery is fast becoming one of the most common types of frequently performed operations. Although there is certainly value in becoming familiar with the technical aspects of orthopaedic surgical operations, it is only part of the patient after orthopedic surgery experience. As such, patient instruction is paramount both before and after surgery. This perspective explores the patient experience with orthopaedic surgery and details practical information that can be given to the orthopaedic surgery patient. Also offered are case studies of how this information might best be conveyed to the patient.

Before discussing these details, however, the research and development process for writing this perspective is examined. Although a brief discussion is offered about some of the common orthopaedic procedures that patients might undergo, a much more detailed approach to patient education after orthopaedic surgery is taken. Consideration is given to the practical aspects of living after orthopaedic surgery as it pertains to the foot, hip, knee, neck, lumbar, and shoulder operations (Y. Barnes et al., 2018). Methodologies are suggested for getting out of bed, bathing, dressing, walking, and sitting. Ideas are also considered for boarding in a car, transferring, as well as traveling by air. Understanding that all knowledge cannot be attained from mere text columns, thoughts are put forth on the types of resources, in addition to the orthopaedic surgeon, that are available to assist orthopedic surgery patients. Issues are also discussed that relate to the simple discharge of patients from a care setting, as well as outlining the expected course of physical and emotional recuperation.

1.5 2. Benefits of Patient Education

Patient education plays a vital role in preparing patients for orthopedic surgery. With the rise of value-based health care, it is more important than ever to optimize patient education prior to and after surgery. A study conducted in 2018 at a private orthopedic clinic on the benefits of web-based education before an outpatient hip or knee arthroscopy showed that web-based preoperative education significantly increases patient satisfaction scores.

The study included 120 participants who underwent surgery. The control group received verbal and written education during their preoperative visit. Participants in the intervention group, the post-web group, received verbal and written education in a concise format during the preoperative visit. The post-web group was additionally provided with a website with direct access to their smartphone. Education resources were found on the website, which covered a wide range of orthopedic surgery need-to-know topics. This was followed by a quiz to test the participant's understanding of the website information and contact information throughout the postoperative phase. Furthermore, the participating patients in the intervention group could search clips showing the day-by-day journey of a patient undergoing a similar surgery to better understand what to expect after the surgery. After exactly two weeks, the post-web group was emailed the same quiz and a reminder was provided, followed by receipt of their postoperative satisfaction survey. At the end of each postoperative survey, questions were asked inquiring if the surgery was elective or urgent as well as other educational tools patients may have used in preparation for their surgery. The consult consisted of general postoperative instructions following an outpatient arthroscopy and the survey provided to the patients upon discharge. At the end of two weeks after the surgery,

either a print or email version of the satisfaction survey was given to the patient. The survey included a communication scale and medical staff scale, each containing five items. Three to five questions in the survey were specifically addressed to the patient's understanding and overall satisfaction with the preoperative and postoperative consultation.

2.1. Improved Outcomes and Recovery

Orthopaedic surgery is often used to improve pain, function, and mobility due to arthritis, injury, or other disorders; however, it comes along with often painful postoperative rehabilitation and a prolonged recovery. Possible benefits such as shorter recovery time and faster return to normal activities may be often overlooked and are emphasized in preoperative information. Patient education in general may enhance informed decision making, adherence to postoperative instructions, improve satisfaction, speed rehabilitation, and lead to more favorable outcomes. It was hypothesized that, compared to standard education, web-based education before surgery would be more effective in informing patients, result in improved understanding of the surgery and recovery, enhance patient satisfaction and comfort during the procedure, and reduce anxiety. The most valuable finding of this study is that supplemental web-based patient education prior to orthopedic surgery increases patient satisfaction scores. Preoperative web-based education provides patients with an informative head start enabling them to ask better questions during the consultation with their caregiver. Preoperative web-based education may result in more realistic expectations by the patient and a better understanding of the surgery and the postoperative instructions, thereby reducing anxiety.

1.6 3. Preoperative Education

Much research has been dedicated to the development of preoperative education programs for elective orthopedic surgery patients. Study results show preoperative education reduces anxiety and positively influences health behaviors and recovery. Programs may use instructional methods such as monthly classes, booklets, and multimedia education. Patient education is commonly provided when the surgery is planned and remains a part of the postoperative discharge instructions. Patient education typically includes anatomy, physiology, and a description of the surgery. Many programs also include information for specific aftercare needs such as physical therapy. Postoperative fall prevention is commonly covered in discharge instructions. Patient education for knee replacement often addresses the recovery process and self-care tasks, such as exercise and wound care. Post-surgical restrictions are often included as well (Causey-Upton et al., 2018). Some components of preoperative education programs may be more beneficial to patients. The topics included in preoperative education programs for elective total knee arthroplasty surgery have been categorized, and recommendations for optimal program design made accordingly. Orthopedic surgeries are the most common elective procedure for geriatrics. This growth is not only due to the aging population but also due to advances in orthopedic care. After surgery, in-hospital rehabilitation, outpatient physical therapy, and home health physical therapy. Evidence suggests that postoperative outcomes and pain management in geriatric patients may be improved with the use of nerve-block regional anesthesia in elective surgeries. Persistent widespread pain and interference due to pain are predictive of greater interference in postoperative depressive symptoms. The aim is to improve doctor-patient communication about pain by reducing the patient's perceived barriers to provide a complete description of the pain. Randomized clinical studies are investigating best methods for improving doctor-patient communication between geriatric surgical patients and anesthesiologists about pain. The educational needs of arthroplasty patients were identified, and educational topics are recommended that could improve patient

education for patients having this type of surgery. The teach-back methodology for preoperatively taught arthroplasty patients is recommended.

3.1. Purpose and Importance of Preoperative Education

The purpose of this paper is to understand the importance of preoperative education for individuals undergoing joint replacement, as well as recovery information. Three things that participants will walk away with are a better understanding of the Importance of Preoperative Education, suggested education content for preoperative education surrounding hip or knee replacement, and beneficial self-care and home safety tips for immediate recovery period after surgery. In the United States, 400,000 hip replacements and another 400,000 knee replacements are performed each year, making it one of the most commonly performed elective surgeries (Y. Barnes et al., 2018). Each year about 1 million joint replacements are performed in India due to various conditions such as Osteoarthritis, Post-traumatic arthritis, Auto-immune diseases and others. Majority of patients undergoing joint replacement need extensive rehabilitation post operatively and the best results are obtained if the patient is prepared well. People typically seek out total hip or total knee replacements when daily activities are greatly restricted, and pain is uncontrolled by previous treatments. Most often people suffering from hip or knee pain due to wear and tear, inflammation, or muscular imbalance.

It is beneficial for patients to attend educational sessions before surgery so they know what to expect and can prepare better. Participating in an education program typically helps to reduce stress and anxiety before and after surgery (Causey-Upton et al., 2018). Moreover, better educated patients are more likely to become active participants in their care process and have better outcomes. So preoperative education on what to expect post operatively is as important as the whole process itself. There are 73% of participants who expressed that they received preoperative education and 74% believe the information provided aided in the decision process for the joint replacement. For those who receive postoperative rehabilitation preparation it is generally done within 48 hrs of the surgery. The average stay in a hospital after knee or hip surgery in the USA is 2-4 days. In India, the average stay in a hospital is 5-7 days. The participants' knowledge related to surgery, hospital stay and precautions to be taken in the immediate post-op period could help in RD rehab preparation post-operatively and reduce complications.

3.2. Components of Preoperative Education

Educating patients before and after orthopedic intervention can positively lead to reduced anxiety and fear, and objectively meet the patient's needs while pathwaying effective recovery (Causey-Upton et al., 2018). Patients go through many different steps in the treatment process; beginning with patients entering the provider's office and ending with the completion of post-op/patient instruction. An effective preoperative educational program aims at improving patient preparation and ensuring full recovery in the postoperative period. Patient well-being, surgery success, and time in the hospital can be improved by careful planning and execution of preoperative education. Careful planning of preoperative patient education will also lead to reduced readmissions, increased patient involvement with the recovery process, and reduced length of stay. Preoperative education should aim to provide patients with knowledge and essential information to mitigate anxiety before their surgery and improve recovery. It is essential to consider what individuals must know ahead of time, at the time of surgery, and postoperatively. Many parts should be developed to educate total knee arthroplasty patients, including how to prepare for surgery, what to expect once in the hospital, into the expectation home environment, home safety, adaptive equipment,

self-care tasks, pain management, and exercise before and/or after surgery. Additionally, two other major areas of education to cover are the recovery process, functional mobility, home modification, and precautions. An essential part of an educational program to ready the patient for the surgical procedure is anatomical knowledge. More than half of all responding preoperative education for total knee replacement providers included coverage of the anatomy of the knee joint and expected functional outcomes. Short exercises to strengthen the quadriceps and hamstring muscles would also be included in the preoperative education as a way to prepare the patient for surgery.

1.7 4. Preparing for Surgery

Your doctor or other healthcare provider may recommend orthopedic surgery to alleviate pain, improve mobility, or in some cases both. In other cases, surgery may be required to lengthen, reshape, and/or realign bones and tissue to improve support and/or stabilize the skeletal structure. When preparing for surgery there are several steps you will want to take to make the process as smooth as possible for you. Surgery may involve the partial or full replacement of diseased or damaged joints. Surgeons perform over 1 million knee and hip replacement surgeries annually. If you are planning elective surgery, you likely have time to prepare both physically and mentally. Pre-admission testing will be required. This may include blood, urine, electrocardiogram (EKG), and/or chest x-ray. You may receive medications that you should stop prior to surgery. Do not eat or drink after midnight the day before surgery unless instructed otherwise by the anesthesiologist. This may cause your surgery to be canceled. If you have any symptoms of infection or illness, inform your surgeon immediately. You may need to be examined and may need to take antibiotics. Surgery will last approximately 2 hours, although more complex surgeries may last longer. Surgery will be followed by 1-2 hours in the recovery room (where you will wake up), and then you will be moved to a nursing unit. An estimated blood loss amount will be 300-800cc which is normal (Causey-Upton et al., 2018).

4.1. Physical Preparation

If you want to optimize your health before having orthopedic surgery, exercise is a safe. Not too much but not too little; two exercise sessions in the week before and two in the 6 weeks following hip or knee surgery have been proven to be beneficial (Vasta et al., 2020). Moreover, you should know that whatever your level of physical activity, following surgery, the more active you are the better will be your health outcomes.

Several papers had instructed the patients of the study group in a home-based activity program; exercises were completed individually or in small groups, and the activity program could be specific resistance training exercises, upper and lower limb session for strength, and a proprioceptive program. In the week -1 to 0 before surgery, there were 2 group sessions for the study group. To be common, each group took advice on how to walk again with the equipment needed and training for this group was commenced.

4.2. Emotional Preparation

OR patients often report apprehension, anxiety, and fear before surgery. Problematic emotions may be due to the lack of information, the anticipation of pain, or the type of the intervention. Patients may have a previous surgical experience being not successful. Desires are often described, such as not wanting to do it at all or preferring to have stayed in their country versus traveling for surgery. All of these aspects should be included and discussed. Caregivers can often exaggerate

their child's expected disability at two weeks, but this is not borne out when considering the child's forecast. DependencyProperty is squarely associated with increased child forecast. Analysis demonstrates that a child's forecast is not an accurate predictor of their pain or functionality. In addition, a child's forecast is not predictive of their caregiver's forecast. A caregiver is not an accurate predictor of the child's perceived disability if the caregiver expects the child to do better/worse than their worry child forecast. Ideally, the caregiver's forecast will mimic the child's forecast for the most predictive model. Educational disparities remain with caregiver forecasting. High school educated caregivers are still more likely to have catastrophic thoughts of their child's functioning. Similarly, a child's worry is associated with adverse functional outcomes that is not ameliorated if a caregiver is worried. If anything, child worry is more predictive of poor functionality. Such a situation prevents the child's function from translating to increased caregiver worry. Racial disparities are present in caregiver forecasting, with caregivers being more likely to catastrophize. An inaccurate child forecast nearly doubles the likelihood of catastrophic worry in caregivers. In other caregivers, the likelihood is still increased. Even when controlling for the forecast's accuracy, caregivers still have an increase of catastrophic worry.

1.8 5. Surgical Procedure Overview

There are more than one hundred types of orthopedic surgery procedures. Every procedure differs slightly based on its location, the history of the patient, the surgeon's approach, and the patient's needs. Typical aspects of orthopedic surgery patient education preparation for surgery and recovery from surgery include: what to bring to the hospital, how to prepare prior to surgery, what to expect while in the hospital, how to prepare for returning home, and recommendations for a successful recovery. This is a general look at the orthopedic surgical process to allow for addressing the aspects of the educational process. It can be inferred that education on how to prepare for returning home after surgery and education for recovery would vary little between the various types of orthopedic surgery.

A surgical procedure has been recommended as a solution for the orthopedic problem that currently affects a person. The need for surgery could be the result of an accident, such as a fall, an automobile accident, or a sports injury. The need could be the result of time, such as the slow progression of arthritis. The pain associated with the orthopedic issue could be disrupting sleep at night and limiting normal daily activities. First, the person has met with their primary care physician who has taken x-rays, performed a physical assessment, and referred the person to an orthopedic surgeon. The orthopedic surgeon has reviewed the x-rays and the physical exam. Treatment options to this point have not helped with the pain--not prescription or over-the-counter medications, not physical therapy, not walking aids. The orthopedic problem is significantly affecting the person's functional mobility. A surgical procedure has been recommended to alleviate pain, restore function and increase the person's quality of life. Sour grapes are the orthopedic problem that affects the person…getBlock of ice, capitals of Knee Joint, Patella and Coronal, Tibia, and Femur.

5.1. Anesthesia Options

There are several anesthesia choices for orthopedic surgery, including general anesthesia (GA), neuraxial/epidural anesthesia, regional anesthesia (RA) and peripheral nerve block. Among the available options, GA is the most widely used form of anesthesia in many facilities for orthopedic surgery. In general, lower limb orthopedic surgery is performed under RA, usually at muscular nerve distribution, with neurostimulation or ultrasound guided single shot or pump assisted

continuous infusion. This technique has a peripheral block that inhibits the nerve, resulting in the loss of motion and sensation of the corresponding area. A specially designed pump is mainly used for continuous epidural infusion that can give postoperative pain relief for up to several days. The role of the anesthetist is of key importance in the preparation of the patient and the choice of anesthesia. Clearly, perioperative and postoperative education of the patient and the anesthesiologist by the surgeon remains an important factor contributing to the reduction in the rate of general anesthesia, which is not preferred by most patients (Abdus Salam & Afshan, 2016).

The choice of anesthesia depends on a variety of factors, including the type and location of the surgery, the experience and skills of the anesthesiologist and the surgeon, and the preference of the surgeon and the patient. Clinicians are beginning to favor risk stratification for preoperative preparation and risk reduction, focusing on high-risk patients, including those patients co-managed by the primary care physician (PCP). Careful patient selection, timely and accurate diagnosis, thorough patient education and counseling, realistic expectations, and effective pre-emptive and preventive measures, including the use of preventive analgesic drugs, have all been shown to help enhance recovery and prevent the development of chronic pain states. Orthopedic surgeons and pain specialists should collaborate as early as possible to develop disease management plans, assess patient-related risk factors, develop appropriate preventive strategies, and consider non-surgical treatment options, as well as build a better home and community network to provide alternative, timely, and appropriate care (, 2007).

5.2. Surgical Techniques

A tourniquet is used in knee arthroplasty to allow for more precise cementing. The pressure setting used is 300 mm Hg above the patient's systolic BP, with a tourniquet time set at 125 minutes maximum (110 fascia, 8 minutes deflation, 7 fascia) (Quinn et al., 2021). This decision is made to allow for more controlled cementing in this setting of complex primary and revision knee arthroplasty. These timings are closely adhered to. Once the tourniquet time is done, the wound is re-prepped, and a new set of instruments and gloves is used for the definitive final prosthesis implantation. Any bone grafting is done prior to the tourniquet time.

Antibiotics are routinely given as this is a clean elective orthopaedic soft-tissue procedure. In primary TKAs blood loss re-infusion is not used. However, in revision TK RAs this is considered due to the associated higher blood loss. Additionally, a cell salvage device is used in all revision knee procedures. A single intravenous dose of tranexamic acid 1g is administered as a standard practice for every knee arthroplasty patient to aid in the reduction of bleeding. Warm compression stockings are applied to both legs, as well as calf compression devices. VTE prophylaxis is administered from preoperatively to 35 days postoperatively with daily Rivaroxaban 10mg. Rivaroxaban is given postoperatively pre-discharge. Transcutaneous nerve stimulation is used postop for pain relief and to assist with early muscle recruitment.

1.9 6. Postoperative Care

You must notify your nurse if you get a headache, upset stomach, become nauseated, or are vomiting. Nurse may be able to offer relief or report your symptoms to the doctor. Always keep the rubber drain pouch below the knee and maintain the safety pin in the upper thigh. Empty and measure the drain every time you use the restroom. After 24 to 48 hours, your drain will be removed at your doctor's discretion if output is minimal. You will be given a clear shower curtain when you leave the hospital. You may carefully take a shower to clean your body. To protect your

incision, soak a towel in salt/saline solution and cover the staples. Do not put any type of ointment on the incision. Keep your incision clean and dry. Do not immerse it in water. You must notify your nurse if you see increased redness, drainage, or separation in the incision. Keep the stocking for your knees on during the day. Of course, this may be removed to check the incision or to change other dressing. It is also helpful to elevate the leg as much as possible above the heart. Use at least four pillows while you are in bed. By no means should you place the pillows directly behind your knees. You may find it difficult to move in bed, flex your knees, or straighten your knee. This is normal and will gradually improve. Support your foot with a foam triangle to maintain the toes upward, or you may want to put the pillows under your feet that will keep your legs elevated too. Remember that fractures and Double/total Knee Replacements are done by different medical teams. The goals for nursing care are also different. A hip aspirator is usually placed because of lack strength after total hip arthroplasty surgery, but a damage control orthotic device is placed in 10% for fracture implant surgery. Be sure to check your medical record if you are to have a hip aspiration (J Nashwan, 2024). After the hinged total knee prosthesis is used, more intensive nursing care is requested. Please adjust your nurse care according to the differences between the two surgical procedures. For all the patients in the postoperative period, the display about the capillary response changes in foot is worth more emphasis.

6.1. Pain Management Strategies

Educating Patients on Strategies to Manage Pain Before, During, and After Orthopedic Surgery

Successful pain management requires communication between the patient and the anesthesia healthcare team. Therefore, pre, peri, and postoperative patient education is crucial to improve pain control. The effectiveness of patient education is most obvious when dealing with procedures that patients understand poorly, spurring preconceived widespread fears and misconceptions. This is the domain of medical professions' active educational intervention, turning potentially unreasoned fears into understanding and well-motivated concerns. This rule applies specifically to orthopedic surgery, often the first experience in the operating unit and as such steeped in mystery for the public (Dziadzko et al., 2022).

Successful pain management after outpatient surgery requires proper patient education leading to correct decisions on the use of analgesics at home. In the USA up to ½ of patients receive very little or no information regarding the treatment of postoperative pain at home and unfamiliarity with prescription, or inadequate postoperative analgesia instructions prevent 1/3 of them from being able to comply. Independent risk factors for less education are poor mental state components (higher anxiety, lower coping), having fewer previous surgeries, and being less educated. The proportion of patients that received an educational intervention tailored to psychological factors is small despite the use of such interventions being associated with better pain control after surgery and suitable for early physical therapy rehabilitation post joint replacement surgery. Among post-ambulatory surgery patients the absence of general health literacy shows a moderate correlation with poor pain control. Thus, the decision to use structured educational interventions using psychological empowering techniques aimed at improving postoperative pain management.

6.2. Wound Care

Introduction

When orthopedic surgery is indicated, the most effective way to foster a positive outcome is to be prepared. Many of the potential post-surgery issues can be pre-addressed, and the E-Learning can

be a helpful guide toward each patient feeling equipped to manage their care from day 1. This course is designed to provide a step by step instruction and support system that will walk each patient through their surgery from pre-op (how to prepare) to postop (what to expect). It will also explain and provide training on many of the therapeutic exercises and activities they may encounter throughout their recovery.

Wound Care

Be sure to follow all discharge instructions for wound care. Best practice guidelines recommend changing surgical dressings every 24 hours to prevent infection. It's important to keep the surgical site clean, dry, and covered. If staples were used, it's recommended that the wound be covered by a clean dressing and dried under a heating pad every 24 hours, followed by reapplication of a new sterile dressing, as per a physician's order. For sutured wounds, it should be replaced with a clean dressing every 24 hours after scrubbing with an anti-micro bacterial soap (Lucas et al., 2021). Medical steri strips may be used over the sutures for scar care, which will fall off after surgery. If the steri strips are gone, butterfly tape may be used to cover the wound.

1.10 7. Physical Therapy and Rehabilitation

It is always beneficial to work on upper body strength and flexibility before an upcoming surgery, as patients rely more on their arms immediately post-operatively than they usually do. A good plan is to work on increasing your shoulder and elbow range of motion (ROM), and if you're having a lower extremity procedure such as a knee replacement, work on increasing your hip and ankle ROM as well. To increase shoulder/elbow/hand range of motion, begin doing ice pick or stick activities. Essentially, any stick or object that is light weight and easy to grip will work.

Research shows an extensive variation in the delivery of physical therapy post total knee replacement surgery. Analysis suggests 3 specific aspects of physical therapy rehabilitation post TKR could be targeted to better explain and reduce unwarranted variations: the time from hospital discharge to the start of physical therapy, the actual exercise content of physical therapy, and the progressions to exercise. An understanding of these aspects should aid the development of better tools for the dimensional documentation of physical therapy post TKR and potentially other elective orthopedic surgeries. To be able to explain and to minimize unwarranted variations in rehabilitation, it is needed to better understand the most clinically important aspects of rehabilitation (A. Oatis et al., 2014).

7.1. Role of Physical Therapy in Recovery

Orthopedic surgery has become a very prevalent surgery among older adults in Bloemfontein. A study investigated the perceptions of preoperative home-based occupational therapy and physiotherapy interventions and current information sources utilized by patients prior to total hip replacement (Y. Barnes et al., 2018). The effectiveness of the intervention was evaluated through an examination of the impact on functional ability, patient reported function and health-related quality of life. The information received by patients was assessed to determine whether all relevant aspects pertaining to their upcoming surgery were being addressed. The comorbidities and complications that might necessitate a change in lifestyle or care were regarded as very important by more than half of the sample. Indications in hematoma prevention were ranked as insignificantly important by all individuals questioned, indicating that they may underestimate the significance of bruising management.

Early rehabilitation after total hip arthroplasty has been emphasized due to a lack of research and knowledge. A focus on the hospital setting and factors influencing the same has been national and international. Factors exerting a significant influence on certain aspects of early mobilization are comparable to previous evidence and have been used to produce recommendations for clinical practice. Explanations are provided in order to facilitate an enhanced understanding of the complex therapeutic process following total hip arthroplasty. Preoperative cigarette consumption, particularly heavy consumption, is a significant factor in the in-hospital rehabilitation mobilization process. Curative and rehabilitation professionals need to plan and adjust the course of treatment to the patient's state and needs, bearing in mind the risk factors identified by the analysis.

1.11 8. Nutrition and Hydration

As surgery approaches, it is important to prepare your body for the challenging and stress-inducing experience of the surgery itself as well as the healing that needs to occur post-operatively. This is especially critical for patients undergoing orthopedic surgeries in which long-term recovery and rehabilitation are needed. The two most important components to focus on during the build-up to surgery are nutrition and exercise. This is where you can have the largest impact on your recovery and long-term healing (R. Hirsch et al., 2021). Five days prior to surgery is when your body is going to need the most preparation. This means making changes to diet and exercise well in advance of pre-op day to optimize recovery.

Nutrient timing: Nutrient timing strategies can be helpful in preparing the body for the potentially exhausting stress of surgery. The four basic recommended strategies: consume a meal high in carbohydrates 2 to 4 h before check-in for surgery, consume the second meal from 30 min to 2 h post-operation, and supplement with essential amino acids before and after surgery. Surgery, especially trauma-inducing surgeries can cause a significant increase in the energy required by the body for healing. It is crucial pre-operatively, especially for those who are at risk of malnutrition, to ensure the body will have sufficient energy stores for surgery. In the days preceding scheduled operations, consuming two high carbohydrate meals can serve as a small measure that may benefit recovery by providing essential spared fuel to get a head-start on healing postoperatively. The state of the body’s muscle mass going into surgery is the deciding factor for recovery and survival outcomes. However, lean mass loss from immobilization and disuse following surgery is guaranteed. Some of the lean mass that will be lost post-surgery is disposable. Exercising at one’s maximum capacity preoperatively can offset some of this loss, and consuming EAA can protect against the loss of muscle mass postoperatively and even facilitate accrual of lean mass during the recovery process (Burgess et al., 2018).

8.1. Importance of Proper Nutrition

In addition to the other post-surgical recommendations and nutrition tips, it is vital to ensure adequate nutritional intakes prior to orthopedic or joint surgery. Consumption of a balanced diet and maintaining healthy body weight is important for good overall health, mobility, and energy levels, as well as keeping the muscles, joints, and bones strong. Malnutrition or being overweight can negatively affect normal muscle function and increase healing time.

There have been advancements in adjunctive treatment strategies in the care of patients undergoing total hip replacement and total knee replacement surgeries. One strategy for optimization is the preoperative nutrition of the patient with various supplemental nutritional products. In a recent systematic review, (Burgess et al., 2018) sought to identify the role of such supplements in the

nutritional support of patients undergoing total hip replacement and total knee replacement surgeries. As a large increase in protein intake is required by the elder adult, the usefulness of protein supplements in preserving lean body mass and physical function is considered. The loss of muscle mass, strength, and functionality following orthopedic surgery can be compounded by the stress of surgery, medications, immobilization, and by conventional practice. Loading activities such as resistance training have been shown to increase muscle mass, strength, and functionality following orthopedic surgery, with landscape improvements observed in the early post-operative period, likely due to rapid muscle growth. Such activities can be further enhanced through the intake of certain foods or nutritional supplements, such as the addition of essential amino acids. (R. Hirsch et al., 2021) reported an acute protein synthetic response 50% greater when drinking 15 g of essential amino acids compared with the same amount of non-essential amino acids, indicating that the addition of essential amino acids increases the body's capacity to synthesize protein and to repair and or regrow muscle tissue.

1.12 9. Assistive Devices and Home Modifications

You will be using a combination of a walker, cane or crutches as you begin to move around after your surgery. The specially trained physical therapist will explain the weight bearing precautions in detail and teach you the low impact exercises to make up for this. Walking with these devices will slow you down considerably, so it will be helpful for you to practice with them before your surgery (O. Smith et al., 2016).

As a result of your surgery, you will not be able to bend over so you will need a device that will help you reach things. It is best to use a device that you do not have to lift so you won't risk hurting yourself or causing yourself to be off balance. There are 2 helpful aids that are commonly used for picking things up – the reacher and the sock aid. You can also have some commercial cooler or utensil holders that will allow you to pick up drinks or food with just one hand.

There are a couple of devices that can be purchased for added safety in your bathroom. These include a garbage bag that can be placed over the shower to hold in the water, a long handle scrubber for your feet, a hand held shower nozzle and a non-slip bath mat for the tub. There are several safety handles that can be mounted in various places around the bathroom. Installation of one or more of these may be necessary if safety is in question. Other helpful tools include a bath sponge with a long handle, a dressing stick, a long handle shoe horn and the doorknob extension handle to make opening the doors easier and more manageable. Some important environmental modifications might also be helpful to consider.

9.1. Types of Assistive Devices

Kneeling one-leg hop-and-push gait with hands-free walker: a preliminary investigation of forces, spatiotemporal parameters, and perceived exertion. This study aims to answer the following questions-analysing of the ground reaction forces; kinematic, kinetic, and spatiotemporal parameters during hopping and pushing a hands-free walker; flow promotes similar cardiac workload in the two modes? This was achieved by analysing the joint kinetics of the participants before starting a mathematical simulation model for preventing OA. This study was able to predict the forces in the knee and other joints of the participants in the first 30 s of the gait initiation, from a standing position, using a mathematical model with enhancements proposed in the literature. Age of 65 and over, in particular, are affected by falls are common when walking with crutches. It was proposed walking with crutches is considered grandchildren/walker gait for geriatric users.

Modern and adjustable assistive gait devices hold the infants with an upright posture. Falls on public transport have the potential to severely injury pedestrians.

The medical community is divided over recommendations for immobilisation after a fracture. Get up and go threshold values for predicting nonsurgical hip fracture are reported. An accelerated strength regimen that targets the posterior muscles, the weight support muscles of the pelvis-femur axis. However, the strength gains were observed earlier and the effect of training alone on muscle size adaptations of the gluteus maximus and the lumbar multifidus was lower compared with previous results. Some studies have indicated a very short period as a reference, even if it is only a few days, and the muscle starts to shrink. To our knowledge, this is the first study investigating the effects of post-fracture NWB immobilisation on muscle atrophy, intramuscular, and intermuscular adipose tissues in the thigh and calf. Understanding the impact of different muscles during walking could help optimise exercise and drug regimens designed to attenuate the changes in these tissues.

1.13 **10. Follow-up Care**

Patients discharged to skilled nursing facilities after orthopedic surgery followed up with their surgeons for their initial postoperative visit less than two-thirds as often as those who returned to their own residence. While the need for in-person visits by skilled nursing facility residents shortly after hip fracture surgery is well documented, they otherwise can be difficult for this high-risk patient population to achieve in a timely manner upon discharge from hospital.

The care of elderly patients with hip fractures is complex and differs from elective arthroplasties or fracture fixations. For example, many will never bear full weight on the affected extremity. Beginning from the initial visit, consultation with at least two other medical services is typical for the overwhelming majority of hip fracture patients. Specialties seen include orthopedics, geriatric medicine, cardiology, and hospital medicine in addition to internal medicine and primary care. The postoperative care plan developed for each patient goes uninterrupted in the overwhelming majority of patients. Just under 80% of the patients without a protocol change made it without an unplanned follow-up clinic visit. When a concerning follow-up visit symptom was reported, this led to the diagnosis of wound complications in better than half the cases. Importantly, for approximately 80% of patients with a surgical complication, either the patient or a care provider reported a concerning symptom leading to its diagnosis.

10.1. Importance of Follow-up Appointments

Orthopedic surgeons perform a variety of surgeries on the musculoskeletal system to improve mobility and relieve pain related to diseases such as arthritis, injuries, and deformities. Some of the more commonly performed orthopedic surgeries include hip and knee replacements, knee arthroscopies, and shoulder surgeries. Your doctor can best provide you with instructions for preparing for surgery and making a smooth recovery since many factors are being considered. However, listed here are some tips to keep in mind when planning for your upcoming surgery. Surgeries need to be scheduled in advance. They will most likely occur in a surgery center or hospital and might need an overnight stay. For some procedures, patients may meet with a physical therapist in advance to review exercises to be done both before and after surgery. Blood work and other tests might also need to be completed before the day of the surgery. It is important to know that if you have gum issues or other dental problems, it is advised to make a dental appointment before surgery. Supplemental forms, such as advance directives or health care proxy forms, may

be necessary. Be sure to get the paperwork needed signed and submitted to the appropriate office before surgery. Before leaving the facility where the surgery occurred, have the date of the first follow-up appointment. This visit is important for examining the wound, making sure healing is going well, and discussing other important care instructions (R. Lee et al., 2024). It is easy to miss these key follow-ups if a reminder is not readily available at home, so make note of these dates.

1.14 11. Potential Complications

1. Potential Complications 11.1. Orthopedic Surgery 11.1.1. Introduction Since surgery itself does not guarantee quicker recovery or certain pain relief, patients need to know that orthopedic surgery comes with risks, like any other intervention. After orthopedic surgery, some people need physiotherapy and must develop stress strategies to control pain as not achieving good pain management can also delay recovery. 11.1.2. Overview of Complications Scars form and hair may grow on the scar, which can be removed by a surgeon. Infection can occur and must be combated by increasing food and water intake, daily cleaning, medical appointment, and antibiotic if/when necessary. Low grade fever can occur and can be alleviated by more rest, more food and liquids, and medication only when above 38.5°C or for 5 consecutive days at 38°C. Delayed wound healing or wound separation must be monitored daily and checked by a nurse whenever it happens. Metallic sutures are removed by a nurse or surgeon about 10-15 days after surgery. Over time, nerves will regrow and tingling or burning sensations can occur, but not pain. It can be alleviated with relaxation, hot water, massage, and medication, and bed rest. Fibrous tissue may also form and be tough to stretch or break, causing pain. Similarly, they do not disappear by themselves. Location or size may not diminish at all. Deep venous thrombosis should be suspected if calf pain or swelling occur. It should be elevated and a medical appointment sought to check if a Doppler ultrasound is needed to rule it out. Anesthesia can also leave lasting complications. Anemia and frequent hair loss can occur. There may also be nausea or vomit for the first ten postop days. A blood transfusion can be requested in case of severe anemia. Another possible complication is falling. Bed and space should be kept clean to prevent falls. Finally, lymphedema may occur. Such cases are referred to a specialist after physiotherapy.

11.1. Signs of Infection

Any orthopedic procedure requires special care and attention. To assist in planning for the surgery and for aftercare, the following advice: 'Days in the hospital and at home will be your prime concern. Essential information here includes bringing ID, health insurance card, a list of medications, past surgeries, allergies and health problems. It is good to arrange for someone to drive you home from surgery. Make arrangements for help, e.g. cleaning, washing, dressing and food. Sometimes material is best understood in a different language. There are language services for patients. If someone doesn't understand the dialect well it is best to get a translator. If something is understood better in large print, braille, or audio format mention it to the health worker' (Danilo Cassano et al., 2024). All surgeries carry risk, such as an adverse reaction to anesthesia, blood loss, infection and heart attack or stroke during surgery. Body systems which could be damaged include heart, liver, kidneys and lungs. Appropriate preparation for surgery involves patients understanding how to get surgery done safely and to continue to be safe after surgery.

After surgery, there are possible complications. For example: ‘sore throat if a tube was placed in the windpipe during surgery, infection, blood loss, heart attack, pneumonia, blood clots in the legs and arms, urinary tract infection, drug reaction, lung infection, muscle atrophy, bedsores’ (Lucia L. Lima et al., 2013). Sometimes an individual might feel helpless, sad or moody after surgery but

should start feeling better each day. Part of recovery will be learning how to take good care of oneself and what to do at home. Something to look out for include changes in behavior, fever, feeling faint, fast heartbeat, chest pain, trouble breathing, nausea, severe pain, physical changes and tingling, cold or pale legs. Sometimes it isn't clear how to cope with what happens after surgery: 'Aches and pains at home can come with worries that it will not heal or will heal badly'. A therapist helps make the advice clear, focusing on what is key to prevent anxiety. With good medical care, necessity to change some habits, physical therapy, occupational therapy, and good patient understanding, healing becomes easy.

1.15 12. Emotional Well-being

Feeling emotionally ready for surgery is important. Those who get surgery when feeling very anxious or down in the dumps may not be satisfied with how they feel afterwards. When filled with worry or sadness, patients may have higher levels of pain, more trouble taking care of themselves and enjoy life less. Ask for help or talk with a counselor about concerns before getting surgery to increase the chances of feeling eager to continue with the plan and enjoy life. Another part of being ready is finding out what will happen afterwards. Before surgery, there'll be an appointment to talk about what to do to prepare. Patients who understand what they have to do and why it's important feel more in control. Uncertainty is part of getting treatment because each body can respond in a slightly different way. Write worries down and remember to ask when meeting with the doctor to help feel as calm and ready as possible (P. O'Connor et al., 2022). One benefit of the ongoing support is having continued help. Each person reacts in their own way to hospitalization— what is very easy for one person to handle might be almost too much to cope with for someone else. Though the doctor is informed about how to do something, they don't know what life is normally like day-to-day. There isn't a set amount of appointments and can continue to get help until feeling ready to move forward. Write down how feeling if worried about something— it may not be necessary to be feeling a particular way to get help with the emotion (Tristaino et al., 2015).

12.1. Coping Strategies

Purpose: This study aimed to investigate the characteristics of coping strategies for dysesthesia before surgery in patients with compressive cervical myelopathy. The design of this study was a multicenter cross-sectional study. A total of 141 patients with compressive cervical myelopathy were included in the cohort. Their demographic data and clinical data were collected and self-rated questionnaires were completed. The degree of dysesthesia was assessed based on a self-rated visual analog scale using a question in the Japanese version of the Japanese Orthopaedic Association Cervical Myelopathy Evaluation Questionnaire (Higuchi, 2014). The coping strategies for dysesthesia and kinesophobia were assessed based on the Japanese version of the Pain Catastrophizing Scale and the Tampa scale for kinesiophobia, respectively.

1.16 13. Patient Resources

Considering joint replacement? Here is information and resources to help you or a loved one prepare for and recover from orthopedic surgery.

13. Patient Resources

Orthopedic surgeries are very common, with hundreds of thousands of these types of procedures performed in the United States each year. There are numerous orthopedic surgeries performed on

the body's joints. Some of the most common orthopedic surgeries are those performed on the knees, hips, and shoulders. These surgeries are generally elective, meaning the patient chooses surgery and determines when and where the surgery will take place. Regardless of the joint being replaced, the surgical procedure, referred to as total joint arthroplasty, is similar for all joints. This surgical procedure is a means of reducing pain and providing a return to function when other means have failed. Although there have been consistent improvements in the device used to replace the joints, the design of the procedure has changed little.

Recovery and Rehabilitation Over 1.5 million total joint arthroplasties are performed worldwide each year. An improved understanding of the joint replacement process, rehabilitation, and the patient experience might improve care. More joint replacements are being performed on a younger, and therefore employed, population. Understanding the common rehabilitative pathways utilized for patients post TJA would be beneficial. Post-TJA rehabilitation facilities are common in both urban and rural locations. Various short-term and long-term durable medical equipment is utilized during the TJA recovery process. Common recovery experiences among patients post TJA include a decrease in pain and an increase in the ability to participate in daily activities such as basic hygiene and getting dressed. Patients are discharged from the inpatient setting post TJA when they no longer require acute medical and daily living assistance, but they can be unsafe. Post discharge, physical therapy and home health services provide therapy and assistance with daily living. Patients are ultimately discharged from physical therapy and home health services when they begin to plateau in functional progression.

13.1. Support Groups and Online Communities

A postoperative support group is intended to provide an ongoing connection of support between health care professionals and families/patients. Typically, the group meets on a regular basis with a prescheduled format that may include a short presentation by a guest speaker, followed by a question-and answer period, or an informal time of discussion about the surgery, expected and unexpected recovery and progression of goals. Informational materials are often provided by the health care professional facilitating the meeting(s). Commencing a support group is an excellent endeavor for those practitioners who are in isolated areas as the formation can be of great benefit to the surrounding rural community.

There is a significant variation in the content and quality of the educational material online. This information may bring about misinformation and leave the patients feeling inadequately prepared. It is recommended that health care providers should be aware of this void and direct their patients towards reliable and accurate resources or develop their own education to provide patients with the necessary tools to make informed decisions regarding their surgical care (F. van Eck et al., 2018).

1.17 **14. Conclusion**

Protection of independence in activities of daily living is of primal concentration to a majority of adults as they are getting older. In consideration of the fact that increased mobility leads to greater self reliance, damage to the musculoskeletal system significantly influences the quality of life of both patients and the inhabitants of social environment, particularly those who are the closest. A delay in the surgical procedure that focuses on the locomotor system that follows the deterioration of the quality of life is additional attire for the involvement of both medical and interpersonal measures. The need for orthopedic surgery also reaches persons belonging to the working age

population who expect their recovery to be as soon as possible to regain full fitness. The following discussion is supposed to provide patients with information concerning the preparation for a therapeutic orthopedic procedure and enable them to understand the aspects of the convalescence process that accompany it. It is highlighted that substantive disability in the lower limbs causes limitations on daily activities such as dressing and undressing, a percentage of consults regarding the possibility of inability to deal with daily activities independently, limitation of movement possibilities in the synovial joints hinders ordinary housework. Today's innovative methods do not allow to completely restore their efficiency through the therapeutic effort, but it is possible to improve mobility and reduce pain.

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