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An Innovative Implementation of Occupational Therapy through the ADAPT Advanced Philosophy in Multiple Environments

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Abstract

A collaborative pilot program implemented with two clients with a spinal cord injury intended to merge philosophies of occupational therapy and ADAPT Advanced to enhance occupational performance of the client population. Methods include exploration of occupational therapy's role in conducting a home program, exercise program, and consultation at ADAPT Advanced.
Introduction

The purpose of this project was to gain an understanding of how to better address the needs of the population of spinal cord injury (SCI) patients in a post-acute setting while exploring different methods that are useful as occupational therapists. To explore this topic we partnered with ADAPT Advanced, which offers personal training for clients with and without disabilities, including SCI and other neurological disorders. Partnership with ADAPT Advanced allowed us to learn more about this population while using a different philosophy of addressing the clients concerns. We explored the possibility of merging the ADAPT Advanced philosophy with an occupational therapy (occupational adaptation) philosophy. A survey was given to the employees at ADAPT Advanced to gather their perspectives on occupational therapy being integrated into ADAPT Advanced training. A needs assessment was completed to determine if there is a potential place for an occupational therapist (OT) and the use of the occupational therapy philosophy to guide incorporation of functional activities (occupations) into treatment sessions. A goal of this project was to see how an OT services could be integrated into a setting such as ADAPT Advanced.

To attain this goal, we worked with two people that are clients at ADAPT Advanced and have a SCI. We created an occupational profile for each client, observed treatment sessions, received education on their individual exercise programs, and education on the ADAPT Advanced approach. With the education we received we created a home program for one of the clients, assisted another client with his ADAPT Advanced routines, completed an office ergonomic evaluation, and created a Northwest-specific resource manual for ADAPT Advanced to distribute to their clients and interested parties.
Background of ADAPT Advanced

ADAPT Training is a specialized physical fitness and athletic enhancement company located in Beaverton, Oregon (ADAPT Training, 2014). Within ADAPT Training, there is ADAPT Advanced that works with individuals with SCI and other neurological disorders. The individuals who attend range from three months to 30 plus years post injury. The gender of current ADAPT Advanced clients is primarily males. ADAPT Advanced provides service to clients of all ages, with clients as young as 13 years old. The staff is comprised of trainers with expertise in the rehabilitation process in addition to specialties in areas such as athletic training, chiropractic, and physical therapy. ADAPT Advanced goals are to help clients maximize their level of function and independence and improve overall health. According to their website, ADAPT Advanced provides clients with:

- Increased range of motion and improved joint integrity
- Increased muscular function and strength
- Improved circulation and cardiovascular endurance
- Decreased occurrence of secondary health complications
- Improved sensation and overall body awareness
- Improved postural alignment
- Reduction in spasms
- Maintenance of bone density
- Increased independence
- Improved optimal health (Adapt Training, 2014)

The level of functioning of an individual is assessed during an in-depth evaluation using the Five Fundamentals of Movement (range of motion, structural capacity, neuro function, muscular function and the person’s instinctual motivation to move). From the evaluation, it determines where the individual falls within the Ten Stages of Adaptation and allows the trainers
to customize a training program to optimize the individual’s level of functioning. This evaluation is updated throughout the year as the client’s goals and abilities change. ADAPT Advanced is equipped to assist individuals with spinal cord injuries and neurological disorders through all stages of their recovery. This program provides opportunities for individuals to work toward their goals and strive to achieve beyond typical expectations of performance by health care providers, family, and their own pre-training expectations.

**Background of Project at ADAPT Advanced**

This project was conducted for course requirements (Community-based Practice Project (CBP) and Innovative Practice Project (IPP)) at the School of Occupational Therapy at Pacific University. Students from two previous years have created IPP reports that supported the development of this project. Our work on this project builds upon earlier collaborations between ADAPT Advanced and Pacific University occupational therapy students.

In previous years, much of the focus of this project has been to explore a potential niche within ADAPT Advanced that an occupational therapist could fill. The initial phase of this project consisted of observations at ADAPT Advanced, having the participants fill out a questionnaire focused on gauging interest in an upper extremity based pilot program with the Pacific University’s School of Occupational Therapy, interviews with ADAPT Advanced clientele, a proposed budget for a potential OT on staff, and completion of a resource manual.

The second phase of the project focused on a SWOT analysis, interviews and observations of clientele and staff, a home evaluation of an ADAPT Advanced client, and completion of the Occupational Self-assessment forms (OSA) by clients to gauge their level of satisfaction with instrumental activities of daily living and activities of daily living (IADL/ADL) completion. In addition, a pilot study was proposed to incorporate the Canadian Occupational
Performance Measure (COPM) as a part of the initial evaluation to get a comprehensive picture of each client and to support client-centered goal setting.

For this project, one of the main points of focus was to better understand what services can be provided to those with SCI and other neurological disorders through both occupational therapy and the ADAPT Advanced program. This was accomplished by consultation with our advisor, John White and the Director of Therapeutic services at ADAPT Advanced. During our project we worked with two different clients, both with SCI. We observed the clients’ treatment sessions and created an individualized home program at ADAPT Advanced, as well as worked one-on-one with another client at his workplace and provided recommendations based on a workplace ergonomic evaluation.

Through our education and extensive work with both Pacific University's department of occupational therapy and Advanced training, we learned the different theories behind occupational therapy and the theory behind ADAPT Advanced. This put us in a unique position to explore the potential links between the two philosophies. A goal of exploring this link was to see if the philosophies meshed to the point that ADAPT Advanced could support an OT as a part of the staff.

Throughout this project and learning experience we had a number of different hands-on learning experiences and trainings that have benefitted us as students and that will be valuable knowledge as we transition into our professional careers.

**Factors to Consider Prior to Discharge**

Many ADAPT Advanced clients come to ADAPT shortly after discharge from the hospital. As trainers, it’s important to consider pain, depression, employment, and sexual activity as these factors may affect individuals with SCI transition home and into the community. As of
February 2013, the number of people in the United States who live with SCI is estimated to be in the range of 238,000-332,000 (National Spinal Cord Injury Statistical Center [NSCISC], 2013). Prior to discharge, the lack of addressing individual needs such as pain and depression have shown to impact daily function for individuals with spinal cord injury. These concerns may come up post discharge in settings such as ADAPT Advanced. Pain prevalence following SCI range from 63-91% at one-year post-injury, and 71% reported that pain interfered with daily activities (Siddal, Taylor, McClelland, Rutkowski, & Cousins, 1999). Depression affects 8 out of 17 patients with SCI, which hinders their ability to integrate into the community (Ward, O’Brien, Allan, & O’Carroll, 2011).

In addition, the limited amount of client education on what to expect after discharge in regards to employment and sexual activity has shown to impede a person’s ability to resume previous roles and activities. Currently, only 11.8% of individuals with SCI are employed one year after their injury and studies have found that key variables influence an individual’s outlook (NSCISC, 2013). About 77% of women mentioned that the sex life information that doctors provide on the changes to expect were either insufficient or nonexistent (Ferreiro-Velasco, Barca-Buyo, Salvador del la Barrera, Montoto-Marques, Miguens Vazquez, & Rodriguez-Sotillo, 2005). Studies on pain, depression, work, and sex life after a SCI demonstrate how community integration is challenging and what practitioners should consider prior to discharging clients related to the significant life changes that occur. In order to provide holistic services, these topics should be considered by any trainer or practitioner working one-on-one with a client with SCI during acute rehabilitation or post-discharge.
Pain

Pain is a secondary complication that negatively impacts reintegration into home and community life. One of the most compelling studies was done by Donnelly & Eng (2005) who studied how pain after a SCI injury changes over time and how pain affects an individual’s ability to participate in the community and in pre-injury activities. Donnelly & Eng found that pain at discharge was similar to pain experienced at 6 months of living in the community. Six months after discharge, 86% of individuals reported that pain hindered participation in everyday activities. There was a correlation between pain impact and pain intensity that was found to affect one’s ability to reintegrate into the community.

Due to the relationship between pain and the negative impact on participation, it is essential that pain be addressed with SCI individuals living in the community. People with SCI need to understand that pain may persist even after four years post-injury (Salisbury, Nitz, & Souvlis, 2006). An implication for ADAPT Advanced clients is that they may stop attending training sessions if their fatigue and level of pain is not under control. They may not know different strategies and techniques that can be used to control pain levels. An OT or a trainer with this knowledge could provide the client with strategies, techniques, and energy conservation tips to decrease their level of perceived pain. This would support them to be more engaged in the community and to continue attending ADAPT Advanced training sessions building on a productive cycle of activity, engagement, pain management, and social participation.

Depression

Depression is one of the more common psychological disorders following SCI. Two studies found similar results in regards to depression from one to five years post-injury; both reported similar data in terms of prevalence of depression. Arango-Lasprilla, Ketchum,
Starkweather, Nicholls, & Wilk (2011) demonstrated that of 2,256 participants, the prevalence of Major Depressive Disorder (MDD) was 11.9% at one year and 9.7% at five years post SCI. Similarly, Hoffman, Bombardier, Graves, Kalpakjian, & Krause (2011) conducted a longitudinal study and found that 21% of participants at one year and 18% of participants at five years experienced major depression, as compared to 6.7% of the U.S. adult population at one year (Kessler, Chiu, Demler, & Walters, 2005). Both studies revealed that depression was significantly greater in women than men at five years post-injury. Arango-Lasprilla et al. (2011) specifically assessed how demographics, injury, and discharge characteristics were associated with the prevalence of MDD at one year and five year assessment points. Three key findings were revealed. First, an individual’s age between 35-55 years old was associated with the prevalence of MDD at 1 and 5 years post SCI. Second, an individual with bladder management problems had a significantly increased risk of MDD. Lastly, those with a high school education or less were at greater odds of experiencing MDD post-rehabilitation.

While these findings inform practitioners and trainers that a minority of individuals with SCI will experience depression during the first five years post-SCI, it’s important not to discount the value of identifying and providing treatment for individuals who develop clinically significant depressive symptoms. Having the knowledge of the predictors of MDD in individuals with post SCI will help establish a more effective therapeutic approach to prevent depression among these vulnerable individuals, as well as provide more frequent screenings for MDD.

**Employment**

More than half (57.1%) of individuals with SCI are employed at the time of their injury, which is an important area to consider when integrating an individual back into the community.
AN INNOVATIVE IMPLEMENTATION

Currently, only 11.8% of individuals with SCI are employed one year after their injury and studies have found that key variables influence an individual’s outlook (NSCISC, 2013). Ramakrishnan, Mazlan, Julia, and Latif (2011) examined factors related to length of time between SCI onset and start of post-injury employment. The average time to return to work following a spinal cord injury was 4.9 years. Of the 61 participants in the study, 50% of the participants returned to work by four years post-injury. Employment prior to injury was the only variable that significantly related to an earlier return, almost 3 years earlier than individuals who were unemployed. Fewer years of education and being older at the onset of injury were also associated with the length of time to return to work.

Evidence shows that employment post-injury is a challenge. In spite of the progress of the Americans with Disabilities Act approximately 65% of people of working age with SCI remain unemployed (NCSCIS, 2012; Ottomanelli & Lind, 2009). Time is a key factor to consider when addressing work with individuals with SCI. Returning an individual with SCI to his/her former employment as soon as possible should be a priority, as this could be a potentially time-limited opportunity. Informing individuals that everyone recovers differently and stressing the value of work an individual can offer their employers will provide hope to work again. Advocacy at the societal and governmental level for better employment opportunities is also important, but beyond the scope of this project. However, workplace accommodations are well within the scope of occupational therapy, as interventions and procedures to promote or enhance safety and performance in instrumental activities of daily living (IADL’s) such as work (AOTA, 2009). Occupational therapists analyze the physical environment as it relates to human performance, determine specific functional and environmental problems, and change environmental demands to maximize performance (Sabat, Shamberg, and Williams, 2008). In collaboration with the
ADAPT trainers, much support could be provided to clients in gaining new employment or returning to previous employment

**Sex life**

Sexual activity is a fundamental aspect of activities of daily living. Two studies found similar results of women’s sexual functioning and sex life experiences following a SCI (Ferreiro-Valasco et al., 2005; Kreuter, Taft, Siosteen, & Biering-Sorensen, 2011). Both reported physical and psychological changes that negatively affected many aspects of sexual activity after injury. This included loss of sensation, disturbed body image, no partner, decreased ability to reach orgasm, bladder/bowel incontinence, and positioning difficulties. Decrease in frequency of sex after injury was also found in both results. Ferreiro-Valasco et al. (2005) discovered a significant drop of intercourse from an average of 9.9 times per month prior to injury to 4.2 times per month after injury. Providing the appropriate sex life information to those over the age of 18 during rehabilitation will help people with SCI adapt to their new situation and develop strategies to compensate for loss of sensation and manage physiological impairments during sexual activity. Seeking alternative pleasuring techniques with and without intercourse is often recommended and as OT follow the ExPLISSIT model they can provide appropriate levels of permission, information, suggestions and/or referral to competent sexuality counselors or practitioners (Taylor & Davis, 2007). Continuing these activities will bring normalcy to a person’s life.

In conclusion, research shows pain, depression, employment, and sex life all affect an individual’s activities within a community, which SCI clients at ADAPT Advanced may be experiencing. It’s important that practitioners and trainers be aware of key factors/variable, which can have an effect on the transition into community life and their level of participation.
The body of evidence reviewed in this paper suggests the importance of addressing pain, depression, employment, and sexual activity to ensure a better life for individuals and increased social participation.

**Summary of Needs Assessment**

A needs assessment was conducted to gain an understanding of possible directions on the project (see Appendix A). The Occupational Adaptation (OA) theory was used to guide the needs assessment. The OA theory explains, “the internal adaptation process that occurs through occupation and for occupation” (Schultz, 2009, p. 464). Occupation refers to all of the meaningful activities that occupy a person’s time including caring for oneself and others, productivity that contributes to the social good, and enjoying oneself through leisure and play (Law, 1998). The OA process includes active engagement in meaningful activity, occupations, and supporting achievement of life goals. The OA model emphasizes the creation of a therapeutic climate, the use of occupational activity, and the importance of relative mastery (Schultz & Sckade, 1992). Approaches based on occupational adaptation differ from those focused on acquisition of functional skills because the model directs interventions toward internal processes and how these processes are facilitated to improve occupational functioning.

The occupational adaptation practice model is holistic. Occupational environments (as influenced by physical, social, and cultural properties) are as important as the ones sensorimotor, cognitive, and psychosocial functioning. Experience of personal limitations and potential is validated. The integration of these concepts drives the OA treatment process. We utilized the OA model to help explain how clients at ADAPT Advanced, with various roles they take on, need a holistic approach utilizing various processes to achieve the best occupational response (See Appendix B).
The needs assessment was conducted through observation and interview. A survey was given to ADAPT staff on potential roles of occupational therapy at ADAPT Advanced (see Appendix C). Results from a survey given to staff identified “enhancing ADAPT Advanced training by addressing more specifically how basic and instrumental activities of daily living are completed by Advanced clients” as a way they could envision occupational therapy impacting ADAPT Advanced. Another staff member identified “enhancing the ADAPT evaluation” as a way they envision occupational therapy impacting ADAPT Advanced and “giving patients references and options to better their life” as an area they felt occupational therapy could enhance ADAPT Advanced clients and staff. Based on results of the needs assessment we recommended that pilot occupational therapy sessions be conducted over six weeks with 3-6 clients. Other recommendations included updating the resource manual created in a previous project and exploring assessments that could be used by an OT at ADAPT Advanced. After discussions with the site supervisor and hearing of perceived initial interest in participating in a pilot occupational therapy project, we decided to change our main focus to create a training program for an ADAPT Advanced client that would include an occupational therapy perspective.

**Training Received for Project**

As part of the project, members received extensive training and observation at ADAPT Advanced. Two of the team members began observing at least two times a week for two hours at a time beginning in October 2013. This observation continued through December. During this time, the other team member was in fieldwork and was not available. Various clients were observed with the majority of them being SCI clients, as well as trainers. During the observations students were able to ask questions to both clients and trainers and were given the opportunity to debrief with trainers after the session. Team members were asked to note ways clients
incorporated the ADAPT Advanced 5 fundamentals of movement into each session, and how each trainer approached clients differently.

To get a full understanding of what each client must go through at ADAPT Training, all three team members underwent an individual physical therapy evaluation. This consisted of the physical therapist gathering information on current and previous activity, health history, taking pictures (front, sides, back) to see body alignment, observing exercise movements, and developing a daily exercise program tailored for each individual. Group members also participated in a therapeutic fitness class that all members of ADAPT attend as a first session. The class focused on realigning the body.

After members completed observations, ADAPT Advanced provided an educational training session to deepen members understanding of their philosophy and the steps used to create a training program. Group members attended a three hour accelerated Level Three training. This is what all hired trainers complete before continuing training in a specialized area. This specialized training was provided so that both the Advanced philosophy and the group members’ occupational therapy education could be taken into account when producing a home exercise program for an Advanced client.

The project advisor John White, also provided training for low-grade shoulder mobilization techniques. This was a hands-on learning experience through the school of occupational therapy that allowed members to provide additional therapeutic services to one of the clients. The extensive training and observation involved in the project provided group members with specialized experience and knowledge to bring into their professional careers.

**Work with Clients**
As part of the project, we worked with two clients that attend ADAPT Advanced, but were seen in two different environments. One client was seen at the ADAPT facility and the other was seen at the client's workplace. For confidentiality purposes we will refer to them as client J and client S. Client J was selected for us to work with by our site advisor to help us with our project. This client was chosen because he was reliable and came to his sessions on a continuous basis. The second client was regularly seen at his place of work, but did not make it into ADAPT Advanced on a regular basis.

**Client J**

Client J is a 22 year old male. In middle school, he was diagnosed with idiopathic scoliosis. He suffered a C5 incomplete SCI in 2010 as a result of a fall while wrestling with a friend. He was mechanically stabilized from C4-6 and spent three months in inpatient rehab and eight months in outpatient rehab. He started attending sessions at Advanced in June of 2011. He received weekly sessions for the first four months until he needed to take a break due to financial reasons; he then returned to regular weekly sessions in March 2012.

Currently, J uses a manual wheelchair and requires minimal to no assistance in most ADLs, and often has family members available to assist if needed. He attends Advanced once a week for an hour, usually in the mornings. J has been playing on a local wheelchair rugby team for the past year and in the last six months he has been part of the traveling team. Within the last three months J has also started taking computer classes through vocational rehab. This leads to him being in his chair for hours at a time and more than he did previously. He has returned to work at his pre-injury place of employment. Recently, he has been complaining of shoulder pain.
J’s overall goals at Advanced consist of increasing independence and regaining the ability to move from sitting to standing with minimal to no assistance, decrease use of abdominal binder, and increasing his strength and endurance to be able to walk on a regular basis.

Initially J was picked for us to work with because he was reliably coming to sessions. However it is important to note that during our project he did not show up as consistently as he was previously. We were scheduled to attend eight of J’s sessions, but due to various reasons such as having car trouble and sleeping in due to fatigue, we were only able to see him three times. This was a great learning opportunity to see how external pressures can influence an individual’s occupational performance and engagement in activities. As future practitioners it is a valuable lesson to learn that at times circumstances are beyond our control and in the end we have to adapt.

Despite only seeing him a total of three times, we developed a daily home program routine that he could do in and out of his chair with the goal of working towards standing. We also created a one hour advanced supplemental routine that he could do two times a week, which emphasized upper body performance outside of his chair by increasing the demand in order to increase strength and endurance. We also included in the program write up a list of occupation based areas OTs would address with J throughout a training session. These included working on efficient car transfers, assessing his studying environment at home, assuring he is using all assistive technology and resources available to him at his school, and reviewing his classroom setup and environment. While missed appointments caused a delay in being able to measure the effectiveness of the program before the project end time, plans are in place to track the progress of the program. Client J will be measured on several different performance sequences both before starting the program and six weeks into completing it. We intended to take pre- and post-
performance measures to track progress. This will provide an indication of how effective the home program was for J.

**Client S**

Client S is a male in his mid-forties who sustained an incomplete spinal cord injury in 2004. He started attending ADAPT in 2008 in Carlsbad, CA to address an ACL injury he had originally acquired when motorcycle racing. Around 2008, the ADAPT program came to Beaverton and he attended it locally instead of commuting long distances. He took few-year break from ADAPT Advanced sessions, however recently started going back to ADAPT about a year ago.

Client S sustained his C5 incomplete SCI in 2004 when jumping into a river while playing with his kids. After the injury he had an H frame placed in his neck to stabilize his cervical spine, and he has consistently used a condom catheter. In subsequent surgeries, he has had an inferior vena cava filter implanted, and has had a colostomy bag for four years which has increased his confidence in going out. He experienced a deep vein thrombosis but it was detected and successfully treated. According to self-report, S does not currently take any medications, with the exception of occasionally taking Cyclobenzaprine hydrochloride at night for relief of leg spasms. He has partial movement of the right upper extremity with enough movement and dexterity to use a computer, cell-phone and operate his power chair. He has lower extremity movement adequate to scoot in his chair, reposition his feet on the floor or lift them to nearly full knee extension. His movement is significantly limited in his left upper extremity and he has some trunk control. All movement is intermittently affected by near-total body spasms that can last from a few seconds to over a minute.
S started a concrete business out of high school and continues to run it today. He does not go out into the field since most sites are not flat before they complete the concrete job. S employs a foreman that provides all field preparation and site management. S is in charge of scheduling, estimating, client communication, scheduling with materials, and paying bills.

He is currently living in a rental home with his girlfriend, who is also his primary caregiver. S has not made any significant modifications to his home since he is renting. S has three children from a previous marriage and has shared custody of the children. He has his three children with him every other week. His girlfriend also has a child that stays with them part-time. Much of his time is spent taking the kids to sporting events with his girlfriend, as he does not drive. He has a full size van with lift and has the dexterity to drive, but he does not feel comfortable driving due to the risk imposed by his spasticity.

Before his accident he participated in competitive motocross and snow skiing. S also has an affinity for wolves and used to have two pets that were part wolf. Currently, most of his activities involve his kids and attending their games. He enjoys playing “Angry Birds” on his Kindle. He has expressed interest in biking or skiing again with modifications. An occupational profile was developed and information showed that S mainly focuses on his work and activities revolving around his children. From the occupational profile, information was gathered in regards to ways he could possibly fish or participate in riding on a motorcycle again while also helping him look into any new interests.

Beyond providing resources for him on recreational activities, we implemented Client S’s previous ADAPT routines and a new supplemental total body workout. The training sessions were implemented 2-3 times a week over six weeks. S had recently lost a work assistant that had previously helped him with paperwork and assisted him with his stretching and ADAPT
Advanced routine. Losing his assistant increased his workload and was a contributing factor in his decision to take the month off from attending ADAPT Advanced sessions at their facility. We were able to fill this gap in services by implementing the workout program every Monday, Tuesday, and Wednesday. Each week S would mention that by Wednesday, after doing the program for two days, he felt looser and felt that he could breathe better.

The opportunity to work with him regularly gave us a good picture of the effectiveness of the routine as he was not receiving services elsewhere. We also implemented shoulder mobilization techniques with S. Our advisor instructed us on the proper technique and we were observed implementing it. The goal of using shoulder mobilization techniques was to prepare for the ADAPT program by gently stretching the shoulder capsule to increase his range of motion and decrease tightness in his shoulders. Glenohumeral mobilization techniques were not done on his left shoulder, as it is currently is slightly subluxed.

Because we were working with him directly in his work environment, we had the opportunity to implement more applied occupational therapy interventions with S than with J. We were able to explore other aspects of his life and how occupational therapy could benefit him. While working with him we explored leisure opportunities that he has expressed interest in and discussed what barriers and resources were available to him. Beyond leisure exploration that was part of an occupational profile (a comprehensive report of a person’s history of occupational interests, performance patterns, and roles to support client-centered goal-setting and evidence-based intervention planning (AOTA, 2014)), we also completed a workplace evaluation. Using the Person Environment Occupation (PEO) model (Law et al, 1996), we addressed concerns he had about his office set up and provided him with recommendations for his office set up. The results are as follows:
Workplace evaluation key points of what client currently uses:

- Uses document holders on each side of computer
- Changes position of workstation every month to vary posture and alignment
- Uses a trackball
- Changes the tilt of his power wheelchair for comfort throughout the day (upright to reclined position)
- Uses shelf as footrest to move the position of his legs during the day and stretch calf muscles
- Uses a small round pedestal table for reading and measuring blueprints and related paperwork, can manipulate a drafter’s scale
- Types with right hand only, visually-aided, one-finger typing
  - During typing, R Shoulder abducted at 55 degrees
- Position of R elbow while extended during typing at 4 degrees short of full extension (assuming 0 degrees is full extension and 150 degrees is full flexion)
- Leans to R side at desk
  - These measurements point out that most of his work is far away from him (secondary work zone) but that may be beneficial for him since it is an added stretch and increased ROM throughout the day.

Concerns of Environmental Workplace Setup:

- Most work is done in secondary work zone instead of primary (shoulder to mouse was 19 ½ inches, shoulder to keyboard was 24 inches, and shoulder to monitor was 39 ½ inches)
- Prolonged mechanical pressure placed on R elbow when resting R forearm on table to type and use mouse
● Goes through a large amount of flexion when reaching for his phone, which he keeps on his left side. May be beneficial to arrange better placement of phone.

**Suggestions for Environmental Workplace Setup:**

● Gooseneck placed on chair to hold phone at a higher level to decrease the flexion pattern, position screen for easier reading, and reduce risk of dropping the phone

● Provided gel pad for R elbow to rest on to reduce mechanical stress to evaluate comfort and protective value

● Discussed moving materials regularly and keeping work zone as centralized as possible, however the added stretch throughout the day may be beneficial for what is typically sub-optimal work material positioning

● Discussed implications for the use of a one handed keyboard, though standard keyboard seems reasonably efficient

● Discussed various phone applications that can be used to make texting easier such as voice-texting, swiping, and word-prediction

● Provided S with another document/book holder to bring as many documents up to eye level as possible. This is positioned just above the keyboard.

**Resource Manual Continuation**

Individuals seeking health information often will seek sources outside of their primary physician (Hibbard, Greenlick, Jimson, Kurkel & Tusler, 1999). Information from a resource manual could be considered a self-care and community access resource. Medical self-care consists of the actions an individual takes to address a medical problem (Vickery, Kalmer, Lawry, Constantine, Wright & Loren, 1993). Hibbard et al.(1999) looked at whether self-care resources are used more often in communities with low amounts of managed care. They sent
questionnaires to a random sample of households in three different communities with various levels of managed care. They found that using self-care books, computer resources and nurse telephone advice lines would just as likely be used in households with or without health insurance and a regular source of care.

Individuals with SCI are in need of a variety of health and personal resources, especially in the first year post-injury. In a study by Schonherr, Groothoff, Mulder & Eisma (2005), SCI patients in a Dutch rehabilitation center reported wanting more support and resources from professionals in regards to vocational and leisure activities. Despite reporting high rates of life satisfaction, over 75% of respondents in a study by Donnelly, McColl, Charlifue, Glass, O’Brien, Savic & Smith (2007) reported that they did not address issues of sexual health, alcohol use, community functioning and emotional health with their physician.

A previous project for this site (Giuliani & Kuhl, 2012) developed a resource manual to help ease transition for individuals with spinal cord injury and other neurological disorders through their first year and beyond. This resource manual was continued and updated as part of the current project (see Appendix D). Resources and links from the previously developed manual were paraphrased to make the manual more accessible to individuals without an internet connection. New resources were added to the manual to expand the focus to other neurological disorders such as Parkinson’s disease and stroke. In addition to resources in the Northwest area, tips were included that could potentially be helpful to individuals newly diagnosed with a neurological disorder, such as creating a caregiver contract and talking to a mechanic about installing adaptive equipment into a vehicle. The purpose for continuing work on the resource manual was to develop something that could be easily handed out to new ADAPT Advanced clients. We also hoped that including various agencies from the area into the manual would
increase ease of access to resources for individuals with neurological disorders in the Northwest area. Developing the manual in collaboration with ADAPT Advanced also increased the opportunity for ADAPT Advanced to make increased connections with other agencies and businesses in the area.

**Project Outcomes**

The project allowed the Pacific University School of Occupational Therapy to increase their relationship with ADAPT Advanced and gain a better understanding of what that relationship could potentially become should ADAPT elect to hire an OT. Based on interviews with the project’s community advisor and results of the needs assessment, we decided to look more into how occupational therapy could fit into ADAPT Advanced as a member of the team of trainers. By observing multiple clients and trainers over 40 hours we were able to get an increased understanding of what trainers at ADAPT Advanced do, and the kind of knowledge and client-centered relationship required during sessions. By receiving ADAPT Level III training and being able to design a home training program for an ADAPT Advanced client, we learned how to use ADAPT principles to create a program that maximizes neuromuscular function. By physically working on an ADAPT Advanced home program with another client we were able to get a great picture of how these home programs are applied. Through implementation of the program in the client’s workplace, we had the opportunity to focus on the clients occupations and conduct a workplace evaluation, as well as recommend resources based on occupational profile information that was gathered. We hope that this type of blend between occupational therapy and the ADAPT education would look similar to having OTs work as trainers at ADAPT Advanced.

Client outcomes were not fully assessed due to the project ending prior to completion of all elements of the program for each of the clients. J’s home program outcomes will be assessed
by ADAPT staff once he has had time to implement the program for 6 weeks. ADAPT staff reported that the home program designed should allow J to increase his strength and endurance and allow him to better tolerate the long amounts of time he spends in his chair in class. S reported that he received short-term benefits from his ADAPT program implemented by our project team at his workplace. These benefits lasted from approximately 5-24 hours. Results of the workplace ergonomic evaluation and recommendations have not been in place long enough to be properly assessed. However, S reported that the gel pad under his elbow immediately provided some relief to the pressure over the elbow (at the position of the ulnar canal) and he expected that the phone holder would boost his productivity. The project advisor will follow-up on the longer-term results of these adaptations. Recommendations and suggestions were provided regarding various standing frames, wheeled mobility, and devices recommended in the workplace evaluation. The client will purchase those that he feels will be useful. Due to limitations in the students’ and S’s schedules, we were unable to schedule the home evaluation as originally intended.

**Challenges/Limitations**

Our biggest challenge was trying to understand the best way to approach the project. We initially set out to do a pilot occupational therapy study where we would perform occupational therapy to ADAPT advanced clients with supervision. After getting a clearer picture of clients’ needs and availabilities, it made more sense to focus on one client. Because our needs assessment revealed that an OT would fit in best at ADAPT Advanced as a trainer, it was decided that the philosophies would have the best opportunity to merge if we were given an accelerated Level III course on ADAPT Training concepts. From what was learned in this course
and previous observations, a home training program would be developed for an ADAPT Advance client, while also taking into account the clients habits, routines, and interests.

Though we initially planned to observe client J between 8-12 hours and physically introduce the home program to him, extraneous circumstances did not allow this to occur. Throughout the weeks we were scheduled to observations were schedule, the client was experiencing car trouble and had started taking computer classes that caused him to spend long hours in class. Based on these new circumstances, it caused the client to cancel a few of the sessions when we were scheduled to observe. Without the opportunity to do more than a few observations, it was difficult to obtain all information needed to assure that the home training program was practical. Fortunately, we were able to discuss the home program with the client’s trainer and get feedback on how the client would likely be able to perform the program. While the cancellations were unplanned and slightly changed the implementation of the program, it was a valuable lesson that life circumstances can occur in a client’s life that change plans we have for the client. We were able to adjust our plans and create a home program that will be implemented after the project ends and help the client readjust as he returns to ADAPT Advanced sessions.

**Future projects**

Through our discussion with ADAPT Advanced and our experience at the facility, it has become clear that in order for an OT to fit into ADAPT Advanced, the OT must first be hired as a trainer. ADAPT Advanced currently offers other services such as chiropractic and physical therapy services who also work as trainers. While these are individualized professions, they each work as, and a as a trainers. These individuals offer their services in addition to basic training. An OT must work as a trainer as needed, then offer occupational therapy services in addition to training for clients for which it would be beneficial. At this time, it does appear that an OT could
be a good fit for the ADAPT Advanced team, however there would not be a specialized position created for occupational therapy. There is potential for a merger of the occupational therapy and ADAPT philosophies as both focus on functional gains and increasing independence. OT could provide additional models and interventions (such as home and workplace evaluations, functional activities, leisure exploration, etc.) beyond those, which are currently being used. From this project, it was more apparent that the end goal for both ADAPT Advanced trainers and occupational therapist’s is similar. This project was able to more clearly define the role of occupational therapy at ADAPT Advanced and address questions arising out of previous OT student projects. At the present time both Pacific University and ADAPT Training have agreed that this will be the final phase of the project for now. ADAPT Training and Pacific University school of Occupational therapy will continue their relationship and possibly collaborate again in the future.

Future of project:

- Implementation of home programs for Client J.
- Continued services for Client S provided by paid aid position recruited by School of OT. Follow-up by project advisor to support optimal implementation of workplace modifications and equipment.
- Proposal of benefits utilizing OT services at ADAPT to bill insurance companies, with detailed projections of revenue potential.
- Potential for continued collaboration between Pacific and ADAPT:
  - Potential site for class visit - learn about program.
  - Possible use as site for a Capstone project.

References


Appendix A
ADAPT Training Needs Assessment

Introduction:
ADAPT Training is a specialized physical fitness and athletic enhancement company located in
Beaverton, Oregon (ADAPT Training, 2011). Within ADAPT Training, there is the Advanced
program that works with individuals with spinal cord injuries (SCI) and other neurological
disorders. Advanced works one-on-one with their clients by providing the optimal environment
and training challenge to help individuals achieve their goals (Kinney, 2013). All trainers go
through level 3 training through in house education.

The level of functioning of an individual is assessed during an in-depth evaluation using the Five
Fundamentals of Movement. From this evaluation, it determines where the individual falls
within the Ten Stages of Adaptation and allows the trainers and physical therapist to customize a
training program to optimize the individual’s level of functioning.

The purpose of this Community-Based Practice Project (CBPP) is to collaborate with Advanced
and establish ways occupational therapy can be implemented at Advanced. The CBPP will also
create occupational therapy based materials that trainers can distribute to and use with clients.
These materials will also be supportive of the occupational therapy practice with Advanced.

The Occupational Adaptation (OA) theory was chosen to guide this needs assessment. It
explains, “the internal adaptation process that occurs through occupation and for occupation”
(Schultz, 2009). This process includes active engagement in meaningful activity, occupations
and supporting achievement of life goals. Furthermore, the OA model explains how clients at
Advanced and the various roles clients take on present occupational role expectations that
require an occupational response.

Needs Assessment:
Population:
Advanced works with clients with various levels of spinal cord injuries. The individuals who
attend range from three months-30 plus years post injury. The gender of current Advanced
clients is primarily males, but there are some females. Advanced accepts clients of all ages, with
clients as young as 13 years old.

Partnering Community Organization:
Advanced works to:
• “Educate individuals and their families on the realities of recovery.
• Diminish the deterioration of body function and increase the overall health and mobility
  of each client.
• Re-establish ideal body structure and alignment.
- Identify restrictions and create an optimal environment to eliminate those limitations through targeted progression-based stimulus.
- Create increased independence in daily living activities” (ADAPT Training 2011).

**Environmental Contexts and Stakeholders:**
Clients and their families are the key stakeholders in Advanced because they are the reason that Advanced was created. Clients and families are responsible for producing payment for services since all clients pay out of pocket for sessions at Advanced. Changes outside of the clients control can affect their ability to come to Advanced. A change in their employment (the client’s or caregiver’s) may leave their household without enough money to continue paying for sessions. If a client’s family decides to move for work, school, or to be closer to family, they may no longer be close enough to commute to Advanced. There is currently only one Advanced facility, located in Beaverton, Oregon. Some of the clients attend school, church, and are involved in wheelchair sport teams. Clients have to arrange training and home program around these activities. Wheelchairs and other adaptive equipment can be expensive and Advanced clients often depend on private insurance or Medicare coverage to acquire equipment. This equipment requires someone to fit and adjust it to reduce pressure sore risk and maximize comfort. Clients at Advanced may rely on advocates or be required to advocate for themselves to ensure that individuals with SCI are receiving adequate amounts of coverage from insurance companies for chairs and fitting. Organizations such as the Christopher and Dana Reeve Spinal Cord Injury and Paralysis Foundation and the National Institute of Neurological Disorders and Stroke provide resources and grants for individuals with spinal cord injuries, as well as fund and conduct research that could benefit this population.

Advanced also partners with the national paralympic wheelchair rugby team and the Portland Pounders rugby team, with trainers from ADAPT Training serving as training providers for the team. Other athletic teams in the area have athletes that attend Advanced and benefit from the services their athletes receive. Advanced partners with other local organizations such as Oregon Disability Sports by hosting events and information sessions. Advanced occasionally hosts fundraising events for clients in need as well.

The founder and staff of ADAPT Training and members of their executive board create and implement changes to assure ADAPT Training is successful. There are affiliated health clubs that have ADAPT certified trainers that rely on the strength of the Advanced philosophy and name. Clients’ physicians have an effect on medical clearance of an individuals’ ability to participate at Advanced. The manufacturers of the blocks, mats, and gym equipment that ADAPT Training uses benefit from their continued success.
Conclusions:
Advanced provides a unique service that offers the spinal cord population the opportunity to set and achieve goals, receive individualized training with the addition of a home program to support recovery. The use of a neuro-muscular re-developmental approach help clients develop the necessary skills to accomplish goals related to movement.

Some staff members at Advanced have mentioned that because they are assisting clients in regaining function, they are already doing occupational therapy like programming. Although clients do benefit functionally from the Advanced program, an occupational therapy program would likely enhance these outcomes in functional performance. Information from a focus group conducted in a previous years project indicated that some Advanced clients had unpleasant experiences with occupational therapy while in acute care post-injury which is borne out in the narrative literature of disability related autobiography (Frank, 1994). Although the projects from the past two years have provided presentations on what occupational therapy is, there appears to be a need for Advanced clients and staff to be able to directly observe what occupational therapy can contribute to this facility and their clients.

Clients have come to Advanced as early as three months post-injury. The unexpected/sudden change associated with chronic disability can be overwhelming for individuals and their families, especially within the first couple of years after injury. This critical time is when information and resources can provide support and promote understanding of options for health-enhancing occupational engagement and social participation. The 2012 Pacific project by Giuliani & Kuhl, already created a general spinal cord injury resource manual that Advanced uses to gives clients. The staff have stated that it has been very useful. Over time Advanced clients and staff have discovered a wealth of resources that are specific to the Pacific northwest region, that assist individuals with spinal cord injuries immediately after injury and beyond. The on-site supervisor at Advanced has expressed how helpful it could be to hand new clients a book that includes resources that they need to help cope with living with their injury in the Oregon/Washington area.

Results from a survey given to Advanced staff identified “enhancing Advanced training by addressing more specifically how basic and instrumental activities of daily living are completed by Advanced clients” as a way they could envision occupational therapy impacting Advanced. Another staff member identified “enhancing the Advanced evaluation” as a way they envision occupational therapy impacting Advanced and “giving patients references and options to better their life” as an area they feel OT can enhance Advanced clients and staff.
Recommendations:
1. Students will conduct pilot occupational therapy sessions at Advanced (3-6 weekly or bi-weekly sessions conducted over six weeks with 3-6 clients) with Advisors assistance to give a better picture of how occupational therapy can fit in and benefit Advanced clients and staff.
2. Based on information gathered from pilot sessions and other client and staff interviews, students will create a comprehensive resource manual for individuals with spinal cord injury that focuses on resources available in the Pacific Northwest, building on the resource manual created by previous project by Giuliani & Kuhl.
3. Assessments/evaluations will be identified that focus on occupational performance that can be used for occupational therapy evaluations, as well as for follow up evaluations by Advanced staff.

Action plan:
1) Recruit 3-6 possible participants for a pilot study to treat using an occupational therapy approach.
2) Create and distribute a pre and post questionnaires to gain a better understanding of the participants’ previous experience with occupational therapy and how satisfied the individuals were with the services, as well as what shortcomings the clients identify with their earlier program.
3) Conduct a pilot study with 3-6 clients from Advanced who are willing to volunteer to get free occupational therapy services from occupational therapy students with the supervision of community-based project advisor, John White.
4) Identify a functional evaluation that is client centered and occupationally relevant that can be used at Advanced for clients with spinal cord injury.
5) Create an occupation based Pacific Northwest focused resource manual gathered from information provided by clients, staff, and research to distribute to new clients.

Strategies for implementation:
To recruit participants at Advanced, a flyer will be created and given to the on-site supervisor to be displayed at the facility. Each week in January, the students will go to Advanced to try to encourage individuals to participate in the pilot session by emphasizing that it’s free and explaining the benefits of occupational therapy services, as well as the invaluable experience students will gain from working with individuals. Also, students will collaborate with the on-site supervisor to identify potential clients that she feels may be open to our services who come to Advanced, especially on the days that the students are not there. In addition, looking at the clients that live close to the facility and having the on-site supervisor urge those individuals to contact the students with the hope of being able to persuade the individuals to participate in the pilot sessions.
For the occupational therapy pilot sessions, students will get approval from on-site supervisor first, and then once approved, students will coordinate times that will work for both participants and students. Students will create a questionnaire that will be reviewed by the community-based project advisor to be given prior to and after the 3-6 week occupational therapy pilot sessions. Prior to each session, students will collaborate with the advisor to develop a plan of how to approach each therapy session with each client to best suit the client's’ occupational performance goals and then implement the plan.

Students will seek out and critique various evaluations that are used with individuals with SCI. Based on information gained from these critiques, specific evaluations will be selected and implemented in the pilot sessions. If the evaluations used in the pilot session are beneficial, the students will recommend them to future occupational therapists working as trainers at Advanced.

Students will begin assembling a resource manual for individuals with SCI for Advanced and other regional hospitals and rehabilitation centers to distribute. Local hospitals and rehabilitation centers such as Rehabilitation Institute of Oregon in Portland, Oregon Rehabilitation Center in Eugene, and the Northwest Spinal Cord Injury System in Seattle will be contacted to see if there are currently existing resources that can be built on. Through interview and surveys, students will gather information from Advanced clients and staff on what community resources and tools they have found to be most useful for individuals with spinal cord injuries in the Oregon/Washington area. These surveys will also be distributed to hospitals and community agencies in these states for additional information. From the information gathered through surveys, interviews, and internet searches, students will create a resource manual with a Pacific Northwest focus to be given to Advanced clients during the evaluation. Students will merge information in this manual with information from the Giuliani & Kuhl’s 2012 Pacific project. The finished resource manual will be distributed in pdf format to Advanced and possibly to other hospitals and providers in the area.

General timeline for each action:
Goals and Outcome measurement:
Outcome: Advanced clients will gain increased independence in occupation-based activities in both home and community environments.
Goal 1: By January 2015, occupational therapy will be implemented into the Advanced program to meet environmental and occupational needs of clients.
Objective 1: Clients will report 7 out of 10 satisfaction rate via questionnaire conducted by students after the completion of occupational therapy pilot sessions.
Objective 2: Staff will report 8 out of 10 confidence rate through a questionnaire, following the occupational therapy pilot sessions conducted by students.
**Measurement of Objectives:**
Objectives will be measured through several questionnaires given to clients and staff at beginning and end of the occupational therapy pilot sessions. The objectives will also be measured by averaging responses from Likert scale questions.

Outcomes from the questionnaire will be recorded on a Microsoft Excel sheet and averaged. Average scores will be reported onto a fact sheet in Microsoft Word. The fact sheet will be communicated to community partner through email or physical presentation.

**References**


Appendix B
Model to guide Needs Assessment

Occupational Adaptation Theory

*Description of theory:*
Factors in the occupational environment create a demand on an individual for mastery. Those demands interact to create a press for mastery. The demand and press for mastery lead to occupations not readily accomplished by the person, which are called occupational challenges. Aspects of the person can either support or hinder successful occupational performance depending on environmental factors. These interactions lead to occupational role expectations (social expectations that accompany roles). Whether a person is successful or not, depends on their occupational response and how they adapt to their response.

Model is below
Occupational Adaptation Theory diagram
AN INNOVATIVE IMPLEMENTATION

**Desire for Mastery**
- Independence: driving, mobility, active lifestyle, athletic performance.
- Client’s motivation, values, beliefs

**Press for Mastery**
- AT-AA trainers assist clients in regaining independence through five fundamentals of movement and proper body alignment

**Demand for Mastery**
- Accessibility of home and community
- Amount of family/peer support
- Competitive nature of wheelchair sports teams and expectations

**Occupational Environment**
Physical: gym setting, location of ADAPT in terms of transportation
Social: AT-AA staff, family, learn about ADAPT mostly through word of mouth
Cultural: religious commitments; how often they come to AT-AA and how long (i.e. couple times a week, once a week, every month; 1 hrs, 2 hrs);
biomechanical approach, five fundamentals of movement, 10 stages of adaptation

**Occupational Challenge**
- Driving to rugby practices/games
- Work
- Leisure activities
- Higher education

**Person**
- Due to various levels of spinal cord injuries, sensorimotor, cognitive, and psychosocial systems vary
- Socioeconomic status: majority of clients pay out of pocket
- Range from 3 months-30+ years post injury
- Majority of clients are males, with some females
- Ages 18+

**Occupational role expectations**
- Be a student, parent, spouse, athlete, etc.
- Be compliant with home exercise program
- Achieve personal goals: get drivers license, make the USA national rugby team, and be licensed to drive a commercial vehicle

**Occupational response**
- Response based on prior experiences in home, work, school, etc., which leads to adaptation based on outcome of response.
Appendices C:
Survey for Advanced Staff

The following is a survey to help identify ways occupational therapy can be incorporated into Advanced. Occupational therapists look at how to help individuals participate in things they want and need to do. The information from this survey will also provide a better understanding of what Advanced offers. The survey will take approximately 10-15 minutes. All information gathered in this survey will be confidential.

If you have any questions please contact Traci Yoshikawa (yosh3913@pacificu.edu), Danny Pavlovich (pavl6015@pacificu.edu), or John White (whit9986@pacificu.edu).

Please fill out the following:
Age: ______  Number of months/years at Advanced: ______________
Degree:___________________

Please answer the following questions to assist in the development of future programs at Advanced. For questions (1-6), please circle the number that corresponds to the level that you agree with the statement.

*Individual/client= service recipient*

5= Strongly agree  4= Somewhat agree  3= Undecided
2= Somewhat disagree  1= Strongly disagree

1. An occupational therapy program that helps individuals use their new capacities, developed through Advanced would be beneficial to Advanced. ----1----2----3----4----5----

2. A primary goal of Advanced is for individuals to benefit from neuromuscular reeducation so that they can have better day-to-day functional skills. ----1----2----3----4----5----

3. The services that Advanced offers help individual’s transition independently into their communities/homes. ----1----2----3----4----5----

4. I feel my client’s needs, wants, and/or concerns are addressed during every training session. ----1----2----3----4----5----

5. My clients feel comfortable addressing any concern they have with me. ----1----2----3----4----5----
For questions (6-10), please write the answers to the following questions.

6. Where are some areas you feel occupational therapy can enhance Advanced clients and staff?
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

7. How would you envision occupational therapy impacting Advanced?
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

8. What are some successes you have seen at Advanced in the last year?
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

9. In what ways do you feel Advanced support individuals in their home activities?
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

10. How do the services offered at Advanced impact the community as a whole?
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

Any additional comments:
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

Thank you for your participation in the survey.
If you run out of space, feel free to write extra comments or continue answers below.
Cerebral Vascular Accident (CVA)/ Stroke
A stroke is the lack of blood flow to the brain or sudden bleeding in the brain. There are two types of stroke. Ischemic strokes occur when arteries are blocked by blood clots or a result of a gradual buildup of plaque, which account for 87% of all strokes. Hemorrhagic strokes are less common, only 13%, but are more severe. It result in the blood vessels rupturing blood into the brain.

Recovery depends on the cause and the size of the tissue damage in the brain. Approximately 90% of recovery occurs within 3 months. The prognosis is generally better for younger individuals. Approximately 50% - 70% of individuals who had a stroke will regain function.

Depression has been shown to affect ⅓ of individuals who experience a stroke. Stroke has an enormous impact on caregivers.

Transient Ischemic Attacks (TIA)
- People who have had TIAs are 9.5x more likely to have a CVA than age matched peers without TIA
- ⅓ of TIA sufferers will have a stroke within 5 years

Signs and symptoms
- Sudden onset of:
  - numbness or weakness of the face, arm, or leg on one side of the body
  - confusion, trouble speaking, or understanding
  - trouble seeing in one or both eyes
  - trouble walking, dizziness, loss of balance or coordination
  - severe headache

FAST Test for Stroke
- F- Facial weakness: can the person smile? Has their mouth or eye drooped?
- A- Arm weakness: can the person raise both arms?
- S- Speech problems” can the person speak clearly and understand what you say?
- T- Time to call 911

Individuals who suffer a stroke may experience:
- spasticity, causing stiff, tight muscles
- problems with math, wrong use of yes and no, identifying right from left, naming objects, language
- problems recognizing familiar faces, dressing, reading and doing simple math, paying attention or staying alert, laughing or crying at wrong times, making decisions or remembering
Parkinson’s Disease (Hunt, 2014)
Parkinson’s Disease is a degenerative disorder of the basal ganglia. The pathological hallmark is loss of dopaminergic neurons in the substantia nigra. The disease is characterized by slow and decreased movement, tremors, rigidity, bradykinesia, gait dysfunction, and postural instability.

People who have Parkinson’s Disease should not be driving because of reduced reaction time, involuntary movements, cognitive problems, visual problems, drowsiness, and freezing.

Strategies to help create spontaneous movement from freezing spell:
- No multi-tasking
- March in place
- Auditory cueing
  - walking with rhythmic auditory stimulation such using music
- Visual cueing:
  - stepping over lines, someone’s foot, laser pointer, or cane.

Grooming:
- electric toothbrush or child’s size toothbrush
- electric razor and sit while shaving with arms supported by counter or table

Dressing:
- button aide
- dressing stick
- sock aide
- long handled shoe horn

Eating:
- insulated dish or hot plate
- plate with sides
- rocker knife
- special forks/spoons
- drinking cups with lids

Swallowing advice:
- Always sit upright when eating, drinking, and taking pills
- Chew small amounts of food well and swallow it before adding more
- Put fork down between bites to slow yourself down
- Swallow twice after each bite
- Take small sips when drinking. Alternate bites of food and sips. This helps clear food from the mouth and throat.
- Keep chin slightly down or at least parallel to the table

Home safety:
- remove rugs and coffee tables, reduce glare
- firm couches make it easier to get out from

Resources:
- National Parkinson’s Foundation, Inc.
II. Education/School
   a. How to get accommodation services
   b. Assistive technology
   c. Financial assistance
      i. Books, computer
   ii. Financial aid
Appendix E

**SWOT Analysis**

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses (from OT program perspective)</th>
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</thead>
<tbody>
<tr>
<td>• Use a neuromuscular re-education approach to restore normal movement.</td>
<td>• Training does not incorporate occupation-based exercises.</td>
</tr>
<tr>
<td>• Conduct an extensive evaluation with the client at intake through 10 sessions over 2 weeks.</td>
<td>• Exercises are not conducted in a natural environment.</td>
</tr>
<tr>
<td>• Have contacts with National U.S. and Portland pounders wheelchair rugby teams, being able to recruit athletes from the team and provide additional occupation options for their clients.</td>
<td>• Building was originally a warehouse, so the temperature inside can get cold.</td>
</tr>
<tr>
<td>• Employ a variety of trainers of various backgrounds (chiropractic, physical therapy, athletic training).</td>
<td>• The Adapt Advanced Area can get crowded when there are multiple trainers working with clients.</td>
</tr>
<tr>
<td>• Low client and trainer turnover (some clients have had same head trainer for over 8 years).</td>
<td>• Yearly evaluations of clients’ progress are not conducted formally, only by client request.</td>
</tr>
<tr>
<td>• While each client has one trainer assigned to them, clients are assigned to see different trainers during each session to incorporate variety.</td>
<td>• Clients are not provided compensatory strategies to accomplish tasks while they are initially building up ROM/strength.</td>
</tr>
<tr>
<td>• Client centered, working on returning neuromuscular function to help clients achieve their goals.</td>
<td>• There is no psychosocial evaluation as part of initial or follow up evaluations.</td>
</tr>
<tr>
<td>• Trainers communicate clients’ daily muscle conditions well through verbal communication or notes when clients are switching trainers.</td>
<td>• ADAPT does not have community partnerships currently in place that would refer clients from local hospitals or rehabilitation centers.</td>
</tr>
<tr>
<td>• Are honest with clients and considerate of their financial and mental burnout when recommending how often they come for training.</td>
<td>• All Advanced clients pay out of pocket and it can become expensive.</td>
</tr>
<tr>
<td>• One of very few places that specialize in working with SCI clients on neuromuscular re-education.</td>
<td></td>
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<tr>
<td>• Environment incorporates a universal design approach.</td>
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<tr>
<td>• Gives clients a home program to enable them to continue training on their own time.</td>
<td></td>
</tr>
<tr>
<td>• Is a strong philosophy driven program that provides clients with more independence.</td>
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</table>
- The ADAPT Training philosophy has a good buy in from staff, as many of the educational materials have been written by ADAPT supervisors and staff attends ADAPT Training fitness classes together.
- Provides a unique niche acting as a training facility that SCI individuals can attend and receive one-on-one training.
- Advanced has a variety of adaptive training equipment such as Total Gym, Active Assistive Gait Trainer and a Standing Frame.
- Clients and staff willing to assist students.
- Stated interest in developing an OT program within Advanced.

<table>
<thead>
<tr>
<th>Opportunities</th>
<th>Threats</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Project could increase organizations community visibility and referrals.</td>
<td>- Advanced serves a unique clientele and a competitor serving the same population could take away potential and current clients.</td>
</tr>
<tr>
<td>- Project could expand amount of services and knowledge possessed by Advanced staff.</td>
<td>- Clients train outside in parking lot, where there is a lot of car traffic.</td>
</tr>
<tr>
<td>- With success of OT program with clients with SCI, could expand to other populations to provide a treatment for a wide variety of individuals.</td>
<td>- Some clients have limited time and live farther away.</td>
</tr>
<tr>
<td>- Use of internet and social media to advertise services.</td>
<td>- Economy changes that will affect the amount of money clients can spend on Advanced.</td>
</tr>
<tr>
<td>- Develop innovative model that integrates OT and Advanced philosophy of enhancing clients’ independence and performance capacity resulting in increased social participation and well-being.</td>
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### Appendix F
Initial action plan for project

<table>
<thead>
<tr>
<th>Date</th>
<th>Description of Action</th>
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</table>
| January  | Recruit participants for pilot occupational therapy session  
- Create flier to recruit Advanced clients to participate in pilot sessions.  
- Distribute recruitment fliers to on-site supervisor by January 15th  
- Schedule pilot sessions  
- Create pre and post questionnaires on opinions of occupational therapy that will be given to participants in the sessions  
- Review and critique various evaluations that are used for individuals with spinal cord injuries to be used in the pilot sessions  
- Contact Rehabilitation Institute of Oregon in Portland, Oregon Rehabilitation Center in Eugene, the Northwest Spinal Cord Injury System in Seattle, and the Independent Living Resources Center in Portland to see if they have a current resource manual or documents that can be built on for the Northwest resource manual for SCI. |
| February |  
- Start to run pilot occupational therapy sessions over 3-6 weeks  
- Begin writing pages for resource manual (based on information provided from observation and client/staff interview).  
- Create questionnaire to give staff to measure how staff feel OT services will benefit clients. |
| March    |  
- Finish occupational therapy pilot sessions  
- Organize data and collect resources relating to results of pilot occupational therapy session.  
- Assemble and write pages for resource manual  
- Write up results of project. |
| April    |  
- Prepare Research and Practice Symposium presentation  
- Address any final details that come up as part of the pilot study  
- Finish assembling resource manual  
- Distribute resource manual to Advanced by April 11th  
- April 25: Practice Presentation for Research and Practice Symposium.  
- May 2: Present at Research and Practice Symposium  
- Post project to Pacific University common knowledge after final edits |