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Patient Perceptions of Acute Phases of Rehabilitation Following Shoulder Arthroplasty

Elizabeth Horrall Stith
University of Indianapolis - USA, estithotr@gmail.com

Lisa Borrero
University of indianapolis - USA, borrerol@uindy.edu

Laura Santurri
University of Indianapolis - USA, santurril@uindy.edu

Lori Breeden
University of Indianapolis - USA, breedenl@uindy.edu

Sarah Shemanski
sarah.shemanski@bhsi.com

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Patient Perceptions of Acute Phases of Rehabilitation Following Shoulder Arthroplasty

Abstract

Background: Shoulder arthroplasty is a common procedure, but a lack of research regarding recovery and rehabilitation limits occupational therapists from providing appropriate education and support. The purpose of this study was to explore and understand the patient's experiences in the acute recovery phase following shoulder arthroplasty.

Method: Twelve participants completed three semi-structured interviews in the first 6 weeks following surgery. A basic-interpretive approach was used before coding interview transcriptions into categories.

Results: The participants initially reported increased reliance on assistance and/or modifications in ADLs routines, such as dressing, bathing, and sleep. Interruption in sleep was reported because of pain and/or positioning restrictions, and frustration because of a lack of sleep and need for assistance was noteworthy. As sling usage decreased, the participants reported returning to ADLs with a coinciding reduction in frustration. Finally, the participants noted improvement in ADLs and IADLs and a return to tasks such as driving, cooking and meal preparation, and returning to social engagements. Overarching themes included presurgical expectations, advice, pain reduction, and general improvement in quality of life.

Discussion: Changes to patient education, including ADLs and IADLs assistance needs, may improve patient recovery. Occupational therapists specifically may improve recovery by using their understanding of arthroplasty, environment, routines, and other factors that affect sleep.

Comments

The authors report the receipt of grants from the University of Indianapolis during the conduct of the study.

Keywords

shoulder arthroplasty, occupational therapy, assistance, activities of daily living

Credentials Display

Elizabeth Horrall Stith, DHS, OTR/L, BCG; Lisa Borrero, PhD; Laura Santurri, PhD, MPH, CPH; Lori Breeden, EdD, OTR; Sarah Shemanski, RN, BSN, RN-BC

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Shoulder arthroplasty (SA), or shoulder replacement, is a common surgical intervention for patients with persistent pain and loss of occupational performance as a result of osteoarthritis (OA), rheumatoid arthritis, rotator cuff tear, osteonecrosis, and humeral head fractures, with OA being the most prominent diagnosis for SA (Palsis et al., 2018; Wilcox et al., 2005). Many published protocols are used for recovery, most of which were derived from Dr. Charles Neer's protocol to progress healing and recovery (Denard & Lädermann, 2016; Mulieri et al., 2010; Wilcox et al., 2005).

Therapy often begins with a preoperative education class, which may reduce anxiety regarding surgery (Flanigan et al., 2015). Preoperative education focuses on the abductor sling, postsurgical precautions, and hemiplegic dressing techniques. After surgery, therapists often instruct patients to complete a home exercise program (HEP) several times per day focusing on passive shoulder range of motion (ROM) as well as active elbow, wrist, and hand ROM to maintain distal mobility (Mulieri et al., 2010).

Neer's Protocol

Following surgery, most surgeons use variations (Zec et al., 2016) of Neer's protocol, which identifies four phases of rehabilitation as immediate postsurgical, early strengthening, moderate strengthening, and advanced strengthening (Zec et al., 2016). The focus of this study is on patient recovery during the immediate postsurgical and early strengthening phases.

The immediate postsurgical phase (Phase 1) goals include soft-tissue healing, maintaining joint integrity, reducing pain and inflammation, and limiting active range of motion (AROM) in the surgical shoulder. The patient typically wears an abduction sling continuously, is non-weight bearing in the extremity, and completes passive range of motion (PROM) several times daily (Denard & Lädermann, 2016; Wilcox et al., 2005). The early strengthening phase (Phase 2) typically begins at 4 to 6 weeks postsurgery, with goals to restore full PROM and AROM and control pain and swelling (Wilcox et al., 2005). Phases 3 and 4 work to progress AROM, strengthen the shoulder capsule, and restore function without pain (Wilcox et al., 2005). These modified protocols may vary but typically maintain that restoring PROM is the immediate goal of therapy, with strengthening to follow only after maximal PROM is achieved (Wilcox et al., 2005). The protocol remains consistent for both total shoulder arthroplasty (TSA) and reverse shoulder arthroplasty (RSA).

Despite limited research regarding postoperative protocols for total shoulder replacements, researchers identified "that the success of the procedure relies heavily on the soft tissue variables and the postoperative management" (Wilcox et al., 2005, p. 827). Neer himself stated, "shoulder replacement will fail without adequate rehabilitation" (Brems, 1994, p. 99). Additional researchers stated that "nearly every article in literature about TSA states that the success of TSA is dependent upon rehabilitation" (Wilcox et al., 2005, p. 827).

Joint Arthroplasty

With limited research on patient recovery and perceptions specific to SA, articles focusing on knee and hip arthroplasty have offered insight. Hall et al. (2008) identified "breakpoints," or "the time when an individual . . . has come to the realization that they will require . . . arthroplasty" in patients with OA (Hall et al., 2008, p. 172). These breakpoints were noted to represent increased difficulty with mobility, decreased sleep quality, increased restriction in activities of daily living (ADLs), and increased reliance on family for instrumental activities of daily living (IADLs) (Hall et al., 2008). Not surprisingly, frustration and inadequacy were highlighted as common emotions, touching on psychological factors surrounding orthopedic surgeries (Hall et al., 2008). Patients reported postoperatively increased physical activity levels, decreased pain, and contentedness regarding their potential to be more active as compared to presurgical reports (Harding et al., 2015).

Despite vast amounts of research on SA factors, including surgical technique, prosthesis, and long-term outcomes, little research has examined patient perspectives during rehabilitation. Multiple researchers have noted the need to educate patients preoperatively and to define patients' expectations of surgery outcomes (Levy et al., 2016; Wilcox et al., 2005), yet few have specifically sought to understand patient experiences throughout the rehabilitation process. The aim of this study is to use the findings to provide therapists with increased insight into patient needs, expectations, and surprises during the first few phases of rehabilitation following SA.

Factors Affecting Recovery

Several studies have addressed factors and their effects on SA recovery, such as body mass index and diabetes negatively correlating with postoperative ROM (Levy et al., 2016). However, no other comorbidities, such as osteoporosis, age, arthritis, or smoking, correlated with postoperative ROM (Levy et al., 2016). Age was also not a consideration in outcomes, as patients over 80 years of age had results similar to those over a decade younger (Iriberri et al., 2015).

A review of the literature by Flanigan et al. (2015) provided insight into psychological factors in orthopedic surgeries, linking these factors to the effect of pain perceptions, compliance with rehabilitation, and patient outcomes. Several articles associated patients' self-efficacy and optimism with successful outcomes, but stress and depression were found to have negative effects (Flanigan et al., 2015).

Postoperative rehabilitation is a large component of successful outcomes in SA because of the involvement of the soft tissues in and surrounding the joint (Wilcox et al., 2005). However, postoperative protocols vary and scant literature addressing the patient perspective of SA rehabilitation exists. Lack of evidence limits therapists in providing appropriate pre and postsurgical education to prepare patients for discharge to the home environment. The purpose of this study is to explore the patients' subjective perceptions of rehabilitation during the initial phases of total shoulder arthroplasty following SA as a result of OA. The researchers sought to better understand patients' views of recovery and their overall progression toward return to function by asking the following research questions:

How do patients perceive of and experience recovery during the immediate postsurgical and early strengthening phases of shoulder arthroplasty?

- During this recovery period, how do patients perceive of and experience engaging in ADLs?
- During this recovery period, how do patients perceive of and experience engaging in IADLs?

This study will allow therapists to prepare patients for challenges they may encounter following discharge from the hospital. Therapists will be able to adapt current strategies to provide better education regarding compensatory strategies for ADLs and assess what currently provided information is useful to patients. The findings of this study uncover what surprised patients about the recovery process, how progression between the first few phases of rehabilitation impacts patients' daily lives, and how to better prepare patients for what to expect after surgery.

Significant research on SA exists because of the variety of surgical methods and rehabilitation protocols. Researchers have stressed the importance of recovery following SA (Brems, 1994; Denard & Lädermann, 2016; Mulieri et al., 2010) and have highlighted the need for preoperative education and managing postoperative expectations and differences regarding rehabilitation with different protocols (Levy et al., 2016; Wilcox et al., 2005).

Method

Study Design

This study used a qualitative basic interpretive approach to delve into patients' perceptions and experiences following total shoulder surgeries. The researchers explored how patients experienced their rehabilitation once discharged to home, how they managed limitations necessitated by surgical precautions, and how surgery impacted their return to occupational performance. The hospital setting in this study entered into an alliance agreement with the University of Indianapolis, which served as the IRB of record.

Participants

Purposive, convenience sampling was used to select participants who were preparing to undergo SA. The inclusion criteria was (a) diagnosis of primary OA, (b) score within normal limits on the Short-Blessed testing for cognition, (c) independent ambulators prior to surgery, and (d) discharge to home environment following hospitalization. Exclusion criteria included (a) non-English speaking patients, (b) discharge to another health care facility following hospitalization, and (c) comorbidities significantly limiting rehabilitation (e.g., amputations, other UE joint deformity). All of the patients received the same rehabilitative protocol. Approximately 17 participants were approached and 12 agreed to participate. The group was comprised of five males and seven females ranging from 59 to 89 years of age with a mean age of 75.3 years. Nine of the participants had shoulder replacement on their dominant arms, and only three sought nondominant shoulder replacements. All surgeries performed were RSA. Of those who did not participate, one agreed but was admitted to the hospital because of other health conditions before the first interview, one was not cognitively intact enough to agree to participation following surgery, one was admitted to a subsequent health care facility, and two did not provide reasoning for not participating.

Data Collection

All of the participants completed preoperative education, although not all of them completed the class with the primary researcher. Therefore, recruitment took place either during preoperative education at the hospital or in the patient's hospital room prior to discharge. Interested participants provided information regarding age, gender, and hand dominance and selected an identification number to ensure confidentiality. Verbal consent was obtained at the beginning of each audio-recorded interview. Data collection was comprised of three distinct telephone interviews at approximately 2, 4, and 6 weeks following surgery.

The interview questions were open-ended and began with patient feelings regarding their preparedness for discharge or a review of issues revealed in the previous interview and progression since the last interview. The interviews were audio recorded and addressed tasks that were difficult for patients and the impact the surgery had on the participants' social lives, sleep quality, and pain. Each interview followed a top-down approach, beginning with broad issues and progressing to more specific issues that the participant may be experiencing. Probing questions to elicit more information, examples, or clarification were used as follow-up questions to ensure the researcher understood the participant's response.

Data Management and Analysis

Audio recordings were transcribed immediately following each interview and stored in the data management and analysis application, Dedoose 8.1©. Transcripts were analyzed in a line-by-line coding process with multiple researchers coding independently. Initial coding resulted in the creation of a code book that was used to guide the coding of the remaining transcripts. These codes were then more specifically labeled into categories and subcategories, as needed, as a hierarchical coding scheme emerged (Lewins & Silver, 2007). From these categories, the researchers searched for themes and patterns that emerged from both individual interviews and cross-theme comparisons (Saldaña, 2007).

Rigor and Trustworthiness

To ensure quality results of this study, we used Guba's Model of Trustworthiness to assess the trustworthiness of the data collected (Henderson & Rheault, 2004). Member checking was used after the interviews to ensure credibility and confirmability and that the patients were able to correct errors in interpretation. To enhance dependability and confirmability and avoid bias and other preconceptions we used triangulation (a variety of sources, methods, theories, and/or investigators in the study), such as multiple investigators (Heale & Forbes, 2013). An additional, experienced qualitative researcher on the IRB protocol assisted with initial coding, which increased credibility (Amankwaa, 2016). Also, raw data, data reduction, analysis products, and process notes were all kept in the Dedoose software throughout the process of this study, thus creating an audit trail that further increased credibility of the data (Amankwaa, 2016). To ensure transferability, the open-ended questions were derived from another questionnaire (Amankwaa, 2016). Finally, to further promote dependability, the process of reflexivity was used (Darawsheh & Stanley, 2014). To this end, a reflexive journal was kept throughout the interview process to improve transparency during both the interviews and the data analysis portions of research (Darawsheh & Stanley, 2014).

Results

Themes evolved and changed with each subsequent interview. Some overarching themes were present in each of the three interviews, such as pain, presurgical expectations, and advice for future patients, while some themes varied between the three interviews.

Interview 1

Interview 1 was completed 2 weeks after surgery when protocol dictates that patients are to wear an abductor sling at all times, except when bathing, dressing, and completing a HEP. Frequent use of cryotherapy is encouraged to reduce pain and swelling as well as to promote soft-tissue healing. During the interviews, it was apparent that the participants required the most amount of assistance throughout the first stages of the protocol.

Assistance and modifications. Assistance and modified routines were overwhelming themes in the first 2 weeks of recovery. All of the participants returned home with either a spouse or plans for increased assistance in the first few weeks following surgery. Most of the participants returned home with a spouse, two of the participants discharged to a friend or family member's home first before returning home alone, and the other participants had intermittent assistance of home health aides and multiple family members. One participant went as far as to describe the assistance of others as "indispensable."

Dressing. The participants often required assistance with dressing during the initial phases of recovery. In addition to requiring assistance with upper body dressing because of restricted use of the surgical arm, the participants needed help with undergarments and lower body dressing, which they reported to be increasingly difficult. As one participant stated, "Thank goodness, my old man took off work and he's been helping me get dressed. I can put on some stuff but some's impossible. Like tying your shoes. Underwear. I need some help with my underwear."

Because a diagnosis of OA was included as inclusion criteria, it was also common to hear of additional assistance being required to complete dressing tasks. Another participant stated:

> I have terrible arthritis in my hands and it takes both hands for me to be able to put socks on. So, one hand being completely useless for right now, up 'til now, no, I couldn't put my socks on. I could put my pants on, and my underwear, but pulling them up is difficult. I can get one side good, but the other side, she grabs a hold and gives it a jerk. And she helps me with my shirts. I just lean over and let that arm hang and we put that in and then she just helps me with my shirts.

However, approximately one-third of the participants were able to complete dressing tasks without or with only minimal assistance. Many were able to complete dressing tasks without much assistance, but required significant modifications in both dressing techniques, such as employing hemiplegic techniques, as well as the types of clothing they wore. One participant described dressing modifications in the following way:

> If the shirt's baggy enough and got a big neck it goes on a lot easier. You put on the bad side first. And really, really loose pants. I usually need help pulling them up, but if they're loose enough I can get them up most of the way on myself.

Several of the female participants reported wearing larger clothing, such as gowns, not only for ease of dressing, but also to decrease difficulty with lower body dressing during toileting. For example, one said: "I usually keep on something baggy or a baggy old nightgown so I can just lift it up and go to the bathroom." Other participants stated that they required increased time to complete dressing tasks: "It probably takes me 10 minutes just to tie my shoes."

Bathing. Another area of assistance and modification frequently reported during the first few weeks after surgery was bathing. Often, assistance was required to wash their head and hair, and others reported assistance with washing the nonsurgical arm. Several of the participants reported difficulty and frustration with modifications, such as adaptive equipment. Many reported that difficulty bathing was not acute. "I had trouble even before I went in with washing my head. I couldn't get my right hand up to work in the lather. I had to do it all with the left hand."

Sleep. Sleep was both a frequently reported modification as well as a frequently reported frustration for nearly all of the participants in the first 2 weeks following rehab. Because of the positioning requirement, the participants were required to sleep in the abductor sling with a pillow behind the elbow to ensure proper joint alignment until otherwise informed by their physician. Difficulty sleeping was attributed to pain, discomfort, inability to sleep in a preferred position because of positioning requirements, itching, and temperature changes. Nearly all of the complaints were linked to one thing: the abductor sling. "It's because of the sling. It's just kind of uncomfortable, the sling is, with that big padding."

Only three of the 12 participants slept in a bed; the others slept in a recliner for comfort and ease of positioning. However, the participants who slept in recliners reported difficulty, as recliner handles are often located on the right side.

Other ADLs and IADLs. Multiple other ADLs were stated as difficult tasks early in the rehabilitation process. In addition to difficulty with clothing management related to toileting, the participants also reported difficulty with perineal hygiene requiring modifications to complete. Other

ADLs that emerged during the first interview were brushing teeth, completing hair combing and styling, and positioning for ADLs. Many reported requiring assistance with ADLs initially but stated increased independence or total independence at the 2-week mark, as conveyed by one participant: “She helped me up until yesterday, and I think I did it today by myself, you know, so it’s just getting a lot better.”

Each participant reported IADL assistance, with many requiring significant assistance from family to complete meal preparation and cooking tasks, laundry, medication management, and housekeeping. Assistance for transportation was required as the participants were not yet released to drive. Grocery shopping was also consistently an area in which the participants received assistance, likely because of driving restrictions. Modifications of IADLs appear more common nearing the 2-week mark, with one participant outlining the modifications she required: “I have done very little housework. I can load the dishwasher . . . clothes in the washer and take them out of the dryer with one hand. Instead of carrying four or five things, I may carry two or three.” The other common modification of daily routines regarding IADLs was to omit them: “I probably just don’t do them.”

Interview 2

In Stage 2, the progressive nature of this protocol requires that patients achieve all criteria from the previous stage to progress to subsequent stages, meaning that at 4 weeks following surgery some of the participants may have still been in Phase 1 (immediate postsurgical phase) while others progressed to Phase 2 (early strengthening phase). The participants were still instructed to sleep in the sling, but they could remove the sling gradually when home throughout the day. Even with progression of therapy, movements with the surgical arm continued to be passive or assisted. During this interview, modified routines and assistance remained a common theme, with IADL assistance becoming more common as compared to Interview 1.

Modified routines and assistance. Similar to the first interview, the second interview included assistance and modified routines as significant themes. One participant described this point of recovery:

> It just seems that I want to do more with my arm than I’m really supposed to do. So, I have to be mindful, don’t pick this up, don’t . . . I’m not supposed to put my arm behind my back, and when you’re pulling your pants up you want to put your arm behind your back a little bit, so I watch that. Let’s see, what else. And at night, I sleep with a pillow under my arm and I’ve got to make sure I keep it on that pillow. Those are just problems that I’m having right now. Just trying not to use it but wanting to use it.

At 4 weeks following surgery, several of the participants were able to dress themselves. Others employed modifications, such as shirts and pants without buttons, altering the sequence in which they typically dressed, or wearing shirts with larger necks and/or sleeves, to complete dressing tasks. A few stated they required assistance to comply with their precautions:

> I tend to want to get dressed on my own, so I have to be sure that I don’t do that. Some shirts are really hard to put on, my wife has to help me. My coat, it’s really hard to put on, so she helps me with that. Dress shirts are much harder to put on because I can’t quite get the shoulders up where they go. Now my tee shirts, undershirts, they go on pretty easy. I can do them by myself. But a dress shirt I just can’t manage.

Nearly all of the patients were able to complete bathing tasks with little to no assistance, and those who did have assistance with ADLs stated apprehension with using their surgical arm: “I'm sure that I could, but it’s a mindset that I don’t do any more than you have to with it. Stick with the exercises rather than getting back to the actual normal stuff.” Several noted continuing to use modifications learned prior to surgery, despite being released to use their surgical arm in the home. As independence increased, frustration decreased with multiple participants stating appreciation for caregivers: “You don’t realize how nice people are until something happens.”

When discussing modifications and assistance, subthemes of sleep, self-feeding, and IADL assistance emerged frequently.

Sleep. Similar to the first 2 weeks, sleep continued to be an area of modification for many of the participants. Despite being given more freedom from the surgeon during the day, the patients were instructed to continue wearing the abductor sling while sleeping to ensure proper joint alignment. Several of the participants reported sleeping without difficulty, but the vast majority found modifications to improve sleep. Most notably, the couch and the chair continued to be a method of modification because of the ease of repositioning, as reported by a participant:

> Well, I don’t sleep very well at night. But I do sleep. I can get up and get on the couch and I’ve got pillows propped up there and then I can lay on my side and rest my back against the back of it, and it takes some of the weight off.

After weeks of modifications, many were attempting to return to a more typical sleeping pattern: “I’m sleeping on a couch right now. I tried a bed at night, the night before last, and I just couldn't get comfortable.” Another participant elaborated on difficulties with sleeping in a bed: “When I try to pull a cover over me or something like that, it’s awkward because my right arm just doesn’t reach it. It doesn’t have the strength yet that I need.”

Self-feeding. As the participants required less ADL assistance and were permitted more freedom from the sling, self-feeding also became an area of improvement. Several of the participants stated no difficulty, with about a third stating they were regaining independence, such as being able to cut up meat independently. The increased independence was not specific to utensil usage, as reported by one participant: “I’m getting a lot of strength back in my arm now. Before, I couldn’t even pull the top off of the little pudding cup. Now I can.” One participant continued to report requiring increased time and modification for self-feeding and meal prep tasks: “Cutting I have done a little. I haven’t done a lot. It seems like it’s okay. I can handle it. You have to learn how to do it as far as slicing and quartering.”

Similar to requiring increased time, the same participant stated lack of strength and coordination as a limitation:

> I can eat with it but I have trouble because of the lack of strength, of putting the fork down through something to cut it. To put it in my mouth I usually have to take my forefinger on the left hand and push down the side of the fork to get it through.

IADLs. As most of the participants were nearing a modified but generally independent approach to dressing and bathing at the 2-week mark, most required no assistance with ADLs but significant assistance with IADLs. Despite increased independence with self-feeding, many of the participants were still receiving assistance for meal preparation, such as family providing meals or the participants modifying meal preparation needs.

Another area many of the participants stated receiving assistance with was housekeeping, most notably laundry. “My daughter does my laundry, and she’ll change my bed. I have had a lady, she came in and cleaned.” Several of the participants found themselves returning to IADL activities throughout this reporting period, such one who stated,

> I can load and unload the dishwasher. I can load and unload the washer and dryer, and I can run the vacuum with my left hand in the kitchen and the living area. You can do most things that you want to. Most things that you really want to do you can figure out a way to get them done without getting yourself in trouble.

Another area of assistance reported was driving. “That’s been one of the worst parts,” stated one participant. Many of the participants were released to drive by the 4-week mark, despite difficulty with tasks such as turning the key in the ignition (primarily right-sided surgery) or opening the door (left-sided surgery). Others reported self-limiting for safety concerns: “Until I get good use of my right arm, I’m not going to [drive], because I don’t want to endanger myself or anybody else. So, I just feel like it’s better if I just be driven around.”

Despite limitations in driving, the participants reported being much more active in weeks 3 and 4 as compared to the first 2 weeks immediately following surgery. All of the participants reported returning to church, completing errands, and returning to social activities. Some reported less desire to get out, “I thought, oh, I really should go shopping, but I decided not to. It wasn’t worth the effort of getting in the car, driving, and being tired.” Another reported decreased motivation to get out in public because of the “hassle”: “Just how immobile you feel sometimes, or little simple things you feel like, ‘Boy that took me twice as long to do that as it should have.’ Just dressing and undressing, just little things like that.”

Many of the participants stated thankfulness for assistance, while others worried they were becoming an encumbrance: “She stops in about every other day for me. She’s gone back to work and she’s got a lot of things that she has to deal with and so I told her, ‘There’s no need to come every day’.” Another participant stated, “I don't want to wear everybody out.” Despite concerns, assistance was recognized as important to ensure compliance with their surgical protocol: “I want to do more with my arm than I’m really supposed to do.”

Interview 3

For the final interview, most of the patients had progressed to the early strengthening phase, with some having progressed to the moderate strengthening phase. The overall themes were of progression during this interview. One of the participants summed up his experiences at 6 weeks postsurgery as, “I have some good days, and I have some bad days. But it’s doing all right, I can move it better.”

ADL and IADL progression. Sleep was a major area of improvement in this reporting period, likely because of decreased pain and discontinuation of the abductor sling. Most of the participants reported significantly improved sleeping since discontinuing the sling. Few were reporting difficulty with dressing tasks and few reported difficulty with upper body dressing, specifically with coats and jackets: “I can put my shoes, socks on, put my pants on. I can do all that, it’s just my outer shirt and my coat that I have trouble with.” In regard to ADLs and IADLs, a few of the participants reported already being more independent than before surgery: “Well before the surgery, it was really hard to move it around hardly at all, lift anything with it. I still can’t lift anything, but I know eventually I will.”

The participants mostly required some modifications and assistance with IADLs, such as opening a jar and lifting heavy objects. “I can’t pick up anything heavy but normal activities I’m okay. I can drive. I can load the dishwasher, the washing machine, run the vacuum. Normal activities I can do.” Those that required assistance from others often need help with tasks requiring driving or cleaning, and at times requiring assistance because of home set up. One participant stated,

> My daughter’s still doing my shopping. Doing my laundry. I just don’t feel like I can. Because our laundry is a good block away. I would have to load the car and drive over and I can’t lift that much yet, so yeah, she’s okay with doing that. And still have a cleaning lady. It’s really hard to vacuum.

All of the participants had been released to drive at this time, and the majority of the participants were driving frequently. However, driving was not always without modification.

> I’m using both hands as much as I can but gripping the steering wheel with my right hand, it gets to a point where I have to let it rest a little bit. Just getting in and out of the car, closing the doors, lifting the tailgate, things like that [require modification].

Along with the improvement in ADLs and IADLs, and with most of the participants returning to driving, there was also a large portion of the participants who were returning to more social activities. When asked about social life and relationships with others, one participant reported little change than before surgery: “I still do stuff with my [family], we went out to dinner. It did [limit my social life] in the first couple of weeks, but lately it’s been no different.” When asked if she felt more active the last few weeks, she responded, “Well, definitely [more] than the first couple weeks, two or three anyway, because I didn’t want to go anywhere.”

Overall, the participants reported satisfaction with progress: “Yes, I’m pleased with my progress, a little impatient, but pleased anyway.” Finally, one participant stated, “I can tell a difference in it practically every day.”

Discussion

As indicated in the literature review, preoperative education is linked with decreased anxiety (Flanigan et al., 2015). The importance of preoperative education is further underscored by the contributing role preoperative expectations play in patients’ overall satisfaction (Neuprez et al., 2016). Preoperative expectations of patients specific to SA have been said to include relief of pain (both nighttime and daytime), improvement in self-care tasks, and specific IADL tasks, such as driving (Rauck et al., 2019). However, little has been researched regarding what is important for providers to discuss during preoperative education. This study outlines challenges reported by SA patients and provides a brief insight into the return to ADLs and IADLs following surgery. Understanding patients’ perspectives in initial recovery may be helpful to provide preoperatively in order to set realistic expectations regarding recovery. The results of this study suggest that beneficial changes could be made in terms of preoperative education for individuals undergoing SA. More specifically, it appears that patients undergoing SA, as well as their caregivers, may benefit from preoperative education based on:

caregiver support, one-handed techniques and other modifications for ADL and IADL performance, and issues related to sleep throughout the recovery process.

Assistance and modifications were common themes in the first 4 weeks following surgery. Many of the patients noted limitations and/or used modifications for dressing, bathing, and hygiene tasks prior to surgery, and they reported these compensations helpful for maintaining compliance with surgical precautions. However, now the participants had an additional challenge in donning and doffing the abductor sling, as well as more limited use of the surgical elbow and hand because of positioning requirements. These increased challenges not only reduced independence in the home but often limited other occupations occurring outside the home for the participants.

Nearly all of the participants were surprised but thankful for the support and assistance received from family and friends. These findings are unsurprising, as many researchers have documented caregiver support as an important factor for discharge destination and an improved ability to return to ADLs (Theiss et al., 2011). However, including the caregiver in the preoperative education class, or providing a caregiver education class solely focused on the caregiver role, may be an important step to facilitating better recovery outcomes. Education for caregivers that includes limitations and potential modifications may also facilitate greater compliance in the home environment.

Research has frequently shown the importance of sleep (Tester & Foss, 2018), as well as the relationship between sleep hygiene, mental health, and pain (Björnsdóttir et al., 2014). Impaired sleep is not a new concept for patients with OA or musculoskeletal chronic pain, as researchers have indicated sleep disorders as an important patient problem (Björnsdóttir et al., 2014; Pickering et al., 2016). Nocturnal pain and decreased sleep quality, such as fragmented sleep and sleep disturbances, are commonly found in patients with shoulder dysfunction (Morris et al., 2017). These findings are consistent with the frequent report of decreased sleep by the participants in this study, with many expressing difficulty finding a comfortable position and/or being woken up frequently because of pain. However, sleep is often not addressed as it is thought to be a secondary concern.

Occupational therapists have long identified sleep as an essential component of health (Meyer, 1922) and recognize the relationship between sleep and occupational participation and performance (Gentry & Loveland, 2013). However, the results of this study suggest that occupational therapists must address sleep impairments as a current challenge and not a secondary concern. Changes to preoperative education, including addressing potential sleep issues with both patients and therapists, is the first step to improving patient recovery and facilitating return to meaningful occupation. In addition to providing a vital role in the preoperative stage, occupational therapists also possess the understanding of arthroplasty, environment, routines, and other factors that impact sleep (Tester & Foss, 2018). Therefore, postoperative patients may benefit from occupational therapists providing direct interventions that address various compensatory strategies that may enhance one’s ability to sleep.

The literature on SA is plentiful in terms of surgical procedure, long-term outcomes, and appropriate recovery protocols. However, little research has been focused on patient recovery experiences or needs during initial recovery. This study’s purpose of understanding how patients experience ADLs and IADLs during the first 6 weeks following SA addresses one of the numerous gaps in the literature regarding patient experiences. Though this study only followed those discharging to a home setting, it is anticipated that managing expectations of patients prior to SA, as well as throughout the rehabilitative process, is also likely to improve rehabilitative success. This research highlights the needs of participants preoperatively and postoperatively. In addition, this study provides specific insight into recovery regarding when ADL and IADL improvements may occur, which may increase patient satisfaction and contribute to greater satisfaction with arthroplasty recovery. Finally, by providing insight into the recovery process, these results may allow health care professionals to better assist patients during the first few phases of SA recovery.

Limitations

This study is not without limitations. As with any qualitative research, there is a risk of researcher bias affecting the results. The primary researcher conducting the interviews in this study is an occupational therapist who was involved with the participants' care while they were in the hospital. However, the primary researcher had no data on the company or therapist with whom each participant followed up and was not involved with any of the participants' therapy after hospital discharge. Another limitation of this study is the inclusion of only one hospital with one version of the modified Neer's protocol. Length of hospitalizations as well as modifications in other protocols, though likely similar, could result in changes in recovery for patients. In addition, each participant discharged to a different home health care and/or outpatient therapist who may have interpreted the protocol differently. Finally, little is known regarding the participants' compliance with the protocol at home, which may have influenced perceived independence levels at each interview and phase of recovery.

Implications for Future Research

Despite the stated limitations, this study serves to highlight a patient's subjective perceptions of early rehabilitation following SA. While this study is representative of only 12 participants, it could provide insight for a variety of therapists to guide patients. Future research into recovery following SA could include a variety of surgeons, protocols, and facilities to further expand understanding of patients' experiences. In addition, qualitative research to more specifically identify when patients typically regained the ability to complete ADLs and IADLs independently following surgery may help reduce patients' frustration and anxiety during rehabilitation by providing them additional insight into the typical progression of ADL recovery.

The participants frequently reported relying on assistance from friends and family and often noted appreciation for the reported assistance. It is not surprising that caregiver support at home has been identified as a significant predictor of discharge following hip and knee total joint arthroplasty, as well as an important part of recovery and transition to home (Churchill et al., 2018; Halawi et al., 2015). However, the level of support required after arthroplasty in general, let alone SA specifically, is a largely under researched topic.

In addition to research needed on levels of assistance required following surgery, the caregiver's perspective following arthroplasty remains relatively ignored. One study by Zadzilka et al. (2018) noted that caregiver burden following knee arthroplasty was significantly improved at 1 month versus 1 year following surgery. Other researchers identified the importance of caregivers having a support network following surgery (Churchill et al., 2018). Future qualitative studies, including studies interviewing the caregiver, may provide more accurate insight into the recovery process of those who are dependent on others for assistance in the first few stages of rehabilitation as well as an understanding of caregiver burden. A caregiver perspective, in addition to the patient's perspective, may provide some insight into a patient's actual needs, as well as validate the participants' statements regarding assistance required.

Finally, sleep remains a research topic of necessity following SA. In this study, sleep was consistently reported to be an area of concern, and ample research notes its importance to health. However, little has been published regarding the treatment for acute sleep interruptions following surgery. Occupational therapists, specifically, could benefit from research on the modifications and adaptions to roles, habits, and behaviors appropriate to ensure quality sleep participation to facilitate occupational engagement.

There is ample research regarding quantitative outcomes following SA but little regarding patient and caregiver experiences throughout recovery. This leaves many areas yet to be explored. Of the research noted, the majority reviews long-term results, following up at 1 year or greater time periods. More research regarding recovery and acute progress is important to provide appropriate education to therapists, patients, and caregivers.

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