A case study report : occupational therapy for an adult male truck driver in a return to work program

Melissa A. Hasenmeier
The University of Toledo

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Occupational Therapy for an Adult Male Truck Driver in a Return to Work Program

Melissa A. Hasenmeier

Faculty Mentor: Martin S. Rice, Ph.D., OTR/L

Site Mentor: William Benoit, MBA, MOT, OTR/L

Department of Occupational Therapy

Occupational Therapy Doctorate Program

The University of Toledo Health Science Campus

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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

An industrial rehabilitation program is structured and goal-oriented in design to help people identify work capacities, regain functional skills and return to work after an injury. This program is made up of a multi-disciplinary team that addresses all aspects of the client. The holistic approach by occupational therapy allows for not only the physical aspects of the client to be addressed, but the psychological aspects too. This case study report describes occupational therapy services in an industrial rehabilitation program for a 50- year-old male truck driver. The client has an extensive and interesting work and past medical history. He was referred to the industrial rehabilitation program following an ankle injury.

The present case study report is unique in describing a) an industrial rehabilitation method of delivery; b) a focus on psychological barriers; c) a focus on return to work; and d) reports of occupational therapy effectiveness by the client. This case study suggests the need for incorporating a variety of models of practice in this setting to address the effects of significant history of trauma and work related injuries in order to return to work successfully.

Introduction

Background Information

On February 2, 2007, a 50-year-old male truck driver sustained a fracture of his left ankle, as he slipped on the ice, climbing out of his truck during a routine stop. He was taken to the emergency room. An x-ray was taken and a closed fracture of the lateral malleolus of his left ankle was found. The client underwent a surgical procedure to repair the broken bone. After surgery, the client's left ankle was placed in a cast. The client returned home, but continued to have complications with his left ankle.

Three days after his surgery, the client returned to the emergency room because his left foot began to turn blue. The cast was loosened and the client returned home. About a month later, in March, 2007, the client returned once again to the emergency room with a swollen left foot. A culture of his left foot was taken and was positive for a staph infection. The client was taken to surgery to remove the metal plates in his ankle.

In June, 2007, a MRI was taken of his left ankle. The client was diagnosed with avascular necrosis (AVN), a disease resulting from the temporary or permanent loss of the blood supply to the bones (The Merck Manual, 2003). At this time, the client attempted physical therapy in an outpatient facility, however, therapy was causing too much pain and the client could not finish all the therapy sessions. Later on, in October, 2007, the client underwent another surgical procedure for a bone biopsy to be taken. The MRI in June and the bone biopsy were completed, both confirming the diagnosis of AVN. The client was instructed to wear an ankle-foot orthotic (AFO) on his left ankle. In December, 2007, the doctor referred the client to industrial rehabilitation and work conditioning.

The client has been a truck driver for 32 years. During this time, the client reported having been involved in eight motor vehicle accidents that were not caused by him directly. A monumental accident that has affected the client occurred in January, 2005, in which he was involved in a head-on collision with a car on an icy day. This collision caused fatalities of two teenage girls and injuries to the client's head, neck, back, and shoulder, leaving the client off work for 3 months. This accident inevitably caused the client to be fearful of returning to work as a truck driver.

With time, the client was able to return back to work after this accident. The client stated that he had stopped smoking because of his injuries from the accident; however, the day he returned back to work, he started smoking again. The client stated, "I climbed into the truck, fired the truck up, became anxious, climbed out of the truck, got in my car, drove to the store and bought a pack of cigarettes, and went home." The client smokes cigarettes as a way to cope with his anxieties, even until this date.

Model of Practice

According to James (2003) the biomechanical frame of reference can be used for treatment of clients with "activity limitations due to impairments in biomechanical body structures and functions, including structural instability, decreased strength, limited range of motion (ROM), and poor endurance" (p. 240). The biomechanical frame of reference addresses the impairments of the client, allowing for an increase in occupational performance to occur. Assessments that can be used with this frame of reference include: joint range of motion (Killingsworth & Pedretti, 2006b), manual muscle testing (Killingsworth & Pedretti, 2006a), and grip strength (Mathiowetz, Weber, Volland, & Kashman, 1984).

The Canadian Model of Occupational Performance "is based on the belief that the individual is a fundamental part of the therapeutic process" (Department of National Health and Welfare and Canadian Association of Occupational Therapy, 1983). As described by Toal-Sullivan and Henderson, "Client-centered approaches are promoted as the means to engage individuals in their rehabilitation and thereby achieve better and more relevant outcomes in terms of function and client satisfaction" (p. 211).

The Life Style Performance Model (Fidler, 1996), "provides a way of describing and examining the interacting, multiple dimensions of doing and living from an organized, holistic framework applicable to all ages, cultures, and persons" (Fidler, 1996). This model, also addresses four components (sensory motor, cognitive, psychological functions, and interpersonal skills) that reflect on the client's developmental structure (Fidler, 1988).

Rationale for Model of Practice

The client in this case study had been off work for a year. He demonstrated a decrease in left ankle strength and range of motion, along with an overall decrease in endurance; therefore, the use of the Biomechanical model of practice was used. In order to develop a treatment plan for the client to return back to work, the Canadian Model of Occupational Performance was implemented to gain incite about the client's specific job tasks and goals for the vocational rehabilitation program. In collaboration with the previous stated models, the Life Style Performance Model was used to address the underlying anxieties of the client as related to being off work for a year, having multiple surgeries, and being involved in multiple motor-vehicle accidents at work. Threats to healthy occupations can cause a variety of dysfunctions such as denial, depression, and anxiety; therefore the deficits should also be addressed in order for the client to achieve a lifestyle of choice.

Innovativeness/Creativity

Overall, this client has an interesting history. He has a history of multiple motor vehicle accidents while working as a truck driver which presumably has caused him to have high degrees of anxiety. He also has an extensive past medical history of heart conditions. However, he was brought to vocational rehabilitation for his current injury of complications from a fractured left ankle. He has been off work for a year from this injury and would like to return to work with his same employer. It is also interesting in that the client did not identify a goal for reducing his anxiety until this idea was discussed with the occupational therapy student. This client requires occupational therapy to be innovative and creative in a) addressing the client's lack of strength and range of motion in his ankle in, b) increasing the client's overall strength, endurance, and tolerance, c) developing a work simulation that addresses the client's specific job tasks as a truck driver, and d) address the psychosocial barriers for returning to work.

Evaluation

The client was referred to vocational rehabilitation on December 28, 2007. The functional capacity evaluation (FCE) was completed on January 29, 2008.

The client currently lives in a ranch-style house with his wife of 16 years and their miniature daschund. They have two grown children and two grandchildren. He reported dropping out of high school in the 12th grade. The client reports he does not exercise regularly, but enjoys bow hunting and driving his jeep, which is automatic, in the mud. He currently participates in these activities. He reports smoking two packs of cigarettes per day and drinks alcohol very seldom. He had two previous myocardial infarctions with subsequent placement of nine cardiac stents. He occasionally complains of chest pain, shortness of breath on exertion, and high cholesterol (treated by medication). He currently has been complaining of difficulty

sleeping with nightmares in which he grabs his biceps leaving bruises, increased anxiety when driving his vehicle, and flash backs from the accident in 2005.

The client stated he is able to perform bathing, dressing, grooming, shaving, and making beds without difficulty. He reports minimal difficulty with driving, preparing meals, vacuuming, mopping, cleaning bathrooms, performing his hobbies, doing car maintenance, and laundry. He has severe difficulty performing any yard work at this time.

The critical job demands of being a truck driver as reported by the client are a) no lifting except for the drop and hook, and the hood of his truck for truck inspection, b) infrequent crawling, c) occasional climbing into truck, d) occasional overhead reaching, e) maximum drive time of 45 minutes at a time, and f) use of shoulder for cranking trailer up and down.

The client completed the written tests: McGill Pain Questionnaire (Melzack, 1975), Oswestry Disability Index (Fairbank, Couper, & Davies, 1980), and Spinal Function Sort (Matheson, Matheson, & Grant, 1993). For the McGill Pain Questionnaire results, the client had a total of 29/78 for the pain rating index, chose 12/20 words, and had 1/5 (mild) for pain intensity. For the Oswestry Disability Index, the client scored 24/50, was in the 48th percentile, and had a severe disability rating. For the Spinal Function Sort, the client had a rating of 141/200 and a functional level of light to medium (light = 125-135; medium = 165-175). The written test results indicated the client appeared severely disability focused and also pain focused, even though his reported 1/5 pain level is inconsistent with other scores on the Pain Rating Index. Scores on the Spinal Function Sort indicate his perception of abilities is in the light to medium category of work, which correlated well with his actual performance on the FCE.

During the FCE, the client scored a 10 on the Fall Risk Assessment Tool (FRAT) (Nandy et al., 2004), indicating he was at risk for falling. The client was provided a fall precautions sheet and fall prevention information was discussed. When the client's left ankle was palpated, there was tenderness in the following areas: anterior and posterior to the bilateral scars, inferior to medial and lateral malleolus, and to the middle of the left foot down toward the middle toe. Strength in the right ankle was within normal limits. Strength in the left ankle for dorsiflexion/plantar flexion was grossly 4-/5 and was pain producing. For eversion/inversion of the left ankle strength was 3+/5 and also pain producing. Table 1 provides a summary of the client's left ankle range of motion measurements.

The client did not perform the quarter mile Quick Fit Test secondary to antalgic gait. At this point of the FCE, the client reported a pain level of 3/10.

The client's bilateral grip strength was within functional limits. Prior to performance of material handling, the client participated in a repetitive motion test consisting of overhead reaches, half squats, and forward bends. The client was able to perform 20 repetitions of overhead reaching, without increase in shoulder symptoms, but he reported some increased symptoms in his right hip. The client also performed 10 forward bends with fingertips to his ankles. There was some unsteadiness noted during forward bending. He reported tight hamstrings and again some increased symptoms in his right hip and lower back. The client was able to perform 15 half squats with good body mechanics. He reported increased symptoms in his left lower extremity and ankle. During the squat/reach test, the client was able to perform a squat with his left knee at 90 degrees. Increased symptoms were reported after 30 seconds, but the client was able to perform a sustained squat for 90 seconds. He had moderate difficulty

rising from floor independently and used bilateral hands to push into his thighs and the shelf to rise.

The client participated in material handling activities using a 10 pound wooden box with handles 12 inches from the floor. The client achieved 25 pounds from floor to waist in the occasional range (1 – 33%; 1 – 32 reps), but unable to perform in the frequent range (34 – 66%; 33 – 200 reps) secondary to rapidly increasing symptoms in the right side of his low back and into his left lower extremity. The client was unable to push or pull the flatbed sled that weighs 42 1/2 pounds and requires approximately 28 pounds of force. Instead, a wheeled cart containing 125 pounds was used that required 8 pounds of force to push and pull. The client reported increased symptoms in his ankle with pushing and pulling the wheeled cart. The client was wearing an AFO brace during the material handling activities. The brace prevented any ankle dorsiflexion, making it difficult for the client to demonstrate normal movement patterns with pushing and pulling. The client reported 6-7/10 pain with these activities and was unable to perform in the frequent or constant range (67 – 100%; $\geq$ 200 reps).

The client's non-material handling activities fell within the occasional range, with the exception of reaching forward and overhead without weight, sitting, and walking. The client was able to tolerate greater distances and durations when not performing carry. He had no difficulty with repetitive arm movements without weight in the sitting position. He performed repetitive leg movements in the frequent range with his right lower extremity and in the occasional range with his left lower extremity. He performed the stair and ladder climb, but had increased symptoms with stair climbing. The patient completed 10 minutes of static standing while participating in the Valpar-8 Simulated Assembly. The client reported a 6/10 pain level. The client also stood with his left leg extended with weight placed on his left heel.

The client had a variety of strengths as determined by his performance on the FCE. His strengths included: cooperative with FCE, motivated to return to work, supportive family, within functional limits bilateral grip strength, good use of body mechanics, good work history, positional tolerances within normal limits for overhead lift, sitting tolerance within functional limits, and good right lower extremity strength.

The limitations as determined by the client's performance on the FCE were: decreased material handling for lift, carry, push, and pull, decreased positional tolerances for static stand and walk, decreased climbing abilities, decreased positional tolerances for bend, stoop, squat, kneel, and crawl, increased pain in low back when lifting weights greater than 25 pounds, decreased capacities for return to work at same job same employer, client appeared pain and disability focused per written tests, antalgic gait, decreased left ankle range of motion, increased fall risk per Fall Risk Assessment Tool, pain in left ankle, pain in right hip and right low back with some movements, and a history of two myocardial infarctions with multiple heart stent placements.

In early February, the client was visited by the industrial rehabilitation psychologist while at work conditioning. The client reported to the to psychologist about his nightmares containing images from the accident in 2005. The psychologist also determined the client had intrusive thoughts and images of the accident, exaggerated startle reflex, hypervigilance, jitteriness, and disturbed sleep. It was also determined that when the client encounters situations and stimuli that remind him of the accident or it's aftermath, he experiences exacerbations of his symptoms. The psychologist felt the client's symptoms would interfere with his ability to return to work and referred him to a psychologist that specializes in the treatment of problems of this type.

Goal Setting

Goals Identified by the Client

1. Long Term Goals
    a. Perform exercises that will help and will not make symptoms worse.
    b. Do work activities with less discomfort.
    c. Do hobbies with less discomfort.
    d. Return to work.
    e. Get rid of pain.
    f. Be able to stand/walk for longer periods of time.
2. Short Term Goals
    a. Decrease the pain.
    b. Increase stand/walk tolerance.

Occupational Therapy Goals

The client was originally scheduled to attend work conditioning 5 days a week for 4 weeks. After completing those 4 weeks, the client transitioned to work hardening. He was able to receive 8 weeks for work hardening. During this time, the client worked on the following goals addressed by occupational therapy.

Conditioning

1. Justification – The client demonstrated a decrease in range of motion and strength of his left ankle, a decrease in walking/standing tolerance and overall endurance which had an affect on his ability to return to work.

2. Goals
    a. LTG – The client will have a combined increase of 10 degrees in range of motion in left ankle by discharge.
    b. LTG – The client will tolerate 120 minutes of stand/walk by discharge.
    c. LTG – The client will have 5/5 strength throughout left ankle by discharge.
    d. STG – The client will have a combined increase of 3 degrees in range of motion in left ankle.
    e. STG – The client will tolerate 30 minutes of stand/walk.
    f. STG – The client will have 4/5 strength throughout left ankle.

Functional

1. Justification– The client demonstrated a decrease in material handling for lift, carry, push, and pull, a decrease in climbing abilities and a decrease in positional tolerances for crouch and squat.
2. Goals
    a. LTG – The client will demonstrate the ability to complete maximum lift from floor to waist with 40 pounds for 10 repetitions, occasional handling of 30 pounds to all levels (waist, shoulder, overhead) for 10 repetitions, and frequent handling with 25 pounds for 30 minutes to shoulder.
    b. LTG – The client will be able to climb up and down a set of truck steps (18 inches, 19 inches, 16 inches) 5 times throughout the therapy day.
    c. LTG – The client will be able to complete and tolerate the positions of crouch and squat while maintaining balance.

d. STG – The client will demonstrate the ability to complete maximum lift from floor to waist with 20 pounds for 10 repetitions, occasional handling of 15 pounds to all levels (waist, shoulder, overhead) for 10 repetitions, and frequent handling with 10 pounds for 30 minutes to shoulder.
e. STG – The client will climb up and down 1 flight of stairs 3 times per week without holding on to the handrail to bear extra weight.
f. STG – The client will complete 10 squats after each occasional circuit 3 times.

Pain

1. Justification – The client verbalized pain of 3 – 7/10 and moderate pain levels were observed during the FCE. As indicated by the written tests, the client is pain focused.
2. Goals
    a. LTG – The client will verbalize pain level of 2/10 or less 100% during the week.
    b. STG – The client will be able to state 3 ways of decreasing pain in left ankle.
    c. STG – The client will verbalize pain level of 6/10 or less 50% during the week.

Anxiety

1. Justification – The client complained of difficulty sleeping with nightmares in which he grabs his biceps leaving bruises, increased anxiety when driving his vehicle, and flash backs from the 2005 accident.
2. Goals
    a. LTG – The client will have a decrease in anxiety as reported by a decrease in nightmares, decrease in anxiety when driving, decrease in flashback, and as observed a decrease in bruising on biceps.
    b. STG – The client will be able to state 3 ways of decreasing anxiety.

Work Simulation

1. Justification – Many of the required job tasks of being a truck driver are currently difficult for the client. He will need to become successful at completing the tasks in order to return to work.
2. Goals
    a. LTG – The client will perform the work simulation including truck inspection, truck steps, driving, and cranking 3 – 5 days per week for 1 hour.
    b. STG – The client will perform the work simulation including truck inspection, truck steps, driving, and cranking 1 – 3 days per week for 30 minutes.

Interventions

The industrial rehabilitation setting is unique in that the client completes a routine at the start of each day at either work conditioning or work hardening. The client completed 15 minutes of aerobic exercise (bike, arm bike, treadmill), 9 minutes of shoulder or leg strengthening exercise, and 20 minutes of stretching each morning.

The client completed a functional goal of lift, carry, push, pull for frequent and occasional lift and then his maximum lift. The client also worked on standing and walking tolerance by working on the Bus Bench, BTE, Valpar-8 Simulated Assembly, walking on the treadmill, using the arm bike while standing, and completing his work simulation of driving the truck. The client also practiced walking up and down a typical flight of stairs without holding on to the railing. Once the client was able to complete a typical flight of stairs, he moved up to a 10 inch step and then a 19 inch step.

The client completed typical upper and lower extremity strengthening exercises to increase his overall endurance and tolerance. The physical therapist assisted with more specific

ankle exercises for range of motion and strength. He also would incorporate aerobic exercises by riding the bicycle and/or walking on the treadmill.

The client was also able to complete exercises in the pool three times a week for 30 minutes in which he focused on lower extremity and ankle exercises. He was also educated on stress management (i.e., daily exercise, decreasing caffeine and nicotine consumption, etc.) and relaxation techniques (i.e., deep breathing, relaxing thoughts, progressive relaxation, prayer, etc.) with ways to decrease pain (i.e., use of good body mechanics, ice packs, exercise, relaxation techniques). The client has also been meeting with the psychologist that specializes in anxiety and pain every few weeks.

Occupational Analysis of One Occupational Treatment Session

Occupational Form

For the occupation of "driving a truck," the important occupational forms included two rubber truck tires, a step ladder with three 10 inch steps, a driving simulation truck which included a steering wheel, clutch, break, and gas pedal (refer to Figure 1 for photographs of occupational form), BTE machine, and a timer. The two tires were located at both ends of the lifting station in the middle of the gym. The BTE was located in the upper right corner of the gym and the driving simulation truck was located in the side room across from the BTE. The occupational therapy student asked the client questions and provided feedback during the occupation. The client was provided a piece of paper with the steps of the occupation and a timer.

Occupational Performance

Before starting the simulated driving occupation, the occupational therapy student provided verbal instructions and demonstration of how the occupation would be

completed. The client was asked if he understood the directions and he answered “yes.”

The client began the occupation by starting his timer. He then walked from the side room to the middle of the gym to complete the truck inspection part of the occupation. He kicked one of the tires that were lying flat on the ground with his right foot two times while standing on his left foot. The client became “wobbly” when standing on his left foot. He crouched for 10 feet. After crouching for 10 feet, he stood straight up and kicked the other tire at the opposite end two times with his right foot. He then reached overhead with both upper extremities, grasped a wooden board, leaned back, and tugged at the board. He then crouched 10 more feet. He completed this task two times.

The client then walked to the side room, climbed up 3- 10 inch steps and sat on the truck seat. He simulated driving by shifting gears using the clutch, break, and gas while turning the steering wheel. He completed this for 5 minutes.

After the 5 minutes, he climbed down the 3- 10 inch steps and walked over to the BTE. He completed a cranking occupation for 30 seconds on the BTE.

He then walked back to the side room, climbed up the 3- 10 inch steps and sat on the truck seat. He simulated driving by shifting gears using the clutch, break, and gas while turning the steering wheel. He completed this for 10 minutes.

Throughout the occupation, the occupational therapy student encouraged the client and asked the client how his pain level was. The client verbalized increase in pain when using the clutch to shift gears, especially for the last 10 minutes. The student asked if the amount of time for this occupation was too much; the client verbalized, “The amount of time is okay, it’s going to take some time to get used to.”

Meaning and Purposes Inferred

The client recognized the importance of completing the "driving a truck" occupation in order to achieve his long term goal of successfully returning to work. The client was highly motivated to complete the occupation as it was a step closer to returning to work. He understood the idea behind kicking the tires, crouching, and pulling back the piece of wood as these were all daily tasks of inspecting his truck prior to driving the truck for a delivery. He also understood the BTE crank was a way to simulate the amount of force (determined by the client prior to start of the occupation) and time that was required to crank the handle to attach the trailer to the truck.

Assessment

During the occupation, the client verbalized an increase in pain when using his left foot to push in the clutch. The client's pain behaviors also increased as his limp became more evident and he had facial grimaces at times. The client completed this occupation at the end of his 4 hour work conditioning session. This could have been a reason for an increase in pain. The occupational therapy student recommended the client to continue completing the work simulation, but earlier in the day.

Adaptation

The client learned that he was able to climb up 10 inch steps and drive a simulated truck. The client also realized that the simulation of pushing in the clutch to shift gears caused an increase in left ankle pain. He became more aware that his tolerance for driving has decreased and that he would need more time in vocational rehabilitation program. It did not appear the client employed any anxiety reducing techniques to reduce the increased pain during the occupation.

Re-synthesis

The occupational therapy student planned on having the client complete this same occupation another day, but early in the day to assess the client's pain level.

Outcomes

At this time, the client has not been officially discharged. He completed 4/4 weeks of work conditioning and he is currently starting 7/8 week of work hardening. The client has then been approved for an additional 4 weeks of work hardening. Below are the client's current outcomes:

1. Conditioning – The first LTG was met. The client had a combined increase of 16 degrees in range of motion in left ankle. The second LTG was met. The client is able to tolerate 120 minutes of stand/walk. The third LTG was not met. The client's current strength in left ankle is 4 – 4+/5 throughout.
2. Functional – The first and third LTG were met. The second LTG was not met. The client can climb up and down a set of truck steps 1 time a day. The client's pain increased to a 7/10 when completing the truck steps. He currently is able to climb up and down the 3- 10 inch steps for his work simulation multiple times without an increase in pain.
3. Pain – The LTG was not met. The client currently verbalized a pain level of 4/10 or less 50% during the week. The client stated the 3 ways of decreasing pain in his ankle are: watching how he steps or stands, limit his standing time, use ice, and take Ibuprofen or Tylenol as needed.
4. Anxiety – The LTG was no met. The client reported he still has one nightmare a night and still becomes anxious when driving. However, the bruising on his biceps has

decreased and he reported a slight decrease in anxiety. The client identified cutting out television, especially the news, deep breathing, and exercise has helped to decrease his anxiety.

5. Work Simulation – The LTG was not met. The client is able to complete the work simulation of truck inspection, truck steps, driving, and cranking 3 – 5 times a week for 30 – 45 minutes. Depending on the day, the client continues to have an increase in left ankle pain when completing the simulation.

Changes on Standardized Assessments

The client attended work conditioning for 4 weeks and work hardening for 6/8 weeks. The client is not ready for discharge at this time; however, the client has demonstrated an increase in strength and range of motion in his left ankle. His pain level has decreased from the initial functional capacity evaluation, but continues to hover around 4/10.

Inferred Meaning and Purposes

At the beginning of industrial rehabilitation, the client was hesitant in returning back to work of being a truck driver. He often questioned himself if returning to that career was what he wanted because he feared of being involved in another accident. After being involved in the program for a few weeks, the client's affect appeared brighter. He interacted with other clients and found himself developing motivation to return to work like some of the others. He opened up about his past accidents and was willing to talk with a psychologist who specializes in anxiety and pain. He was motivated to get better psychologically and physically. The client found the work simulation to be beneficial even though it made his foot sore. He stated, "It is very close to what I have to do. I about forgot how to drive a truck" up until this point. At times, the client

appeared frustrated because of his increase in pain level. He has to limit how long he can complete the work simulation because of the pain.

Client's Report on Progress

At this time (beginning of April 2008), the client has not been discharged. He is starting week 7/8 of work hardening. I spoke with the client a week ago over the telephone and was informed that he was approved for an additional 4 weeks of work hardening. He has met many of his goals; however, his pain level continues to increase with activity, especially during the work simulation of driving. The doctor has medically cleared the client's left ankle, except for the pain. The infection is cleared up; however, the necrosis is not ameliorated. The next 4 weeks will be a trial period, if the pain does not subside than the doctor plans on fusing the client's left ankle bones together. The client is hesitant of having this process completed, but stated, "Whatever it takes to get this pain to go away and to return back to work."

The client reported a variety of improvements since being involved in the program. He is able to walk on the treadmill with a more natural gait for 30 minutes at 2.1 miles per hour when he originally could only walk 3 minutes at .9 miles per hour with an antalgic gait. He feels his left ankle has become stronger and more flexible. His pain levels have decreased since being in the program and he is able to control his pain by watching how he steps or stands, limit his standing time, use ice, and take Ibuprofen or Tylenol as needed.

The client commented on his anxiety. He stated, the amount of anxiety "depends on the day, what I see, or what's on tv." He has visited the psychologist three times and said she has helped so far. He has been using a relaxation tape 1 hour every day, typically at night. He stated, "I have been using the deep breathing when I'm driving, just like you taught me." He has cut the amount of cigarettes he smokes significantly, however, he admitted that he'll still grab a

cigarette when he encounters a stressful event or is awaken at night by a nightmare. He reports waking up at night at least once with a nightmare. The client stays awake for approximately three hours after being awaken.

The client commented on his psychological, physical, and social health. He stated, "I'm moving towards the better. I've met new friends. I'm not sitting at home with the dog. I've become more comfortable with talking to others about my accident." The client reported a loss of nine pounds since starting the program. He also stated, "My wife has noticed that I am calmer at home since being in the program." The client added, "The 2005 accident caused stress on our relationship, but my wife was very supportive. After my ankle accident, my wife became burned out quick because she had to do a lot more because I wasn't able to." He then stated, "It was difficult to fulfill my roles, but I continued on anyway."

Conclusions

Recommendations

1. Conditioning – Recommend that the client continue to incorporate aerobic exercise and his specific ankle exercises into his daily schedule.
2. Functional – Recommend that the client continue working on climbing up the truck steps each day along with the work simulation 10 inch steps.
3. Pain – Recommend that the client continue to be aware of his limitations when pain levels increase. To continue implementing the use of ice and Ibuprofen to control the pain in his left ankle.
4. Anxiety – Recommend that the client continue visiting the psychologist per her plan of care and incorporate techniques that she has taught him. Also, to continue implementing

deep breathing while driving, decreasing amount of caffeine and nicotine intake, and continue exercising.

5. Work Simulation – Recommend that the client continue communicating with his vocational case manager about returning to work. The client can continue to practice climbing up and down the truck size steps and using the truck simulation**.**

Outcomes Related to the Identified Models of Practice

The use of occupational therapy in the industrial rehabilitation setting allowed the client to demonstrate an increase in overall endurance and strength along with an increase in left ankle range of motion and strength. This goal was achieved by implementing therapeutic exercise and therapeutic occupations to increase strength, cardiovascular endurance, and range of motion. People with biomechanical impairments may have difficulty with occupational performance (Kielhofner, 1997). First, the underlying deficits were addressed through the use of rote exercise and then more meaningful occupations were introduced to continue addressing the deficits. For example, the client completed range of motion and strengthening exercises specifically for his ankle, walked on the treadmill and during functional lifting tasks, and rode the bicycle. Once the client was able to tolerate these tasks without a large increase in pain, the client began climbing a typical flight of steps, walked carrying a weighted box, incorporated squats into his exercises, and then lastly began his work simulation that required functional use of his left ankle.

Mew and Fossey (1996) wrote that a client-centered, collaborative approach is essential to occupational therapy because it encourages the growth of rapport between the therapist and client, allows the therapist to understand the client's perspective, and aids meaningful occupations. The Canadian Model of Occupational Performance was used in order to gain incite about the client's goals for therapy. The client-centered focus allowed for open communication

between the client and occupational therapy student; together they were able to identify the importance of including a goal to address anxiety, since this was a large focus and impairment of the client in returning to work. The work simulation was successful because of the interaction between the student and client in determining the important jobs tasks. The client was able to be successful in this program because of the goals being meaningful and purposeful to him.

Incorporating the Life Style Performance Model into this case study allowed for the psychological functions of the client to be addressed. It was evident that the client was affected by the trauma from the 2005 accident and thereafter. The client was open about his anxieties. This model allowed for the occupational therapy student to question the client on his reactions to different daily occupations (i.e. driving, returning to work). The interaction between the student and client allowed the client to communicate his emotions and anxieties. Traumatic injury may alter self-perception and person identity. Rice and Luster stated, "Unless both the physical and psychological problems are addressed, the individual may not develop the skills needed to return to work" (p. 718). The psychologist that initially interacted with client observed the psychological barriers and referred the client on to a specialist. He too, stated "…his symtomatology can be significantly reduced and the probability of his returning successfully to his job will be greatly increased." It is evident that incorporating the use of the biomechanical, client-centered, and psychological approaches allowed for the client to progress towards returning to work.

This type of case may lend itself very well to a qualitative study of the impact that an emotional trauma can have upon the potential for physical injury and subsequent recovery. It is quite possible that the influence that a holistic approach that occupational therapy affords a client such as this may have a significant impact upon all aspects of the client's physical recuperation,

but more importantly his reintegration into various roles he once fulfilled. Such roles may include that of being gainfully employed, the role of being a husband, father, and grandfather. While this case study has shown many complexities involved with returning to work after a physical injury, the emotional and spiritual side of experiencing emotional trauma has lasting effects that may be most effectively addressed through the holistic approach of therapeutic occupation.

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Table 1.

Left Ankle Range of Motion Measurements from Initial FCE.

Test	Measurement in Degrees
Left Ankle Dorsiflexion	Active 8, Passive 9
Left Ankle Plantarflexion	Active 45
Left Ankle Inversion	Active 12
Left Ankle Eversion	Active 10

Figure 1. Photographs of the occupational form for the “driving a truck” occupation.