Educational In-service and Training Lab: Proper Body Positioning and Safety for Mothers of Children with Disabilities

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This project, submitted by Tara Curtis, has been approved and accepted in partial fulfillment of the requirements for the degree of Master of Occupational Therapy from the University of Puget Sound.

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Context

Women who give birth to a child with a mental or physical impairment in Mexico are typically believed to be "at fault" for the disability by their family (Skinner, Bailey, Correa, & Rodríguez, 1999). As a result, men often abandon their family, leaving the mother and children in poverty (Skinner et al., 1999). Bree Lair, MOTR/L, co-founder and director of International Service Learning for Push International, a non-profit organization that works closely with Padres y Compadres Pediatric Therapy Center in Mazatlan, Mexico stated that more than half of the mothers caring for a child with disabilities at their clinic are single mothers in poverty (personal communication, February 17, 2012).

The mothers at Padres y Compadres Pediatric Therapy Center lack education about proper body mechanics when transferring and handling their children (J. Lair, personal communication, January 8, 2012). Several studies indicate that the most effective tool for injury prevention for caregivers is education (Brown & Mulley, 1997). More specifically, research has shown that with increased education about proper body mechanics for activities that require lifting, carrying, and pushing, the chance of injury has decreased (Maynard & Blain, 2002).

Injury prevention is especially important for mothers at Padres y Compadres because they are at high risk for injury due to their existing hardship and role as single mothers. Occupational therapists work with individuals to promote safe body movements, positioning, and transfers, and in areas such as child rearing, health management, and health maintenance (American Occupational Therapy Association [AOTA], 2008). Occupational therapy services focus on outcomes of prevention and quality of life, as well as, education on injury prevention. This educational project was presented to the mothers at Padres y Compadres, providing them

knowledge to protect their own bodies from injury, which in turn will allow them to provide sustained child rearing care.

Background

Influences that Shaped the Role of Women in Mexico

Over time there have been four influences that have shaped the role of women in Mexico: catholicism, gender roles, the economic system, and educational system. One influence is the Roman Catholic Church, which has greatly shaped the attitudes, culture, and history of Mexico. This religious faith has bonded families from first to fourth-generation relatives by traditionally having them live within the same household (ProQuest LLC & Brigham Young University (BYU), 2012). Religious values have structured family life, which has shaped the traditional gender roles of both males and females.

Another influence is the traditional gender roles. Typically the oldest male within the home is looked to as the leader of the family, while the primary role of women are to carry out domestic duties of the household, such as cooking, cleaning, sewing, and childcare (ProQuest & BYU, 2012). Vaughan, who writes of Latin American perspectives stated, "the ideological family concept in Mexico is to preserve family life by limiting working women and children to fair wages and shorter hours, and to keep the family together at home as much as possible" (1977, p. 136). This ideological concept has fluctuated back and forth for decades in Mexican society, beginning in the mid-1800s. There have been attempts to strengthen the woman's primary role in the home; however, the defined gender roles has made it difficult for women to obtain political rights, a struggle that has been exacerbated by a history of political and economic conflict within the Mexican government (Vaughan, 1977).

Another influence on women's roles has been driven by economics. Recently, there has been a significant increase of women entering back into the workforce to support their children financially, due to the economic crisis in Mexico (Guendelman, Malin, Herr-Harthorn, & Vargas, 2001). This influence from the economic system has helped to shape women's role in Mexico.

Additionally, the lack of educational opportunities for women has contributed to women's roles in Mexico. Reich-Erdmann (1999) stated that at a national level, free elementary educational services for children are to be provided. The northern Mexican states have an average educational level equal to seven years of school, compared to the majority of the population in southern Mexican states that have an average of a first grade education level (Reich-Erdmann, 1999).

Single mothers in Mexico. The lack of rights for women in Mexico may contribute to an underlying tension between religious values, a political system, and social status for single mothers. One study by the Chamber of Deputies of Mexico, reports that 880,000 Mexican women are single mothers, 30% of whom live in poverty (Rodríguez, 2013). Nine out of ten single mothers have children under the age of 18 (Rodríguez, 2013). In addition, six out of ten single mothers reported living with their parents (Rodríguez, 2013). Due to the several influences that shape women's role in Mexico, raising a child as a single mother is seen as taboo causing these women to be subjects of discrimination (Rodríguez, 2013). This same study reports that single mothers are more likely to be segregated when seeking housing and medical services, as well as, often being prohibited from attending community and cultural events (Rodríguez, 2013).

In addition to the many societal pressures towards single mothers, financial barriers are a primary issue. It has been shown that about 40% of Mexicans live in poverty, which makes funding for health services scarce (ProQuest & BYU, 2012). In rural and southern areas of Mexico, people still have limited access to even the most basic resources (ProQuest & BYU, 2012). To eliminate costs, a working mother's main source of childcare in urban Mexico is typically unpaid support provided by relatives or friends (Wong & Levine, 1992).

People with Disabilities in Mexico

It has been identified by the census of Mexico that the population of disabled men and women in Mexico is about 15.7 million (Consejo Nacional para Prevenir la Discriminación y Consejo Nacional para el Desarrollo y la Inclusión de las Personas con Discapacidad (CONADIS), 2012). Within this population, 9.1% of children have been speculated to have a disability (Consejo Nacional para Prevenir la Discriminación y CONADIS, 2012). Diagnoses of cerebral palsy (CP), deafness, blindness, epilepsy, and mental retardation were further researched regarding the number of children with disabilities; however, results from the study were inconclusive (Poblano, Arteaga, & Garcia-Sanchez, 2009), yet one can surmise, that the Mexican government and general public lack awareness of people with disabilities in Mexico.

Padres y Compadres

Padres y Compadres is a children's rehabilitation center and daycare center located in Mazatlan, Mexico. The center functions as a co-op five days a week. Mothers of children with disabilities work together alongside staff members and therapists to provide assistance to their children with disabilities in various therapy treatments (Push International, 2008). Mothers are highly encouraged to participate in the treatment process with their child to ensure that rehabilitation carries over into their home life (R. Correa, personal communication, January 8

2012). This facility provides mothers, their children with disabilities, and siblings, with shower facilities, two or three meals per day, and state of the art therapy services (B. Lair, personal communication, February 17, 2012). Services for rehabilitation include occupational therapy, physical therapy, speech therapy, and psychology (Push International, 2008). The center provides a sensory integration room, electro-stimulation room, vestibular stimulation room, hippo-therapy arena, and a therapy pool (Push International, 2008). Services are provided to children with neurodevelopmental disabilities, such as CP symptoms, as well as other disabilities, such as microcephaly, Down syndrome, spina bifida, and autism (Push International, 2008).

For children to receive services at this facility, fees are required. Fees are based on the mother's ability to work at the center, along with the family's ability to pay (Push International, 2008). More than half of the mothers who bring their children to Padres y Compadres are single mothers living in poverty (B. Lair, personal communication, February 17, 2012). At this facility, mothers are provided with various work opportunities. There are work opportunities in an attached internet-café, sewing center, preparing meals in the kitchen for the children and staff, and working as a therapy aide with their children, along with children who are dropped off for daycare services. The primary job duties include feeding, bathing/showering, toileting, dressing, and participating in therapy (stretching, range of motion, and positioning) with the children at the facility (Push International, 2008). Señora Rita Correa, the founder and director of Padres y Compadres, states that the facility is primarily funded by generous donations, state grants, and the help of international non-profit agencies (personal communication, February 6, 2012). As a result, the facility is able to continue serving children and their families.

During the weekdays at Padres y Compadres, the mothers are routinely engaged in activities of daily living (ADL) with their children. Children are being lifted, carried, repositioned, and transferred onto various levels and surfaces, such as the ground, wheelchair, floor mats, tables, toilets, and highchairs. Children are transferred primarily by the mothers at the facility for ADL tasks, such as bathing/showering, eating, dressing, and toileting. Currently at Padres y Compadres, mothers perform these tasks with their children without any proper training or formal education about protecting themselves from injury. When lifting a child off the ground onto a wheelchair, the adult typically picked up the child by pulling up on the child's upper arms in a fast, jerky motion, instead of using two hands around the trunk (B. Lair, personal communication, February 15, 2012). This maneuvering technique is unsafe and may cause damage to both the child and the adult. In addition, the mothers typically bend their back rather than bending at their knees to pick up their children, which places an increasingly high amount of unnecessary pressure on their spine (B. Lair, personal communication, February 15, 2012).

Low Back Pain

Due to excessive pressure on the spine from lifting, the mothers at Padres y Compadres have been observed wearing back-braces throughout their typical day to protect their backs from injury and for management in low back pain. However, it has been reported by the Centers for Disease Control that back-braces are not associated with decreasing risk of injuries or reducing low back pain (Centers for Disease Control and Prevention, 2012). The mothers of children with disabilities are at high risk for sustaining injuries on the job. Their work as a primary caregiver is associated with transferring children and repetitive heavy lifting on a daily basis. The exposure to the physical demands of the job results in damaging effects to the spine and body. Multiple studies have been conducted to investigate the psychological and physical distress to

caregivers' health (Brehaut et al., 2004; Brown & Mulley, 1997; Raina et al., 2005; Tong et al., 2002; & Tong et al, 2003). In the nursing profession, heavy lifting, poor physical fitness, and improper lifting techniques have all been identified as risk factors that may increase a person's chance of injury (Tong et al., 2003). Other factors associated with injury are increased depression, anxiety, and fatigue suggesting education for prevention should focus on both psychological and physical components (Brown & Mulley, 1997).

Low back pain (LBP) in adults is a common cause of disability and financial loss (Bos, Krol, Van Der Star, & Groothoff, 2006; La Villa, 1995; Nelson & Baptiste, 2004; Tong et al., 2002; & Tong et al., 2003). One of the major risk factors for LBP is improper body mechanics (La Villa, 1995). Today in the United States, roughly five and a half million adults suffer from LBP per year (La Villa, 1995) and LBP exceeds an estimated 70% prevalence rate of occurring within one's lifetime (Tong et al., 2003). Within the United States, an annual cost of LBP disabilities has been estimated to be about $50 billion (Tong et al., 2003). It is common for most people to fully recover within three months; however, after the first episode of injury there is an increased likelihood for recurrence (La Villa, 1995). In addition, the research proves that the subsequent incidence to LBP becomes more severe (La Villa, 1995).

Injury prevention. Much research has been conducted on ergonomics and transfer training for health care workers, primarily examining the nursing profession, caregivers, and high-risk medical employees. Lift equipment, video training, demonstrations through required in-services, annual hands-on training programs, and work hardening programs have been different ways companies have been able to educate their employees about the importance of injury prevention (Bos et al., 2006; Fanello, Jousset, Roquelaure, Chotard-Frampas, & Delbos, 2002; Laflin & Aja, 1995; La Villa, 1995; Lieber, Rudy, & Boston, 2000).

Conversely, findings from a study by Brown and Mulley indicated that, "many caregivers are often poorly trained, equipped, and at high risk of injury" (1997, p. 21). Many studies have been conducted to investigate the prevention of LBP through body mechanics education (Bos et al., 2006; Fanello et al., 2002; La Villa, 1995; Nelson & Baptiste, 2004). Fanello et al. (2002) conducted a two-year study on education-based prevention training program of LBP and working conditions for health-care providers. According to Fanello et al., results suggest that both an education program and 'on the job' instruction are necessary for an effective intervention to significantly decrease the incidence of LBP, compared to an education only program. The impact of this study allowed workers to receive knowledge and training on LBP, patient handling and ergonomics, as well as on-the-job ergonomics instructions.

Similarly, a systematic literature review conducted by Bos et al. (2006) examined 13 studies from various databases that met specific criteria to gain more insight about the effects of occupational interventions for prevention of LBP in health care professionals. After analyzing the methods, the results were significant in proving that combined training and education alone were not sufficient enough to decrease LBP. Rather, to decrease LBP, an ergonomic intervention, such as use of mechanical or other aide equipment, must be combined with the training and education to be most effective (Bos et al., 2006), with overall goal to have little to no stress placed on one's spine during heavy lifts or transfers. Although research indicates use of aide equipment to help during lifting, this is not a feasible method at Padres y Compadres. Padres y Compadres does not have access to these types of items, due to financial reasons and limited space demands within their facility. However, education on proper body mechanics and safety are feasible and valuable options for Padres y Compadres.

According to Maynard and Blain (2002), an ergonomic educational program should be provided to all men and women who handle children. Their program specifically provides mothers with education about ideal postural awareness, body mechanics, and joint posture techniques to prevent debilitating injuries when performing child care tasks. In their program, Maynard and Blain focused on the specific daily job requirements and tasks of a caregiver, including lifting the child into a car seat or changing a baby's diaper.

An educational in-service and training lab needed to be relevant to specific daily job requirements when provided to the mothers at Padres y Compadres (B. Lair, personal communication, February 17, 2012). Some of the primary childcare duties include lifting a child to and from their wheelchair to a shower bench or a toilet in the bathroom, transferring a child to and from their wheelchair to a high-chair for breakfast in the kitchen, and transfer to and from a wheelchair onto a floor mat in the therapy gym (B. Lair, personal communication, February 17, 2012). Currently, no standard formal education or training is provided to mothers about use of good body mechanics, prior to or while working with children at Padres y Compadres (B. Lair, personal communication, February 17, 2012). Thus, the purpose of the project was to provide an educational in-service and training lab for mothers of children with disabilities at Padres y Compadres in Mazatlan, Mexico.

Project Procedures

Overview

The initial focus of this project's targeted population was mothers of children with disabilities at Padres y Compadres; however fathers, staff members from Padres y Compadres, and nursing staff from a nearby skilled nursing facility also attended the in-service and training lab. Therefore, the word "caregivers" will replace "mothers" throughout the remainder of this paper. Over the course of this project, parents of children with disabilities and other caregivers were informed about safe and effective body mechanic techniques for lifting, carrying, and transferring a child, to prevent injury to their own body when performing daily caregiver activities. The in-service and training lab was divided into two days. Day One included the in-service, which involved a presentation, multiple demonstrations, and hands-on practice on specific techniques from the presentation for the caregivers. The presentation focused on health and well-being, an introduction to body mechanics, and body mechanics in daily routines. Day Two was the training lab. This training lab provided the caregivers with an opportunity to integrate and incorporate their new knowledge with hands-on practice in their natural environment. The hope of presenting the project in this two-day format was to provide auditory, visual, and kinesthetic feedback learning to best integrate the new information to memory. Providing the information in various formats enabled caregivers to utilize the tools and techniques in everyday routines to provide a safe environment for both the caregiver and the child. Following the training lab, caregivers completed an exam and received a diploma, if they passed the exam.

Several documents were created for this project: a power-point presentation about proper body mechanics, a photonovela that highlighted main points of the power-point, via a soap story format, four posters that focused on proper body mechanics principles for toilet transfers, shower/bench transfers, floor to wheelchair transfers, and highchair transfers, and an exam that

questioned the caregivers knowledge, with a diploma given if the caregivers passed the exam. The documents were provided to each person who attended and master copies were provided to the facility as a resource for the future.

Project Design and Implementation Process

Preparatory work was required prior to the implementation of the project. In order to prepare the content for the presentation, many key elements were thoroughly researched, such as primary care duties of mothers at Padres y Compadres, common diagnoses of children who attend the facility, and safe and effective transfer techniques. Based on the research, content was customized to fit the needs of the mothers and organized into a power-point presentation.

When considering mothers from the Mexican culture, it was essential to provide information in a culturally relevant way to ensure it was easily understood by the intended audience. Findings suggested telenovelas (video stories), cafecitos (social discussion groups), and photonovelas (picture books similar to comic books) to be successful communication methods for training and education programs between American and Hispanic cultures (Crist, 2005; Dillon, 2007). Therefore, a photonovela was created for this project, as well as four laminated posters, an exam, and a diploma. Additional materials, supplies, and equipment were also purchased and collected for the project.

Communication between student therapist, Push International, and Padres y Compadres was necessary in order to arrange adequate space to carry out the presentation and training lab, coordinate translation services, prepare travel arrangements, and answer important logistical questions. Prior to traveling to Mexico, volunteers met at the University of Puget Sound in Tacoma, Washington to practice specific transfer techniques and be informed of the project

details. Additionally, the in-service was rehearsed at University of Puget Sound with a translator using the power-point presentation and rented equipment to simulate the event.

Day One, volunteers began setting up the in-service 45 minutes before the intended start time. Thirty chairs were arranged to clearly view the presentation. A projector, two stations with three different types of lifts on each side of room (one table, three 5-10 lbs. sand bags, three thick blankets, and one chair), and a check-in table were set up. Volunteers monitored the check-in table and babysat the children in another area of the facility during the in-service. When caregivers arrived, they signed a photo release form, and collected a copy of the power-point slides and photonovela. All documents were available in Spanish and English.

Day Two, volunteers began setting-up the training lab 20 minutes before the intended start time, which included both the testing room and the four stations (kitchen, bathroom, shower area, and gym) around the Padres y Compadres campus. After the training lab, caregivers completed an exam to assess their knowledge and were provided a diploma after successfully passing the exam.

List of Skills and Knowledge Needed

Primary skills and knowledge needed to successfully provide a thorough educational in-service and training lab for the intended population of mothers and caregivers of children with disabilities that focused on proper body mechanics and safety during daily childcare routines, included:

- An understanding of mother's roles and routines at Padres y Compadres
- An understanding of common diagnoses at Padres y Compadres (i.e. Cerebral Palsy)
- An understanding of injury prevention
- An understanding of proper body mechanics and safe transfer skills of children

- Competency in organizing, planning, and finding available resources
- Competency in communication and public speaking skills
- Ability to collaborate with multiple key players and thesis advisor
- Knowledge of the Mexican culture and international traveling
- Knowledge of activity analysis with ability to "think on your feet"
- Knowledge of the Model of Human Occupation (Kielhofner & Burke, 1980)
- Knowledge of the Occupational Therapy Practice Framework (AOTA, 2008)

Materials/Supplies/Equipment Needed and Estimated Cost

The following materials were needed to successfully complete the educational in-service and training lab on proper body mechanics:

- Paper for documents (photo release form, presentation slides, photonovela, exam, and diploma) and pens
- Access to a copy machine and laminator
- A binder, thumb-drive, and blank CD
- A room with chairs and large tables
- Gait belts, a wheelchair, floor mats, 5-20 pound weights, and step stool
- Access to a toilet, highchair, and shower chair/shower bench
- A computer or laptop, with projector, an outlet adaptor, and extension cords
- Volunteers

The number of caregivers who attended the in-service and training lab, determined the supplies needed. The 2013 in-service and training lab at Padres y Compadres cost approximately five hundred dollars, excluding travel expenses and housing.

Product Description

The final product was a three hour in-service and four hour training lab on proper body mechanics provided at Padres y Compadres. As previously stated, the initial focus of the project's targeted population was mothers and caregivers of children with disabilities at Padres y Compadres; however, fathers, staff members from Padres y Compadres, and nursing staff from nearby skilled nursing facility also attended the in-service and training lab. Therefore, this information was provided to a wider population than expected. All individuals who attended the two-day in-service and training lab lacked knowledge on injury prevention, and thus greatly benefitted from this education. Below is a description of the in-service and training lab.

Presentation content began with a health and well-being section to help caregivers reflect on their own health and how their health may be at risk when working with children. Throughout this section of the presentation, emphasis was placed on the caregiver's health as it directly impacts the child's well-being (see Appendix A).

This section was followed by an introduction to proper body mechanics, which consisted of two subsections: principles of body mechanics for lifting and for transfers. Instruction began with basic background information based on research about body mechanics and statistics on injury prevalence for caregivers in the United States, followed by information regarding back pain and its association with lifting and transferring. Additionally, education about the use of back braces, gait belts, sliding boards, and other adaptive equipment was provided. Nine principles were outlined, followed by a demonstration of each principle: 1) simultaneously bend the hips and knees, 2) keep ear/hip/shoulder in alignment, 3) keep body square to object, 4) keep feet shoulder width apart, 5) keep object close to body before movement, 6) maintain trunk control during rise with no spinal torque, 7) use proper foot placement (one foot forward), 8) no

forward trunk flexion, and 9) align object in midline (McCauley, 1990) (see Appendix A). A translator interpreted the presentation into Spanish, with Spanish power-point slides (see Appendix A).

During the presentation, caregivers separated into two groups to practice these techniques. The hands-on practice provided caregivers with the opportunity to incorporate multiple principles into each lift. Two occupational therapy students and one translator were with each group to provide feedback and answer questions. The group reconvened to reflect on their hands-on experience, followed by further education on stand-pivot, squat-pivot, and sliding-board transfers. To conclude the in-service, caregivers were asked to read the photonovela for homework (see Appendix C).

For the training lab, caregivers were divided into three separate groups. Two groups focused on large and small children, while the third group focused on large children and adults. The groups rotated around four stations at the facility to practice transfer skills with a child of the appropriate size. At the stations, the following wheelchair transfers were practiced: 1) transfers to and from the toilet in the bathroom, 2) transfers to and from the shower bench /shower table in the bathroom, 3) transfers to and from the floor mats in the therapy gym, and 4) transfers to and from highchairs in the kitchen. Two trained student therapists and one translator were at each station, while this student's thesis advisor and practicing occupational therapist, floated between the four stations. "On the spot" activity analysis skills were used to provide feedback to the caregivers. Additional demonstrations, problem solving, and alternative strategies were also provided. After the training lab, mothers were asked to complete a five question exam to assess their knowledge (see Appendix B). Upon successful completion, they received a personalized diploma, signed by this student and this thesis advisor (see Appendix B).

Additionally, a resource manual was provided to Sra. Correa, containing the documents used in the in-service and training lab, and four posters (see Appendix C). Paper and digital copies of all documents were provided in Spanish and were loaded on a thumb-drive and a CD for future use.

Outcome of Project

Project Goals and Objectives

Goal 1. Upon attending the in-service and training lab, caregivers of children with disabilities will be educated about techniques and strategies that will prevent injury while performing daily child care routines and activities with the child.

Objective 1. After attending the in-service and training lab, caregivers of children with disabilities will be able to independently identify at least three body mechanic techniques to prevent injury when caring for the child.

Objective 2. After attending the in-service and training lab, caregivers of children with disabilities will be able to independently implement at least three body mechanic techniques to prevent injury when caring for the child.

This goal was met in January 2013. During the in-service and training lab, caregivers were able to identify by stating and implementing at least three body mechanic techniques to prevent injury when caring for the child.

Goal 2. Upon attending the in-service and training lab, caregivers of children with disabilities will have a greater knowledge and understanding about the impact of improper body mechanics on daily childcare activities.

Objective 1. After attending the in-service and training lab, caregivers of children with disabilities will be able to independently identify the most common type of injury caused by use of improper body mechanics.

Objective 2. After attending the in-service and training lab, caregivers of children with disabilities will be able to independently identify at least two consequences of how an injury could impact their life as a caregiver.

This goal was met in January 2013. All caregivers successfully answered test question correctly by identifying the most common type of injury caused by use of improper body mechanics. During the in-service, caregivers were able to identify at least two consequences of how an injury could impact their life as a caregiver.

Goal 3. Upon attending the in-service and training lab, caregivers of children with disabilities will be educated about the strategies necessary for safely handling various day-to-day childcare tasks in areas specific to toilet transfers, shower bench or table transfers, highchair transfers, and floor mat transfers.

Objective 1. After attending the in-service and training lab, caregivers of children with disabilities will be able to independently identify at least three strenuous caregiver tasks that would benefit from using proper body mechanics to prevent injury.

Objective 2. After attending the in-service and training lab, caregivers of children with disabilities will be able to independently implement at least three strategies necessary for daily caregiver tasks that would benefit from using proper body mechanics to prevent injury.

This goal was met in January 2013 when caregivers attended the in-service and answered questions posed by the student therapist about strenuous caregiver tasks. Also, caregivers were able to implement three strategies necessary for daily caregiver tasks during the training lab.

Outcomes

The in-service was attended by twenty caregivers, comprised of mothers, fathers, staff members from Padres y Compadres, and three nursing staff workers from a nearby adult family home within the local community. The training lab was also attended by twenty caregivers. Of these caregivers who attended the training lab, approximately five did not attend the in-service, due to work scheduling conflicts. Meanwhile, approximately five caregivers who attended the in-service did not attend the training lab, again due to work scheduling conflicts.

A research study conducted by another graduate student at University of Puget Sound in the Occupational Therapy Program looked at the effectiveness of the two-day in-service and training lab on body mechanics for lifting and transferring in regards to how well parents with a child diagnosed a disability were able to learn and demonstrate the techniques they had been taught (Thierry, 2013). Three parents of children with disabilities participated in the research study (Thierry, 2013). The study observed and scored the participants body mechanics as they performed the same four transfers taught at the training lab stations, both prior to and after completing the in-service and training lab. Findings from the occupational therapy student's research study indicate the three participants improved in performance in the four transfers for safety in body positioning, and statistically significant in floor transfers, demonstrating the participant's ability to incorporate the feedback provided (Thierry, 2013).

As a result of this project, Padres y Compadres now has a resource manual to educate current and future caregivers of children with disabilities about proper body mechanics when transferring children. The caregivers of children with disabilities who attended the in-service and training lab obtained knowledge and skills about proper body mechanics to prevent injury during daily childcare activities. Success was determined through completion of a five-question

multiple-choice exam to assess their knowledge about proper versus improper use of body mechanics during daily childcare activities and through skilled observations of caregivers completing four different transfers with a child. The desired outcomes of the project were met when all twenty caregivers successfully passed the final exam.

Caregivers and Sra. Correa at Padres y Compadres, directors from Push International, and volunteer students from University of Puget Sound found the in-service and training lab to be beneficial. Parents remarked throughout the educational project on the importance of learning proper body mechanics to keep their bodies safe from injury. Mr. Lair reported that parents and staff members were eager to learn new information at the start of the project, and then were "beaming" with confidence after successfully completing the examination and receiving their diplomas. Volunteers and student therapists stated that parents smiled and looked proud when receiving their diplomas. Sra. Correa reported this project opened the doors for Padres y Compadres to provide greater opportunities for the facility to educate its Mazatlan community and other neighboring cities within the state of Sinaloa, Mexico.

Implications for Occupational Therapy

The information provided through this project is a direct reflection of the occupational therapy profession, as its content is relevant to the defining principles represented throughout the occupational therapy framework. Engagement in everyday functional activities, such as bathing, dressing, and toileting are important aspects of a person's life to maintain a healthy well-being (AOTA, 2008). Similarly, a functional activity for a caregiver is child rearing (AOTA, 2008). This basic principle of "engagement in functional activities" is the root of occupational therapy. Caregivers of children with disabilities are at a high risk for injury, due to the repeated nature of lifting their children for repositioning. Occupational therapists are skilled at activity analysis,

which allows them to be in a good position to see where changes can be made to reduce the likelihood of injury. Therefore, knowledge about safety and injury prevention while performing these functional activities may reduce the likelihood of injuries to the caregivers and provide a safe environment for the children (AOTA, 2008). A primary focus of this project was to teach proper body mechanics and safety to caregivers of children with disabilities at Padres y Compadres about injury prevention. As a result, this project provided caregivers with the knowledge and basic skills to use during their daily child-care routines to prevent injury to themselves, as well as the children.

Occupation Based Model

One of the client-centered occupational-based models commonly used in occupational therapy practice is the Model of Human Occupation (MOHO). The primary focus of this model is to address an individual's motivation, routine patterns, performance skills, and environmental influences on an occupation (Kielhofner & Burke, 1980). According to this model, a person's internal influences are linked by their external environmental factors, producing a dynamic outcome. This outcome is measured by a person's ability to engage in an occupation, based on their inner capacities, motives, and patterns of performance. Occupations are chosen, patterned, and influenced by three internal elements of a person, including volition, habituation, and performance capacity: Volition is the motivation for people to choose, which is influenced by personal causation, values, and interests; habituation is the process of organizing a person's repeated actions into patterns and routines and performance capacity refers to the ease with which a person can perform a task in relation to their mental and physical abilities. In contrast, the external environment is characterized by both physical and social dimensions, which in turn

influences the volition, habituation, and performance of an occupation (Kielhofner & Burke, 1980).

In addition to the internal influences of a person and the external environment, MOHO looks at three dimensions in what a person does. It identifies occupational participation, occupational performance, and occupational skill (Kielhofner & Burke, 1980). Occupational participation is described as activities of daily life, work, or leisure activities that are important to one's life, whereas occupational performance refers to participating in a task that is related to an important aspect in life. Through occupational performance, purposeful actions become occupational skills (Kielhofner & Burke, 1980). MOHO helps therapists support positive adaptations for client occupations through routines, thoughts, and feelings about themselves (Kielhofner, Forsyth, Kramer, Melton, & Dobson, 2009). Overall, MOHO is driven by the assumption that any change within an intervention should be geared toward improving the person's engagement in occupations.

MOHO guided my project with regards to the caregivers at Padres y Compadres due to its strong emphasis on motivation, routine patterns, performance skills, and environmental influences, which influence overall occupational performance. This model explains how the underlying motivations of the caregivers at Padres y Compadres influences the way occupations are performed in their daily routines. With an injured caregiver, children would be unable to attend Padres y Compadres, resulting in a decreased quality of life for both the caregiver and child. A caregiver's motivation to prevent injury is the primary goal of this project. By providing a motivational and supportive educational presentation, this project's desired outcome was to increase healthy occupational performance of caregivers when participating in daily child-

care routines. In addition, changes to break poor habits were emphasized to ensure that the caregivers use proper body mechanics as a new part of their daily routines.

Application of the Occupational Therapy Practice Framework

The Occupational Therapy Practice Framework (OTPF) guides occupational therapy practice by thoroughly describing all the components of the profession, which comprises both the domain and process. The domain includes all meaningful daily life activities that contribute to various aspects of a person's life (AOTA, 2008). These occupations range from self-care tasks, to work and education activities to leisure and social participation (AOTA, 2008).

The second component of the framework is the occupational therapy process. "The process outlines the way in which occupational therapy practitioners operationalize their expertise to provide services to clients. This process includes evaluation, intervention, and outcome monitoring (AOTA, 2008, p. 646)." The domain and process of the Occupational Therapy Practice Framework act to guide occupational therapists in increasing a person's ability to participate in meaningful daily life occupations, resulting in an improved quality of life (AOTA, 2008).

The primary focus of the project addresses instrumental activities of daily life (IADL) within a person's performance patterns. IADL are described as activities that are not required for fundamental functioning in daily life, but are deemed necessary for independent living within a community (AOTA, 2008). This project addressed the IADL of child rearing, as the primary role of a caregiver during daily care routines. The secondary focus of this project addressed the outcome approach of disability prevention. The focus of intervention looked at the performance skills, performance patterns, and context of the physical environment, activity demands, and client factors of the caregivers at Padres y Compadres. For example, the training lab analyzed

the habits of caregivers of children with disabilities in their natural environments during typical morning childcare routines. Caregivers are at risk for occupational performance problems due to the nature of repetitive lifting and carrying of children. This educational in-service and hands-on training on proper body mechanics and safe lifting techniques provided caregivers with the skills necessary to prevent back injury, thus enabling them to continue to engage in the occupation of child-rearing.

Limitations

There were several limitations to this project. First, the educational presentation provided focused more on smaller sized children versus larger grown children and adults. This made the training lab difficult when attempting to use the proper body mechanics with adult-sized children. A two-person lift technique was introduced by the thesis advisor who is a practicing occupational therapist. The technique was practiced by caregivers for the adult-sized children during the training lab. Due to time constraints, only two of the three lab training groups were educated on using this method.

Second, the in-service and training lab went over the initial 90-minute time allotted, and thus a need for more time was necessary to provide a quality education and allow for "hands on" application. Third, not all participants attended both days of the educational training, and thus participants did not gain the greatest knowledge possible from both the education program and "hands-on" training of the project, since research has identified both an education program and "on the job" instruction is the most effective way to prevent injuries (Fanello et al., 2002).

Lastly, another limitation may have been the cost of the project. The total estimated cost was about $550, not including travel expenses and housing. This cost increased from the initial budget, due to the creation of the photonovela. However, the photonovela was an important

aspect of the project that ensured the content and materials were being communicated in a culturally relevant way to the Mexican population at Padres y Compadres.

Future Steps/Sustainability of the Project

A resource manual has been provided to Sra. Correa as a reference for future implementation of an in-service and training lab at Padres y Compadres. For sustainability, Sra. Correa will require all new caregivers at Padres y Compadres to view the power-point presentation and successfully complete the exam at the new member orientation process. This process will ensure all parents are educated about the use of proper body mechanics prior to working with children at this facility and will allow the facility to continue to provide education to all members. Sra. Correa's participation in the educational presentation and training lab increases sustainability of this project. Four posters have also been provided to Sra. Correa to be displayed in the four different areas of the facility (kitchen, gym, bathroom, shower areas), where the hands-on training lab occurred.

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Appendix A

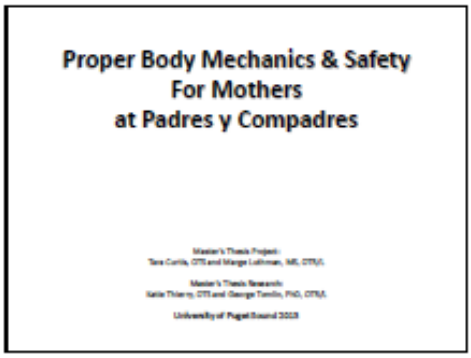
English Power-Point Presentation (Health and Well-being section example)

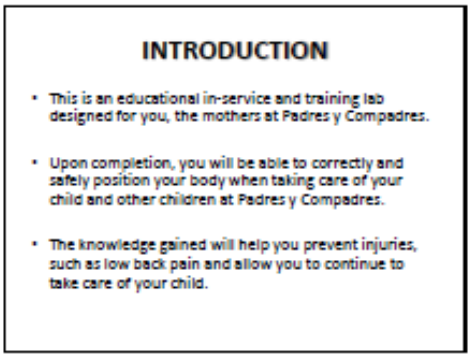
English Power-Point Presentation (Proper Body Mechanics section example)

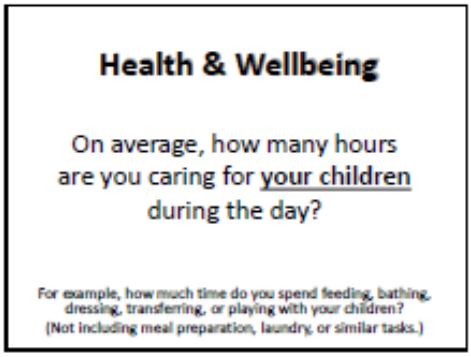
English Power-Point Presentation (Transfer Methods section example)

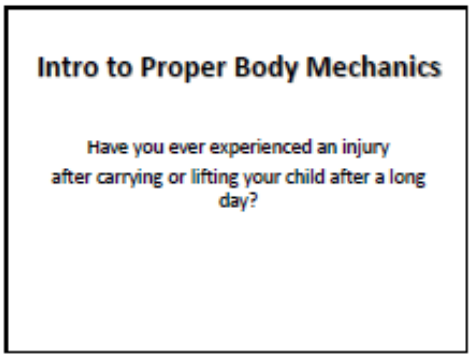
Spanish Power-Point Presentation (Health and Well-being section example)

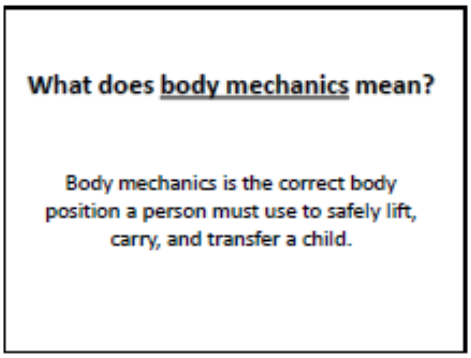
English Power-Point Presentation (Health and Well-being section example)











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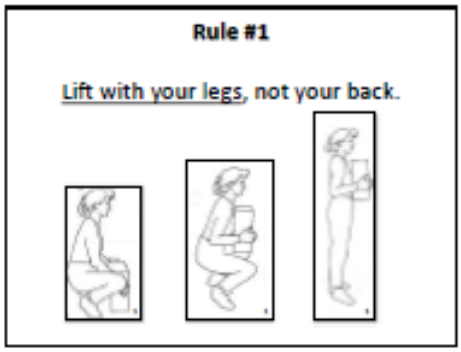
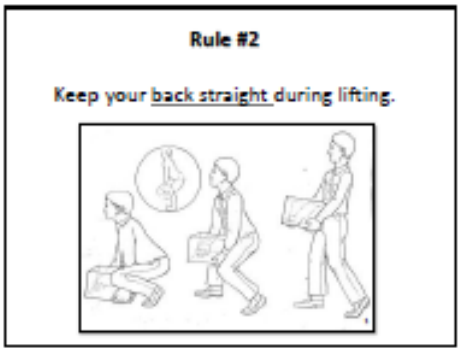
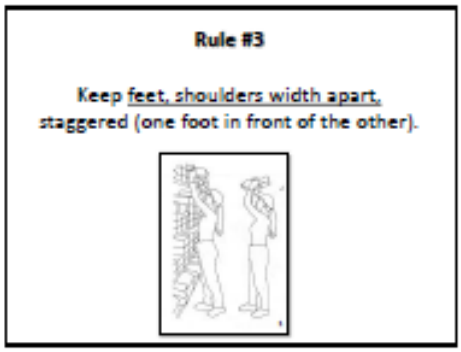
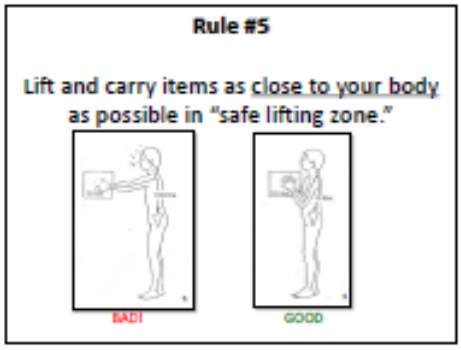
*Example of 6 Health & Well-being slides out of 30 total slides of the English power-point presentation.

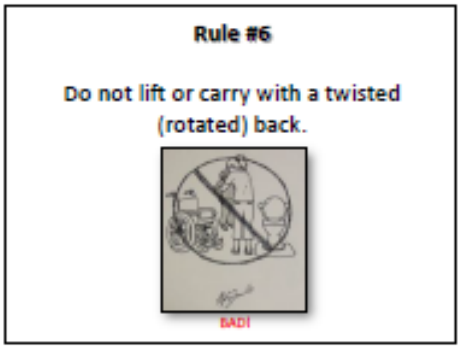
English Power-Point Presentation (Proper Body Mechanics section example)











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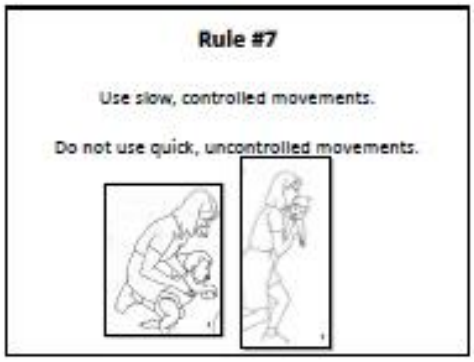

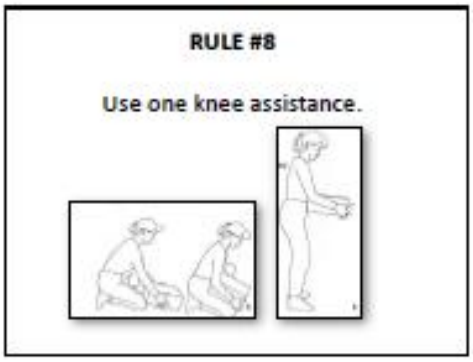

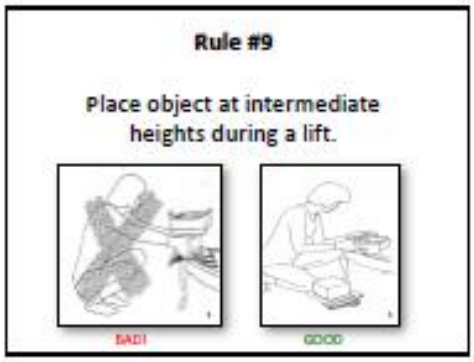

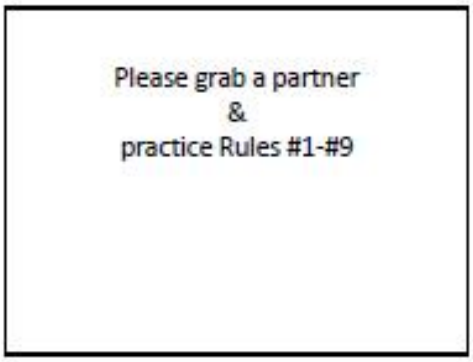

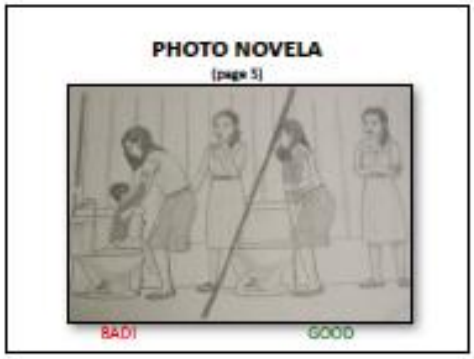

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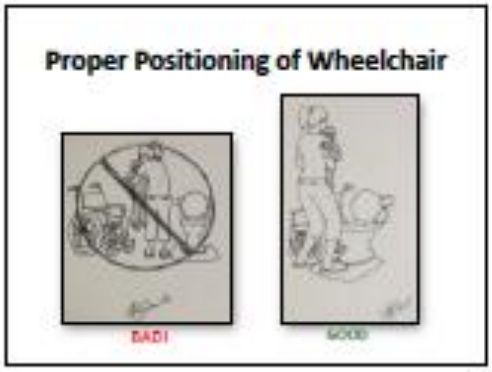
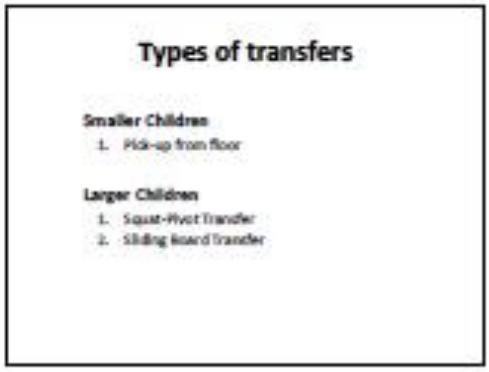
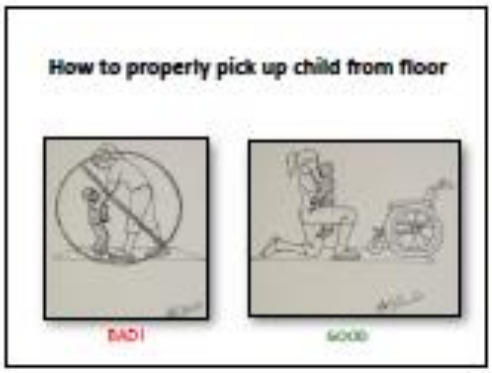
English Power-Point Presentation (Transfer Methods section example)







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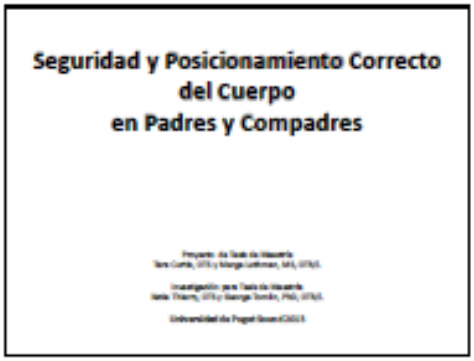
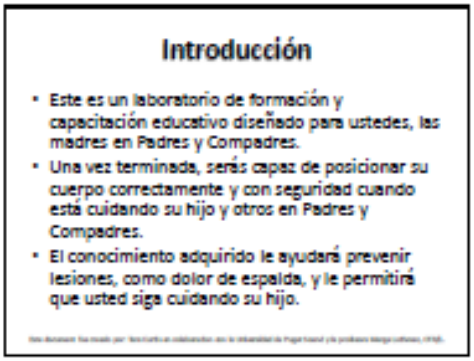
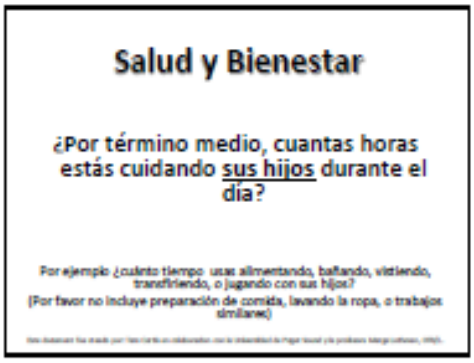
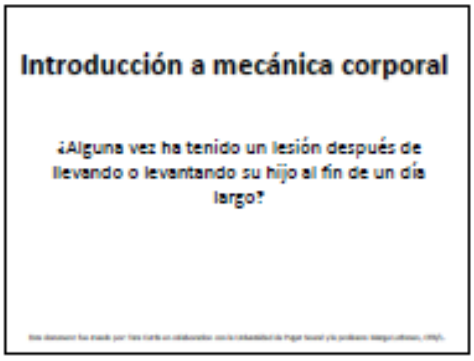
*Example of 6 Transfer Methods slides out of 30 total slides of the English power-point presentation.

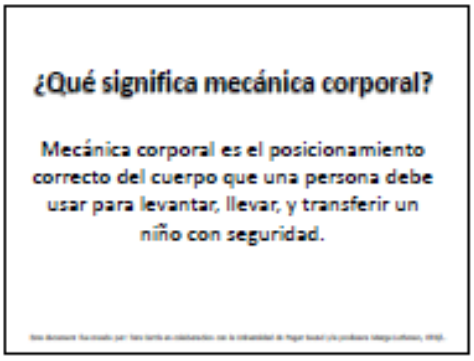
Spanish Power-Point Presentation (Health & Well-being section example)











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*Example of 6 Health & Well-being slides out of 30 total slides of the Spanish power-point presentation.

Appendix B

Exam

Diploma

Exam

Exam on Proper Body Mechanics

Directions: Please circle the correct answer.

1. What does proper body mechanics mean?
    a. the correct way to walk
    b. the correct way to cook a meal
    c. the correct way to lift, carry, or position a heavy item or child

2. Why should a person use proper body mechanics?
    a. helps them complete chores
    b. to protect their body from injury
    c. makes a person stronger

3. What is the most common type of injury caused by using bad body mechanics?
    a. arm and shoulder pain
    b. knee pain
    c. low back pain

4. When lifting a small child from the floor, it is important to:
    a. bend back and keep feet close together
    b. bend hips and knees, bring child close to body before standing
    c. make quick movements, keep child far away from body

5. When you are transferring a large child from a wheelchair to a toilet, it is important to:
    a. position wheelchair on wall furthest from toilet
    b. position wheelchair at an angle close to the toilet for a safe transfer
    c. carry child from bathroom entrance to toilet with arms extended far away from body

Score: ____/____

Diploma


PADRES Y COMPADRES
THIS CERTIFIES THAT
has successfully completed the required course of study approved by
Push International non-profit organization and University of Puget Sound's
Occupational Therapy Program, and is therefore awarded this:
DIPLOMA
Given January 16th, 2013
push
INTERNATIONAL
UNIVERSITY of
PUGET SOUND
Tara Curtis, OTS
Margie Luthman, MS, OT/L

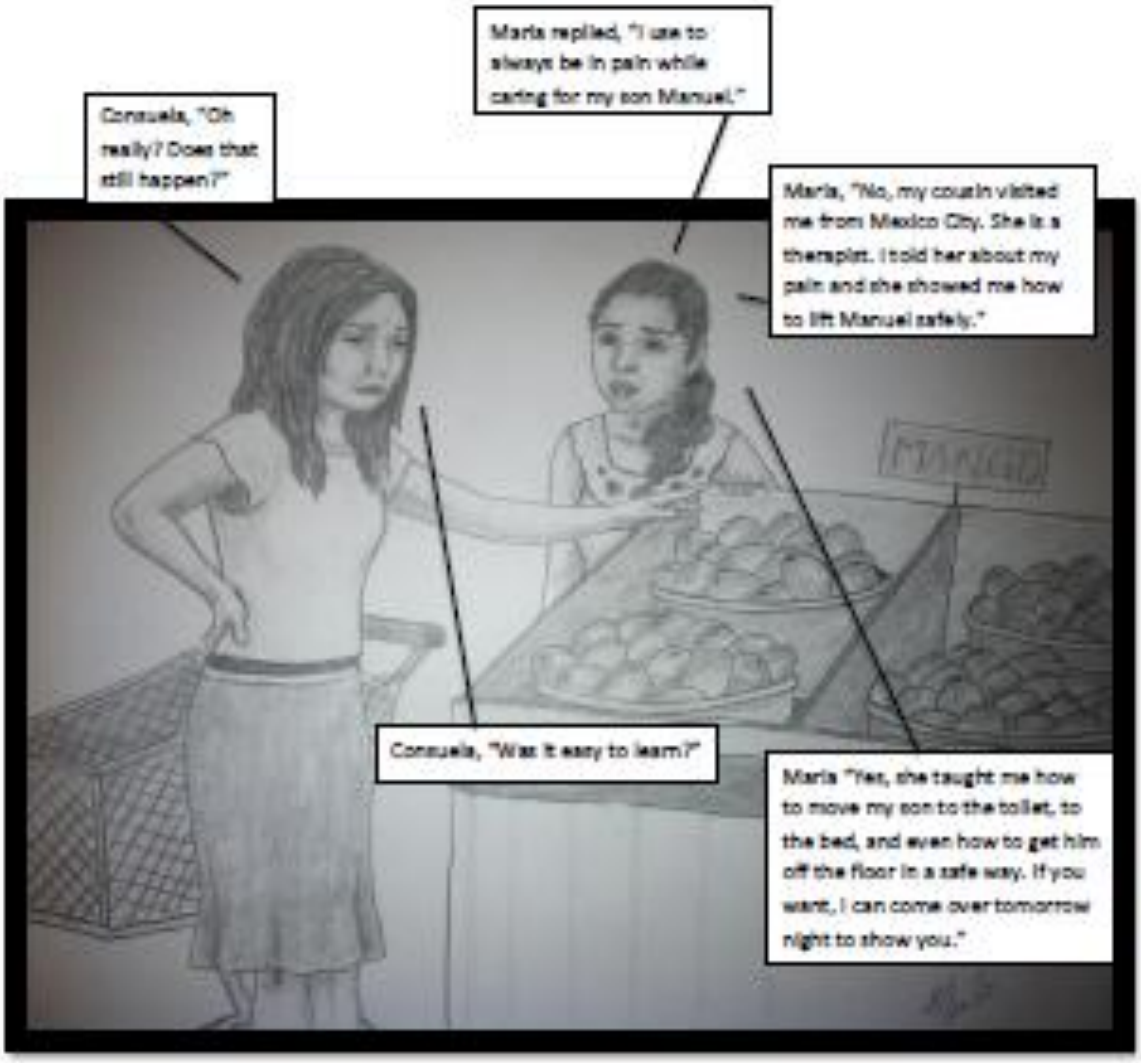
Appendix C

Photonovela (example)

Posters (example)

Photonovela (example)

One night when Consuela was lifting one of her boys from the ground, she felt a sharp pain in her back. The next morning, the pain was not as bad but still there. She went to the market to get food for her family and saw her friend Maria. Maria also has a disabled child. They were talking about their families. When Consuela reached for a mango, she flinched and Maria asked her what was wrong. Consuela said she hurt her back when lifting her youngest boy last night.



Page 2

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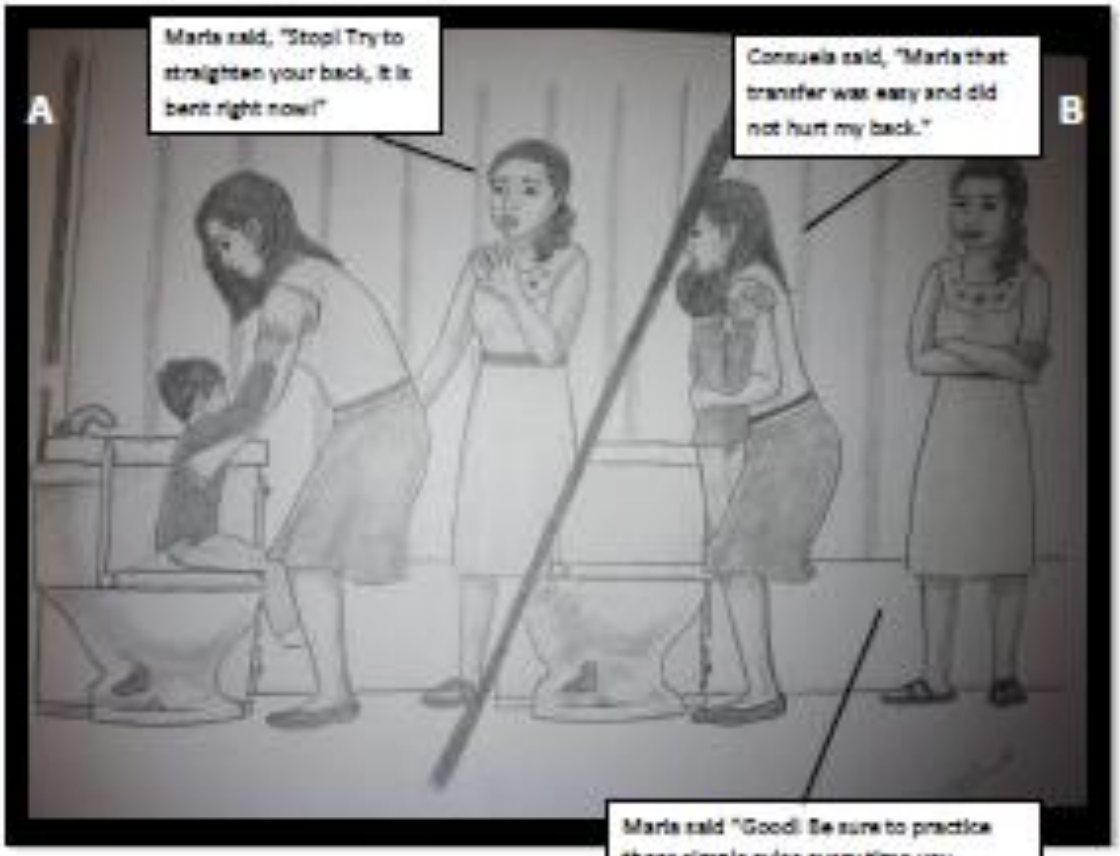
*Example of 2 pages out of 30 total pages of the photonovela.

Jose is done in the bathroom and needs to be transferred back into his wheelchair.

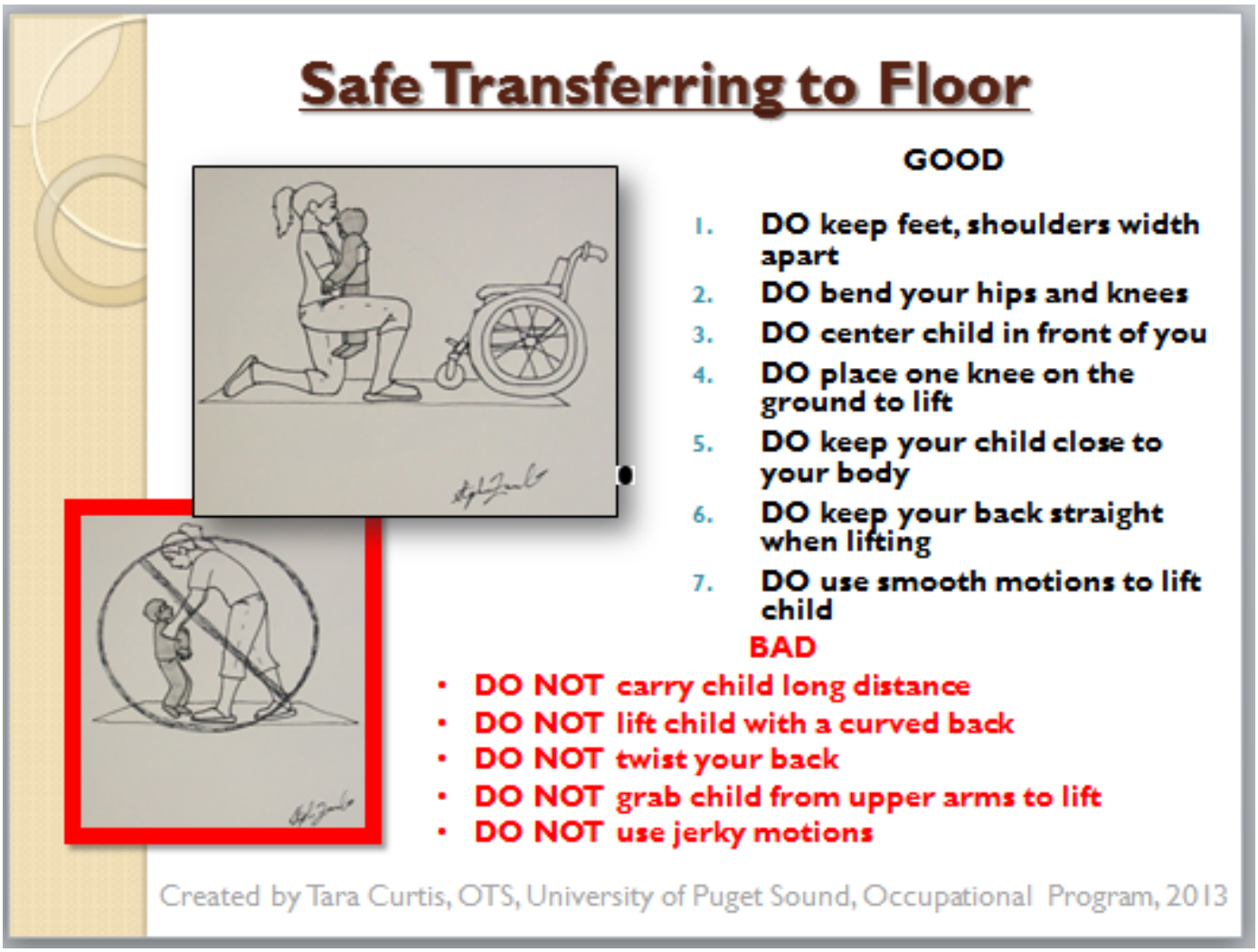
A. Consuela went back into the bathroom and attempted to transfer her son the same way as Maria, while Maria watched.



B. Consuela changes her position to straighten her back.

Page 5

Posters (example)



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*Example of 1 poster out of 4 total posters.