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A Case Study Report:

Occupational Therapy for an Older Adult with Shoulder Impingement Syndrome

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Note: This document describes a Capstone Dissemination project reflecting an individually planned experience conducted under faculty and site mentorship. The goal of the Capstone Experience is to provide occupational therapy doctoral students with unique experiences whereby they can demonstrate leadership and autonomous decision-making in preparation for enhanced future practice as occupational therapists. As such, the Capstone Dissemination is not formal research.

Abstract

Shoulder impingement syndrome can be very painful and debilitating for persons with this diagnosis. This case study report describes occupational therapy services implemented for a patient diagnosed with shoulder impingement from an injury that occurred more than 30 years prior. The patient demonstrated decreased range of motion and increased pain especially with overhead reaching occupations. The patient described in this case study was a retired surgical nurse who had no previous experience with occupational therapy. During evaluation and initial treatments, the patient was quite skeptical about the benefits of receiving occupational therapy services. As therapy progressed, the patient verbalized the benefits and improvements she had seen from occupational therapy. At discharge, the patient met her pain and instrumental occupations of daily living goals. Treatment approaches were based upon the biomechanical model of practice as well as the Canadian model of occupational performance. Since the Canadian model of occupational performance is client-centered, this model of practice was important to the treatment of this patient due to her expressed goals and concerns.

Introduction

Background Information

In December 2007, a 65-year-old female presented to Dr. Davis with a several month history of left shoulder pain. She dated this injury back to almost 30 years ago when she was tubing with her children and hit her shoulder on a chunk of ice. She complained of pain with overhead activities and pain while at rest. X-rays were completed in December 2007 which suggested osteoarthritis (OA) of the acromioclavicular (AC) joint. On this same date, an MRI was ordered to be done in January, 2008. The MRI found glenohumeral loose bodies, OA of the AC joint, medial and lateral impingement, as well as interstitial tearing of the rotator cuff. According to Burkart and Post (2002) impingement is “the encroachment of the acromion, coracoacromial ligament, coracoid process, and acromioclavicular joint on the subacromial tissues that pass beneath them as the greater tuberosity passes below during flexion and abduction” (p. 1376). At this time, Dr. Davis referred the patient onto Dr. Patel for his recommendations and treatment.

During Dr. Patel’s examination, the patient was found to be positive for Hawkins sign and had pain at the extremes of internal rotation. The Hawkins sign causes pain when patients have impingement syndrome (Pappas et al., 2006). She did not feel overly disabled and was not ready for surgical intervention. Dr. Patel recommended that she try conservative treatment for six weeks consisting of anti-inflammatory medication and physical/occupational therapy protocol for impingement syndrome. If the six weeks of conservative treatment failed, Dr. Patel offered her a subacromial corticosteroid injection at her follow-up appointment or arthroscopic intervention.

Model of Practice

Trombly's (1995) biomechanical model of practice is used to treat persons who have limited range of motion, decreased strength, decreased endurance, edema, and structural instability. Many evaluation and treatment techniques are utilized with the biomechanical models of practice. Some common assessments include manual muscle testing and range of motion measurements. Treatments can consist of stretching, strengthening, and endurance occupations (Seidel, 2003).

The Canadian model of occupational performance focuses on client-centered practice and occupational performance (Department of National Health and Welfare and Canadian Association of Occupational Therapists, 1983). According to Law, Baptiste, and Mills (1995), client-centered practice is an approach that embraces philosophy of respect and partnership with those receiving occupational therapy services. A common assessment used with this model of practice is the Canadian Occupational Performance Measure (Law et al., 1990). This assessment addresses the following areas: self-care, productivity, and leisure.

Scientific Evidence for MOP

Treatments using the biomechanical model often include rote exercise; therefore many studies have been conducted about purposeful activity versus rote exercise. Many of these studies have found that participation improves with purposeful occupations rather than rote exercise (Riccio, Nelson, & Bush, 1990; Kircher, 1984). The use of physical agents is also commonly done when using the biomechanical model (Kielhofner, 2004). The use of physical agent modalities is supported by the American Occupational

Therapy Association if modalities are used as an adjunctive method in conjunction with or in preparation for engagement in occupations (American Occupational Therapy Association, 2003).

In the *Guidelines for Client-Centered Practice of Occupational Therapy* (Department of National Health and Welfare and Canadian Association of Occupational Therapists, 1983):

The role of the occupational therapist is to facilitate the individual's engagement with his environment. An essential component of the therapeutic relationship is the therapist/client interaction and the exchange which occurs throughout the learning situation created by the occupational therapist. (p. 10)

Also, Principle 3 of the Occupational Therapy Code of Ethics states, "Occupational therapy personnel shall collaborate with recipients, and if they desire, families, significant others, and/or caregivers in setting goals and priorities throughout the intervention process..." (American Occupational Therapy Association, 2005, p. 640).

Rationale for MOP with this Case

The patient described in this case study demonstrated decreased range of motion, decreased strength, and pain in her shoulder therefore warranting use of the biomechanical model. She is also retired and expressed to the occupational therapy student that she wanted to function in daily life without pain and have normal movement patterns. Since these were goals she wanted to achieve by participating in occupational therapy, it warranted the use of the Canadian model of occupational performance because this model has a client-centered component.

Innovativeness/Creativity

The patient's injury occurred more than 30 years ago and following this injury she was able to continue working as an emergency room nurse without problems. It was not until she retired that she began to notice pain in her shoulder and noticed using compensatory movements. This patient was employed in the medical field for numerous years but during the initial evaluation she expressed skepticism about the benefits and role of occupational therapy. Therefore, it was important for the occupational therapy student to be creative with treatments so the patient recognized the usefulness and benefits of occupational therapy.

Evaluation

The patient was referred to occupational therapy on January 22, 2008 and was evaluated on January 28, 2008. The initial occupational therapy evaluation consisted of observation, interview, and standardized testing.

Upon entering the outpatient clinic, the patient had slouched posture with slight scapular abduction bilaterally. The only significant diagnosis in her past medical history was hypertension. She is a retired surgical nurse and is right handed. She reported 5/10 pain while completing tasks using her left arm. She reported difficulty with washing across her body and fastening her bra. Both of these occupations required minimal assistance. The patient also stated she had difficulty completing overhead tasks (e.g., removing items from cupboards, hanging laundry, lifting grandchildren) because increased time, minimal to moderate assistance, and/or technique changes were needed.

Passive range of motion and active range of measurements were taken bilaterally. Passively she was within normal limits with flexion, abduction, extension, and external

rotation bilaterally (American Academy of Orthopaedic Surgeons, 1965). Her left shoulder passive internal rotation measurement was 58°. In her left shoulder she actively demonstrated 140° of flexion, 120° of abduction, and she could only reach her waistband behind her back. Manual muscle testing was also completed bilaterally (Beasley, 1961). She demonstrated 5/5 for flexion, and 4+/5 for internal and external rotation in her left upper extremity. The patient also tested positive for Hawkins provocative test which indicated impingement syndrome in left shoulder.

Goal Setting

Goals Identified by the Patient

1. Long Term Goals
 - a. Have less pain
 - b. Do overhead tasks with decreased time and change of technique
 - c. Complete gardening independently. At time of evaluation, the patient required minimal to moderate assistance secondary to the lifting, pushing, and pulling.
2. Short Term Goals
 - a. Be able to thoroughly wash across body independently after 3 weeks
 - b. Be able to fasten bra independently after 3 weeks

Occupational Therapy Goals

The patient was to attend occupational therapy two times a week for six weeks and during this time the following goals were addressed by occupational therapy.

Home Exercise Program

1. Justification- Since the patient was only attending therapy two times a week, it was important for her to complete exercises at home for future attainment of goals of decreased pain and improved ability to complete activities of daily living.
2. Goals
 - a. LTG- The patient will be independent with updates and final home exercise program.
 - b. STG- The patient will be independent with home exercise program and will report doing exercises at least two times a day.

Pain

1. Justification- The patient expressed decreased ability to complete tasks secondary to intense pain.
2. Goals
 - a. LTG- The patient will report pain 1/10 pain while completing overhead tasks (e.g., retrieving items from kitchen cupboards) that are 1.5 above shoulder height.
 - b. STG- The patient will identify two strategies to reduce pain.
 - c. STG- After six visits, the patient will report pain less than or equal to 2/10 while at rest.

Range of Motion

1. Justification- The patient reported minimal assistance to fasten bra behind her back and to wash across body. She also needed minimal to moderate assistance to retrieve objects out of cupboards that she was once able to reach.
2. Goals
 - a. LTG- Pt will demonstrate within functional limit active range of motion in left shoulder flexion, internal and external rotation, and abduction so patient can complete leisure tasks (e.g., gardening, playing with grandchildren) independently.
 - b. STG- Pt will increase left shoulder active range of motion (flexion, abduction, extension, internal rotation) by 10° each for improved ability to wash across body and fasten bra.

Interventions

During occupational therapy sessions, the patient's left shoulder was passively ranged by the occupational therapy student in all planes. Also, the patient completed self-stretches focusing on internal/external rotation as well as flexion. The previous occupations mentioned were completed to improve the patient's active range of motion. While in the outpatient clinic, the patient was educated on the importance of good posture (e.g., shoulders back and back straight) as well as proper body mechanics when completing occupations.

Since the patient expressed she had increased pain, difficulty, and using compensatory movements when completing overhead tasks, the occupational therapy student had the patient complete several overhead occupations during therapy sessions.

While standing, the patient retrieved items such as cups, plates, and a coffee canister from a 6' shelf and then returned the items. The patient was approximately 5' 5 inches tall so she had to reach approximately 1.5 feet above shoulder height. This occupation simulated the patient retrieving items from her cupboards at home. The patient also completed a hanging laundry occupation which is further discussed in the occupational analysis section. Other occupations completed during therapy sessions were simulating fastening a bra, using a hand towel to wash across her body, and strengthening with thera-band.

Following each therapy session, the patient was instructed to practice completing the occupations done in the outpatient clinic. For example, at home the patient practiced retrieving items with a variety of weight from cupboards at varying heights. Also, the patient was instructed to use left arm to pull up pants in the back and/or thread belt because this required the same motion as fastening a bra. The patient was also given handouts with all self-stretches as well as strengthening exercises to be completed at home.

Occupational Analysis of One Occupational Treatment Session

Occupational Form

For the occupation of "hanging towels," the important occupational forms included green bungee cord approximately 7 feet high which was attached to the wall on one end and occupational therapy student holding up other end, colored clothes pins, 4 hand towels in the hand of occupational therapy student. The simulated clothesline was in the outpatient clinic at the Institute for Orthopaedic Surgery. The occupational therapy student provided encouragement to the patient during the occupation.

Occupational Performance

Prior to the start of the occupation, the patient stated this would be good experience because since attending therapy she had not tried hanging clothes up on her clothesline in her basement.

She started the occupation by taking two clothespins into her hand from the occupational therapy student. She then took a white hand towel from the student. She used her left hand to hold one corner of the towel against the line while she used her right hand to clip the clothespin on the corner of the towel. She then released her grasp on the towel and the clothespin. The patient then grasped another corner of the towel with her left hand and brought it up to the clothesline. After this had been completed, she used her right hand to clip another clothespin onto the towel and then released her grasp.

After one towel had been hung, the occupational therapy student asked if she was experiencing any pain. The patient stated she was not and would like to try to hang another towel. She retrieved another towel from the arm of the occupational therapy student and two more clothespins. She hung her second towel next to the first towel already hanging on the line. She used the same procedure as described before: holding towel with left hand against clothesline and clipping clothespin with right hand. She continued to hang up a total of four towels.

The occupational therapy student asked the client if the task was difficult and what she would do different next time. The patient stated she was surprised with her ability to complete the occupation and next time she would try heavier clothing items.

Meaning and Purpose Inferred

The patient was highly motivated to complete the simulated hanging clothes occupation successfully. She was also motivated to complete overhead tasks without pain and without compensatory shoulder movements so she could achieve her long term goal of successfully completing overhead tasks without pain and with natural shoulder movements. During one therapy session the patient stated, "I never really saw a purpose for therapy until it happened to me."

Impacts

The patient had an impact on the clothesline as she hung towels with clothespins on it. She also had an impact on the towels and clothespins as she removed them from the occupational therapy students hand and put them on the clothesline.

Assessment

During the occupation, the patient demonstrated normal movement patterns when reaching to hang the towels on the line. A typical movement pattern would consist of shoulder flexion and slight abduction. During prior sessions, the patient would use compensatory movements by abducting, externally rotating, and flexing her shoulder to reach overhead. The patient also did not report an increase or decrease in pain during this occupation. The occupational therapy student recommended that next time the patient should use more items and/or heavier items.

Adaptations

Adaptations included increase range of motion at her shoulder, decreased pain when moving her shoulder, and increase awareness of the value of participating in an occupational therapy treatment regime. Adaptations occurred by virtue of the fact that

the patient learned that she was able to hang up items on a clothesline without an increase of pain and time. She was also able to perform the occupation using typical movement patterns.

Re-synthesis

For a follow-up occupation, the occupational therapy student planned on having the patient hang heavier items on the line such as shirts and/or pants; as well as, have the patient hang up more items. This occupation would require the patient to complete an overhead occupation and compare pain and technique found when hanging lighter and fewer items.

Outcomes

Goals Achieved

1. Home Exercise Program- The long term and short term goals were met. At every therapy session the patient reported completing her home exercises daily. Three weeks after being discharged, the patient was contacted by the occupational therapy student. At this time, she reported continuing to do her exercises typically once a day.
2. Pain- The long term and short term goals were met. She reported 0/10 pain while at rest and 1/10 while completing overhead tasks.
3. Range of Motion- All goals were met. The patient demonstrated within functional limits active range of motion in all planes. At discharge, the patient's active range of motion measurements were as follows: flexion 167°, abduction 171°, and she could internally rotate to 2 inches above waistband.

She reported being able to wash across her body as well as fasten her bra independently.

Changes on Standardized Assessments

The patient attended 11 out of 12 sessions of occupational therapy. At discharge, her active range of motion measurements were within functional limits. Her pain had significantly decreased while at rest and when using left arm. Manual muscle testing scores were the same at evaluation and discharge. Lastly, she tested positive for the Hawkins provocative test which indicates subscapularis impingement. Although the impingement continues to exist, the patient is functioning without pain.

Inferred Meanings and Purposes

The patient initially was skeptical about the role and benefits of occupational therapy. As therapy sessions progressed, the patient reported, “I never really saw the purpose of therapy, until now. I am really seeing improvements in my shoulder.” She recognized her improved ability to complete occupations that were very difficult and/or painful for her to complete prior to participating in occupational therapy. The patient expressed pleasure about her improved ability to complete overhead tasks without asking for help from her husband. It was very important to this patient to be independent with occupations she was once able to perform without the help of others. This patient expressed concern about being a burden to others due to her need for help with some occupations, especially overhead reaching.

Patient’s Report on Progress

Three weeks after discharge, the patient was contacted via phone by the occupational therapy student. The patient reported hanging clothes on her clothesline in

her basement without an increase of pain or a change in technique. She also stated that she was able to retrieve items from cupboards easier. The patient stated, "I was always compensating when I did things prior and would have to stop and adjust. Now after therapy I can naturally do the things I want to do." The patient also reported that she did her home exercise program daily. She said, "I can tell when I need to do them (exercises)." The patient was very excited about her ability to perform overhead tasks without pain as well as being able to fasten her bra.

At her follow-up visit with Dr. Patel, he offered her rechecks as needed and told her to continue her care as she has been with exercises at home. The patient stated she was satisfied with this plan.

Conclusions

Discharge Recommendations

1. Home Exercise Program- Recommend that patient continues to do her home exercise program twice daily to maintain strength and flexibility she had gained.
2. Pain- Recommend that patient use heat/ice, good posture, and exercises to keep pain at a minimum. Recommend the patient follow-up with Dr. Patel if sudden increase of pain occurs that does not resolve.
3. Range of Motion- Recommend patient continue to do stretching as well as continue to use left upper extremity to complete activities of daily living and overhead reaching task.

Outcomes Related to the Identified Models of Practice

After participating in occupational therapy, the client improved her active range of motion measurements. This goal was achieved using a variety of methods: passive range of motion and therapeutic occupations. According to Kielhofner (2004), “activity may be progressively modified to intensify task demands that will increase musculoskeletal capacity” (p. 86). The first several occupational therapy sessions focused on range of motion then were progressed to completing occupations. The occupations were graded based on the ability of the patient. Fastening a bra and washing across her body were prioritized first because the patient had moderate difficulty completing these occupations. The patient expressed maximal difficulty with overhead tasks so this became the primary focus once the previous occupations had been mastered. Overhead tasks were modified by increasing the height of the task, the weight of the items being retrieved and/or replaced, and the duration of the occupation. All of this was done to intensify the task demands.

This case study was also based on the Canadian model of occupational performance therefore the patient’s goals were the primary focus of every session. Each therapy session was tailored to the unique difficulties/problems identified by the patient. According to Law, Baptiste, & Mills (1995), several key concepts of client-centered practice are individualized therapy, respect for patients’ decisions, providing opportunity for patients to succeed, and allowing patients to participate in therapy. After participating in occupational therapy, the patient reported being able to fasten her bra, wash across her body, as well as complete overhead tasks independently. The patient reported she no longer felt she had to rely as much on her husband to help her complete overhead reaching tasks and this made her feel she was less of a burden.

Implications of the Case for Research

Through this case study, it was found that conservative treatment helped to alleviate the pain and loss of range of motion experienced by a patient diagnosed with impingement syndrome. Further research needs to be conducted in this area to compare patient outcomes with conservative treatment versus surgery. Since there are a variety of factors that can contribute to impingement syndrome, treatment options and outcomes need to be researched for each type of impingement.

This case study was innovative because there has not been a lot of research done with this population especially in occupational therapy. It was found through this case study that occupational therapy services were successful in alleviating this patient's pain and decreased ability to complete occupations of daily living.

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