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Community Based Rehabilitation in the Dominican Republic: Efficacy of an Occupation-Based Training Program

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COMMUNITY-BASED REHABILITATION IN THE DOMINICAN REPUBLIC: EFFICACY OF AN OCCUPATION-BASED TRAINING PROGRAM

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CERTIFICATE OF APPROVAL

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Abstract

The purpose of this study is to test the efficacy of an occupation-based training program for community rehabilitation workers (CRW) and parents of children with disabilities in the Dominican Republic. This training program focused on seating and positioning children with disabilities and specific occupations and activities that children can do while seated. Participants were recruited from Fundacion Cuidado Infantil Dominicano, a community-based rehabilitation program, which sends CRWs into the impoverished communities of the Dominican Republic to teach caregivers simple rehabilitation exercises and techniques in order to improve the individual's function. The study's research questions included: 1) Is this training program effective in increasing the knowledge-base of participants? 2) Do participant demographics correlate with the test scores? 3) Are the participants satisfied with the training program?

The researcher utilized a pre- post-test design to measure the efficacy of this program in increasing participants' knowledge of the seating and positioning training principles. In addition, participants completed satisfaction surveys for qualitative feedback on the program. Two months following the training program, participants responded to follow-up post-tests and satisfaction surveys to measure retention of the training material.

Data analysis demonstrated a significant relationship between the change in test scores from the pre-test to the post-test, and the pre-test to the two-month follow-up test. Satisfaction surveys demonstrated that participants found the training program valuable and used the information from the training program with children with disabilities. These

results demonstrate that the training program was effective in increasing knowledge of participants on occupation-based seating and positioning principles.

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Dedication

This thesis is dedicated to all community rehabilitation workers in the Dominican Republic who volunteer their time and energy to help children with disabilities throughout the country.

Table of Contents

List of Tables

List of Figures

Community-based rehabilitation in the Dominican Republic: Efficacy of an occupation-based training program.

Chapter 1. Introduction

Terapia ocupacional, the Spanish words for occupational therapy, do not have much meaning to individuals in the Dominican Republic (DR), including those who work in rehabilitation services. Physical therapists and rehabilitation specialists provide the majority of rehabilitation services in areas related to the needs of the community (T. Bekker, personal communication, March 12, 2007). Based on the observations of the researcher, occupation-based treatment strategies are needed to provide additional practice skills to the rehabilitation workers in the DR. This study will focus on examining the effectiveness of an occupation-based training program administered to community-based rehabilitation workers and parents of children with disabilities in the city of Santiago.

The DR is a Caribbean country on the island of Hispaniola, bordering Haiti, with a population of approximately 8.5 million. Its main sources of income are agriculture consisting of crops of sugar cane, tobacco, and coffee. Tourism and the free trade zone are also a large part of the country's income. Despite the island's rich resources, the Central Intelligence Agency (2007) estimate that 25% of the population is living below the poverty line. This is compared to the 12% of Americans living below the poverty line as reported in 2004. The infant mortality rate in the DR is 28.25 per 1,000 live births (CIA, 2007). This rate is significantly higher than in many other countries, and may be related to poor nutrition, substandard living conditions, and water quality in the rural and poverty stricken areas of the country. These living conditions may also be cause for birth

defects and disability in the DR (IDEAnet, 2004). Although no source has gathered formal statistics, an estimated 850,000 individuals in the DR have some type of disability. This number is estimated by the Center for International Rehabilitation, based on high levels of poverty and infant mortality, combined with an average disability rate of 10% for the world (IDEAnet, 2004).

For the affluent families in the DR, accessing rehabilitation services and specialty schooling for individuals with disabilities is relatively simple. For families of lower socioeconomic status, and for the middle class, accessing resources for children with disabilities can be costly and difficult (T. Bekker, personal communication, March 12, 2007). For all citizens, the DR government provides public health care, but there is no guarantee on the type, quantity or quality of care the individual will receive (Pan American Health Organization, 2007). Though health care is provided by the government, families face the difficult and expensive task of transportation. Traveling is even more difficult when doing so with a child with a disability. In 2000, the DR enacted a Disability Act. This proactive piece of legislation is currently focused on using appropriate language in legal documents when referring to individuals with disabilities. The government has yet to transform this legislation into a provision to provide appropriate services or modifications for accessibility (IDEAnet, 2004).

In addition to the difficulty accessing health care, another barrier to obtaining rehabilitation services may lie in the cultural beliefs that Dominican people hold towards individuals with illness or disability. Many Dominicans believe that illness and disability can be a result of several factors including a moral violation or sin, bad luck, or spirits. Dominicans' religious beliefs may lead them to believe that the birth of a child with a

disability is God's punishment for their sins (Lopez-De Fede, 2002). Therefore, many families feel a sense of shame and embarrassment and often attempt to hide their children with disabilities from the community (Haeussler-Fiore, 2002). These cultural beliefs and subsequent attempts to hide individuals with disabilities could be a reason for the lack of accurate statistics on the rate of disability in the DR. These beliefs could also play a role in why many children often do not receive medical attention or rehabilitative services. Families are ashamed of what they may have done to warrant harm to their child, and do not seek appropriate care, causing further limitations for many of these children (Lopez-De Fede, 2002).

Families of lower socioeconomic status in the DR must rely on community based programs for resources for children with disabilities. Many non-governmental organizations have established community-based programs in the DR to provide preventative health education, HIV/AIDS education, community-based rehabilitation, and other programs that are needed in the impoverished communities throughout the DR. Community-based programs are essential to these communities because access to government resources is unreliable and travel to large cities for treatments is costly and difficult (T. Bekker, personal communication, March 12, 2007).

International Child Care (ICC) is a Christian health organization based in Haiti and the DR. ICC provides resources and information to communities about healthy living. The DR branch of ICC, Fundacion Cuidado Infantil Dominicano (FCID), has two major programs, community health and community-based rehabilitation (ICC, 2006). The community-based rehabilitation program sends community rehabilitation workers (CRWs) into the impoverished communities of the DR to teach caregivers simple

rehabilitation exercises and techniques in order to improve the individual with disabilities' function (ICC, 2006).

The director of FCID explained that CRWs are primarily women who have had experience with family members or friends with disabilities. FCID provides approximately three months of training to the CRWs in basic rehabilitation techniques. After this training, the women spend four to five months shadowing other CRWs with more experience in the community. Every two years the organization provides re-training for all CRWs, as well as smaller workshops throughout the year. Families receiving services from FCID pay a subsidized fee for home visits, and if they are unable to pay, FCID will provide services free of charge. During home visits, CRWs work with the child and caregiver on simple exercises and techniques to use at home, such as stretching routines and reaching activities. CRWs are primarily volunteers, and it is not until they are active in the program for several years that they receive any form of payment (T. Bekker, personal communication, March 12, 2007). Despite limited formal training, CRWs are very creative and knowledgeable women. They dedicate a lot of their time to learning more information about how to work with children with disabilities so they can provide quality services to these families in need.

The training CRWs receive is based predominantly on physical therapy practice and treatment models. Fundacion Cuidado Infantil Dominicano (FCID) also has an affiliation with Creighton University which sends primarily physical therapy students to work at the facility throughout the course of their education. The majority of the treatment protocols taught to the CRWs are therapeutic exercise, range of motion, and mobility principles. Based on observations of these treatments, the researcher perceived a

need for more occupation-based therapy treatments, including the use of functional activities such as feeding, dressing, and playing in therapy.

FCID's community-based rehabilitation program not only provides essential rehabilitation services to children with disabilities, but also provides support and networking opportunities for parents and caregivers of individuals with disabilities. Due to limited resources and funding, this program cannot help all the children who need services, nor train enough CRWs to meet the demand. The training that CRWs receive, as stated previously, is based on physical therapy principles and practice. Many of the children who receive services from FCID have improved significantly from the exercises and rehabilitation provided by CRWs, yet the occupational perspective of functional, meaningful activity is missing. Many of the children receiving therapy through this program improve in the areas of range of motion and strength, but they continue to lack functional skills, such as feeding and dressing independently. FCID needs training programs to be developed and administered by outside organizations in order to train CRWs in occupation-based therapy methods, and on how to incorporate these methods into the current practice at FCID.

This study examines the efficacy of a training program based on occupational therapy principles for seating and positioning children with disabilities. The occupational therapy principles utilized in this program included biomechanical and occupation-based practice theory. The researcher applied these theories to knowledge of the needs of the children with disabilities in the DR, and estimated needs of the current rehabilitation workers. A previous visit to the country and FCID, and communication with the director

of FCID, provided valuable insight to the researcher on the needs of the community for this type of training.

For any rehabilitation specialist, continuing education and training is essential to furthering their ability to provide quality services. This program provided training to supplement the CRW's knowledge and skills for working with children with disabilities. It emphasized the value of occupation-based intervention by using activities that children find interesting and enjoyable. Additionally, the training determined other training topics needed in the DR.

The purpose of this study is to assess the efficacy of a training program provided for the CRWs and families of individuals with disabilities on seating and positioning children with disabilities. This training provided the opportunity for CRWs and parents of children with disabilities to enhance their therapeutic interventions. The study utilized a pre- post-test research design to determine the effectiveness of the training as measured by the knowledge gained by the participants. In addition to assessing participants' knowledge, the researcher administered a satisfaction survey to provide feedback on the program. The researcher also provided a two-month follow-up post-test and satisfaction survey to measure carryover and satisfaction with the training material.

This study answered the following research questions:

1. Was this training program effective in teaching occupation-based seating and positioning techniques to Community Rehabilitation Workers and parents of children with disabilities?
2. Do the CRWs and parents find this program valuable? Were they satisfied with the material taught in the program?

3. What demographic factors may have influenced a participant's score on the post-test?

The following section includes terminology that was used throughout this study. Significant terminology is defined to clarify its use throughout this document.

- Base of Support – refers to the part of an individual's body, usually the lower extremities used to support the individual when seated or standing. The base of support includes the pelvic girdle, legs and feet (Finnie, 2004).
- Community Rehabilitation Worker (CRW) – women trained by International Child Care, Inc. to provide rehabilitation services to children with disabilities in impoverished communities in the Santiago area of the DR. Community rehabilitation workers are trained formally for three months by ICC and then shadow another CRW for up to five months before taking on a caseload (ICC, 2006).
- International Child Care, Inc. – a Christian organization based in Haiti and the DR focused on providing health services to the poorest communities in both countries. The DR branch, Fundacion Cuidado Infantil Dominicano, consists of a community-based health program and community-based rehabilitation program. The organization is a privately-funded organization and does not receive funding from the DR government (ICC, 2006).
- Low tone – "floppy", where muscles feel mushy, not firm, and the individual has difficulty supporting him or her-self in an upright position (Colangelo, 1999).
- Occupation – an everyday activity that an individual engages in and values (American Occupational Therapy Association [AOTA], 2002).

- Range of Motion – the degrees of motion an individual has at a given joint. It can be measured actively with the person performing a movement or passively with a therapist performing the movement (Colangelo, 1999).
- Spastic – also known as high muscle tone, is described as rigid positioning and firm muscles that make it difficult to move the individual into different positions (Colangelo, 1999).

Chapter 2. Literature Review

Introduction

Rehabilitation services such as occupational, physical, and speech therapy are severely limited and occasionally nonexistent in developing countries. In many of these countries therapy services are provided by community-based organizations. The community-based programs in rural areas of developing countries require additional support and resources to provide the best quality of services possible (World Health Organization [WHO], 2004). This preliminary study will test the efficacy of an occupation-based seating and positioning program in the DR. The following literature review provides an overview of research conducted in the areas of training and adult education principles, the culture of the DR, occupational therapy in the developing world, and finally, the theory behind the seating and positioning techniques employed in the training program.

Adult Education and Training Principles

In the 1950s, Malcom Knowles developed principles for adult education, termed andragogy (Knowles, 1998). Until this time, pedagogy, education principles used with children, served as the basis for adult education. Pedagogy is a collection of education principles and practices that employ a traditional education model of teaching with an emphasis on prescribing what should be taught to the students (Knowles, 1998). Andragogy differs from pedagogy in that the emphasis is on the learners rather than the curriculum, and focuses on providing relevant education to meet the needs of adult learners. Andragogy is comprised of six principles: 1. Adult learners must understand the importance of something before they spend the time and energy to learn it. After

understanding the relevance of the material to be covered, the adult learner may invest more time and energy into the education process. 2. Adult learners must be treated with respect to their independent life style. The education of adults differs from that of children wherein adult learning must be self-directed by the individual and not the teacher (Knowles, 1998). Adults in the education setting need to feel respected in order to demonstrate a mutual respect for the "teacher." This mutual respect will allow for a more positive learning environment where more information can be shared between the teacher and students. 3. The education of adults must address a variety of learning styles due to the learners' wide range of experiences. The teacher will have to consider these learning styles and adapt his or her teaching style to fit the needs of the adult learners. 4. The information being taught must be relevant to the adult learners' life. Adults have limited time and resources for education. If adults do not find relevance in the information they will be less motivated to learn and participate. 5. The education must be related to real-life application. Adults will be motivated to learn if the information is related to problems they face in their daily lives. 6. Adult learners do not feel the need for as much external reinforcement, such as grades and constant positive feedback as children require. Adult learners have more internal motivation to learn new material than children do (Knowles, 1998).

Programs that follow the principles of andragogy increase the adult learners' motivation to learn new material because it is relevant to their current life, provides real-world application and is tailored to the specific needs and learning styles of the learners. Many studies have applied the learning principles of andragogy to training programs for adults (Droga, Frake, Bretherton, Dwivedi, & Sharma, 2005; Mak & Plant, 2005;

McConkey & Mphole, 2000). These principles provide the framework for the design and implementation of the training program assessed in the present study.

The Australian College of Rural and Remote Medicine (Mak & Plant, 2005) developed a program for prevocational doctors sent to rural community in Australia for a training rotation consisting of 28 weeks. This program allowed the doctors to obtain valuable experience prior to completing their training. This opportunity also provided the health care workers in rural communities with new training and techniques specifically designed to meet the unique needs of their community (Mak & Plant, 2005).

In order to develop the training program using the principles of andragogy, doctors and health care workers planned and evaluated the training to meet the needs of the community. The training program provided opportunities for experiential learning, used relevant and important topics for the audience, and was problem-based and task-oriented. Each doctor was responsible for developing and initiating programs to help meet the identified needs of the community. The doctors had opportunities for real-world learning and application as a means to meet the goals of their rotations.

The researchers used reflective journals and end-of-program interviews with each participating doctor to evaluate the program. The design of this program provided continuous input from the health workers to develop programs that related to the specific needs of each community (Mak & Plant, 2005). In providing meaningful training, the participants felt actively involved in the program because it affected their lives and were motivated to participate.

A case study of a training program conducted in India gives another perspective on different adult learning principles that researchers used to establish a cultural training

program (Droga et al., 2005). The researchers identified the need to involve participants in the development and administration of the training, thereby giving them the opportunity to continue the program in years to come. Researchers worked directly with the host institution to determine the training needs in regards to child and adolescent mental health services prior to developing specific material for the training program. Researchers developed the program to maximize active involvement from the participants. Educators used the principle of interactive teaching to encourage participation and discussion. These teaching methods helped facilitate participants' use of their own knowledge and experience as a means to contribute during the training.

Participants in this study included student social workers, junior doctors, consultant psychiatrists, senior psychologists, and senior social workers (Droga et al., 2005). Researchers discovered cultural misunderstandings due to the interdisciplinary environment, which caused the study results to be unsupportive of the use of Knowles education principles in the training program (Knowles, 1998). These cultural misunderstandings included gender inequality and age issues. For example, conservative older, male doctors dominated discussion and demonstrated an unwillingness to change their methods. These cultural differences resulted in less participation than expected, as the older, male doctors spoke over female staff. Even though one of the researchers was from India, the group found that their training methods and use of andragogy principles was too different from the norm of the Indian culture (Droga et al., 2005).

This study demonstrates the difficulties of conducting research and training in a culture different than one's own. Even though the researchers had experience in the country and knew the culture, they could not plan for some of the cultural boundaries

discovered in India. The results of this study suggest important issues that the researcher considered when designing the training program assessed in the present study. To avoid these pitfalls, the researcher conducted research on Dominican culture and consulted with current rehabilitation professionals in the DR in the hopes of eliminating some of the cultural barriers such as the ones found in the Droga et al. (2005) study.

Another study conducted in Lesotho, a country in Africa, focused on examining the needs of individuals with disabilities, families, professionals, and communities (McConkey & Mphole, 2000). This study used a participatory action research design, consisting of a needs assessment followed by administration of training programs to meet the identified needs (Stringer, 1999).

The needs assessment included six consultation sessions with a total of 68 participants, including both parents and friends. First, the researchers identified what parents saw as the needs of their children with disabilities and how they felt these needs could be met. For the second part of the intervention, researchers chose 27 participants from the needs assessment for individual interviews. These interviews helped researchers determine what specific training topics the community members would like to see for parents, the wider community, and for healthcare workers (McConkey & Mphole, 2000).

Through this study the researchers identified several areas where training was needed, including how to handle children with disabilities, accepting children with disabilities, knowledge of disabilities, and how to approach professionals to obtain answers (McConkey & Mphole, 2000). By identifying these topics, researchers developed the training program based on the needs of the community. In addition, researchers applied the principles of andragogy as evidenced by involving community

members in the development of the training programs. The use of these principles allowed participants to feel invested in their education and feel a sense of respect from researchers.

These studies (Droga et al., 2005; Mak & Plant, 2005; McConkey & Mphole, 2000) identified important principles for providing effective training programs in developing countries. Each study demonstrated the importance of actively including participants in the planning and implementation of the training. Participants can help clearly identify the needs of the group and motivate individuals to attend. The inclusion of participants also increases the probability that community members will feel the training is necessary and appropriate to meet the needs of the community. These studies also stressed the importance of understanding cultural differences and possible barriers to the training when providing a training program in countries other than one's own. The presenter may have to change the method in which the program is presented, or the teaching methods, in order to adapt to the culture in which the training is being presented.

For the purposes of the study described in this paper, the researcher used many of the education principles utilized in the reviewed studies during the implementation of the training program in the DR. For example, prior to arriving in the DR the researcher collaborated with the director of the community-based rehabilitation program to develop the training program to meet the CRW's needs. In addition, the researcher considered cultural boundaries and issues that may occur during the training program to make changes as necessary. Along with the education principles examined, the researcher studied several types of program evaluation methods used to study the efficacy of similar training programs.

Program Evaluation

Several of the studies involving training programs reviewed used a pre- post-test measurement design (Balcazar et al., 2006; Olness, Sinha, Herran, Cheren, & Pairojkul, 2005; Soliman, Samadi, Banerjee, Chamberlain, & Aziz, 2006). This research design entails administering a questionnaire prior to the training and the same questionnaire after the training session to measure the knowledge gained from the training. Pre- post-tests typically contain questions that pertain to the material covered in the training program. The questions are multiple choice questions or circle the best answer choices. These assessments provide researchers a means to gather quantitative data regarding the efficacy of the program to increase knowledge on the topic presented in the training (Balcazar et al., 2006; Olness et al., 2005; Soliman et al., 2005).

Other forms of program evaluation include feedback forms which may include Likert rating scales and/or open-ended questions regarding participants' perception of the training. In some instances, researchers requested feedback on a daily basis to adapt the training to the needs of the participants (Olness et al., 2005). Other researchers gathered intermittent feedback (Mak & Plant, 2004), or feedback solely at the end of the study to determine future program improvements (Balcazar et al., 2006; Droga et al., 2005; Olness et al., 2005). A combination of pre- and post-test measures and feedback forms allows researchers to gather both quantitative and qualitative data. The pre- post-test results allow researchers to determine if the program participants understand the material. Feedback forms provide researchers with additional insight into participants' perceptions of the program and areas for improvement for future programs.

Mak & Plant (2005) gathered feedback through journals and interviews throughout the study. Physicians in the program authored journals on a regular basis to evaluate their experience. These journals helped researchers determine what changes could make the program more successful. The study supervisor and an outside reviewer conducted midterm and final interviews for more formal feedback on the program from each participating physician (Mak & Plant, 2005).

These forms of feedback gave several different types of information to the researchers. The daily journals gave instant feedback on what additional resources and training was needed and how the program was developing over time. Feedback from daily journals helped researchers implement changes throughout the program, instead of waiting for feedback at the conclusion of the program. The formal interviews, conducted via telephone, and using a scripted questionnaire or semi-structured interview, provided information regarding the overall program (Mak & Plant, 2005).

The Droga and associates study (2005) on child and adolescent mental health training also used several forms of feedback to determine the effectiveness of the training. The program consisted of seven days of training in which researchers invited all disciplines from local child services to participate. Following completion of each day of training, researchers gathered feedback and modified the program as needed (Droga et al., 2005). The researchers found that the daily feedback was essential to the success of the program. For example, at one point during the study, the program was not meeting its goals, and participant feedback helped researchers make the necessary changes to subsequent sessions. Each day the training became more successful because the structure of the training continually evolved to meet the educational needs of the participants

(Droga et al., 2005). Analysis of participant's feedback at the conclusion of the program showed that 86.2% of the participants felt the quality of the lectures were either excellent or very good.

Overall, the training was set up well, and the ability to change the program each day, depending on the feedback given, assisted the trainers to adapt the program as it proceeded to meet the needs of the participants. In addition, including the host organization in the planning can help ensure that the organization will implement the program in the future without the assistance of outside sources (Droga et al., 2005).

Olness and associates (2005) studied a training program administered in seven countries on the topic of meeting the special needs of children during disasters. This program has been presented to a total of 280 health care professionals, consisting of a five day course which included presentations and case discussions. The researchers employed several different types of feedback to evaluate the program, including, one-minute, daily, and final feedback. One-minute feedback asked participants to write down any questions they may have had. Participants gave daily feedback at the end of each day, which consisted of rating the lectures and presentations in terms of usefulness and quality. Participants provided final feedback, given at the end of the course, which consisted of answering yes/no questions, open ended questions, and questions to rate the program's overall quality and readiness to apply the material learned (Olness et al., 2005).

In addition to feedback forms, researchers used pre- and post-test measures to gather information on knowledge gained throughout the program. The researchers found significant improvements in pre- to post-test scores. The methods of objective and

subjective program evaluation demonstrated significant improvements in the knowledge-base and satisfaction of participants with this program (Olness et al., 2005).

Soliman et al. (2006) developed a continuing medical education module on breast cancer for physicians working in developing countries. The researchers presented the module to 183 physicians in Pakistan, in three identical sessions. The researchers measured the outcome of the program with pre- and post-tests. Results showed significant improvement in the knowledge-based questions and attitudes towards breast cancer screenings. However, a reported limitation with this methodology of research is the limited ability to see the practical application of the material in the participating doctor's offices (Soliman et al., 2006).

The studies described used several different forms of feedback (Balcazar et al., 2006; Droga et al., 2005; Mak & Plant, 2004, Olness et al., 2005). Each type of evaluation method improved the quality of the program due to participant feedback. Many studies use quantitative forms of program evaluation, such as pre- and post-tests to determine the efficacy of an educational program. These studies demonstrated that the use of these evaluation tools can objectively measure the success of the presented program in increasing the knowledge-base of the participants.

The assessment of the DR program described in this paper used a combination of quantitative and qualitative evaluation forms, based on the findings of this literature review. These findings include the use of a pre- and post-test as well as a satisfaction survey. In order to appropriately adapt the program and the assessment instruments to the DR, the researcher reviewed literature on Dominican culture.

The Dominican Republic, its Culture and Healthcare System

The following section describes the DR, its health care system, and cultural issues that the researcher considered in the planning and implementation of the occupation-based training program assessed in this study. There is not a wealth of published knowledge on the DR or its health care system. This lack of published information made developing a training program that was culturally relevant much more challenging. The researcher developed the training assessed in this study based on the available literature, as well as previous experience in the country, and through personal communication with many Dominicans and Fundacion Cuidado Infantil Dominicano's (FCID) program director.

Research done within communities in the DR, and conducted in the United States with immigrants from the DR describes specific cultural values reported by professionals working with Dominican clients. These values include dignity and respect for elders, loyalty to family, personal relations, and spirituality and religion (Andres-Hyman, Ortiz, Anez, Paris, & Davidson, 2006; Arredondo et al., 2006). In the DR it is a social norm for a younger person to defer to an older one, even if not of familial relation. Women also must defer to men (Arredondo, et al., 2006). In the arena of health care, Dominicans will seek advice from the service provider, but may not feel comfortable discussing personal issues if it compromises the individual's dignity. Therefore, service providers need to establish trust before asking personal questions. The researchers suggest using formal evaluation tools in the beginning until trust is built between the service provider and the individual seeking care (Andres-Hyman et al., 2006). Family is of utmost importance for many Dominicans. This importance extends beyond the nuclear unit to any individual of

blood relation. Many people feel guilty about dishonoring their family or leaving the family to move to another area. Dominicans also have a different cultural belief from most Americans on personal closeness with health-care professionals (Arcia, Fernandez, & Jaquez, 2005). Clients who are Dominicans may want to relate on a personal level with the therapist and have informal conversations rather than formal meetings (Andres-Hyman et al., 2006). Providing a warm and friendly environment is important when working with Dominicans, and most Latinos, in general (Santiago-Rivera, Arredondo, & Gallard-Cooper, 2002). Speaking distance is also much closer than found in the American culture. Finally, religion and spirituality are very strong aspects of the Dominican culture. Many believe that leading a positive lifestyle will be rewarded through reincarnation after death (Andres-Hyman et al., 2006).

Many Latinos, including Dominicans, believe that things happen to them because of God's will, and thus use this to understand why hardships or unfortunate circumstances occur (Santiago-Rivera, Arredondo, & Gallard-Cooper, 2002). The high regard for religion and spirituality makes coping with disability a very difficult task for many Dominicans. Lopez-De Fede (2002) describes the concept of disability in terms of the Dominican culture. She states that many Dominicans believe:

> "that illness is caused by (1) psychological states such as embarrassment, envy, anger, fear, fright, excessive worry, turmoil in the family, improper behavior or violations of moral or ethical codes; (2) environmental or natural conditions such as bad air, germs, dust, excess cold or heat, bad food, or poverty; and (3) supernatural causes such as malevolent spirits, bad luck, or the witchcraft of living enemies," (Lopez-De Fede, 2002, p. 10).

Many Dominicans relate acquiring a disability with past sins or supernatural reasons, thus many families may feel ashamed and may often try to hide the individual with a disability from the public. These beliefs and subsequently hiding the individual may lead to individuals with disabilities not receiving the necessary rehabilitation services. Cultural issues surrounding disability do not only affect children with disabilities. Older individuals with acquired disabilities tend not to seek services to help adapt their living environment or develop skills for independent living.

Haeussler-Fiore (2002) in a review of Dominican's access to rehabilitation services after immigrating to the United States, explains that many Dominicans do not know about the services available to them within the United States or are afraid to use them for fear of the government taking their children away and putting them into institutions. Many families will deliberately leave their children with disabilities in the DR with family members, even if the services provided in the United States are superior, for fear that they will lose their children to the government systems. The fact that individuals will leave their children with family demonstrates how important family is and how parents will go out of their way to keep their children with disabilities in the home and with family. Another important point made by Haeussler-Fiore (2002) was that, "most Dominicans believe that a person with a physical disability does not need physical exercise, a social life, or recreational activity," (p.21). The lack of rehabilitation services in the DR, in addition to the prevailing belief that these services are not needed, leaves many children with disabilities in a position of having little or no independence in life.

Moreover, the lack of rehabilitation services reflects the poor health care system currently in place in the DR. Whiteford (1992) researched and reported the historical events that shaped the DR's health care system presently. The most important historical period for the health care system was during the United States' occupation of the DR from 1916 to 1924. During this time period, the US centralized and reformed the education, sanitation, and public health systems. The U.S. modeled the DR's health care system after the United States' high tech, biomedical system and placed control of the system under physicians and administrators in large urban centers. In addition the U.S. government provided complicated, advanced technology, when prior to this occupation Dominicans relied on folk medicine as their primary health care (Whiteford, 1992).

During the United States' occupation, U.S. government officials operated and financed this centralized, bio-medical model. After U.S. forces departed, the Dominican government had a health care infrastructure, yet no trained administrative personnel. In addition, the DR did not have the financial resources to continue providing and updating the technology based medical systems. Another issue with this system is that the hospitals and health care centers were and still are based in large urban cities, yet the majority of Dominicans live in rural communities and do not have access to affordable transportation (Whiteford, 1992).

While the government funds the current health care system, individuals are not guaranteed access to the necessary medical care, cannot afford to travel to the hospitals, and cannot take the time needed to travel to these hospitals (Whiteford, 1992). For families with children with disabilities, these issues are magnified. Families with a member with disabilities must have a family member, usually the mother, stay home with

the child, further straining the financial situation of the already struggling family (T. Baker, personal communication, March 12th, 2007).

Due to cultural values and views about disability in the DR, and the limited access to rehabilitation services, many children with disabilities are not receiving the help they need to live a healthy life. Many non-governmental organizations (NGOs) provide community-based rehabilitation services to individuals with disabilities in countries where there is limited access to healthcare services.

Community Rehabilitation Programs

Community Based Rehabilitation (CBR) is a, "strategy within general community development for the rehabilitation, equalization of opportunities and social inclusion of all people with disabilities (WHO, 2004). CBR programs' main goals include: allowing individuals with disabilities to maximize their abilities and participate in the community, and promoting community activism in order to make changes to communities for enhanced involvement of individuals with disabilities. There are several barriers to fulfilling the goals of CBR programs. These barriers include, poverty, lack of government support and legislature, and limited funding resources on both national and local levels (WHO, 2004).

The WHO and the Swedish Organization of Disabled Persons International Aid Association (2002) conducted a study of CBR programs in three countries to measure their effects on the quality of life of individuals with disabilities. They also evaluated effective strategies used by these programs. Through in-depth interviews and focus groups with 115 participants of CRB programs in three countries, they identified several factors that make CRB programs successful in improving the lives of individuals with

disabilities. They found that for these programs to be successful they must: 1) ensure that individuals with disabilities and their families understand the individual's rights, 2) provide opportunities for individuals with disabilities to express themselves, and 3) provide outlets for individuals to make official complaints about injustices (WHO, 2002).

In addition, they found that involvement of government officials was important in the success of the program. Governments must make provisions in laws to allow for equal inclusion of individuals with disabilities. Each community requires formal processes to identify the needs of these individuals within the communities, and funding or financial resources to cover the costs of any necessary adjustments. Finally they found a need for the active involvement of civil rights organizations to advocate, provide resources and have a vision for individuals with disabilities in local communities.

Chaudhry and Owen of the World Bank (2005) also conducted a research study of community driven development (CDD) programs which include programs for individuals with disabilities. The researchers provided case studies on five programs around the world. These programs provided resources to communities to promote the active engagement of individuals with disabilities as valued members of society. The researchers found several common approaches in these varied programs. Most CDDs provide several sub-programs that address the specific needs of the individuals with disabilities as well as provide programs that help advocate for these individuals in the community. CDDs also set up strong enabling environments in which legislation supports the inclusion of individuals with disabilities and also provides funding to sustain these CDD programs. Finally, CDDs provide properly trained staff and the resources to integrate the CDD program into the community. This approach includes involving

individuals with disabilities as trainers and program facilitators in the community. The researchers found that programs should include individuals with disabilities in all stages of the program, including design, implementation, review, and evaluation (Chaudhry & Owen, 2005).

CBR main function is to provide services to help individuals with disabilities become active participants in the community. These services include rehabilitation services which focus on, "daily living self-care ability, moving ability, work ability (learning ability) and social communication ability," (Zhao & Kwok, 1999, Section Part Three). In addition to these rehabilitation services CBR's advocate for individuals with disabilities on a local and national level to help make wide spread changes throughout the state to support individuals with disabilities participation in society (Chaudhry & Owen, 2005).

Fundacion Cuidado Infantil Dominicano (FCID) is the CBR organization in the DR where the researcher conducted the training program evaluated in the present study. FCID provides services to children with disabilities in their homes. The communities involved with FCID are some of the most impoverished in the DR. These services are provided at a subsidized rate depending a family's income and financial resources. When providing these rehabilitation services in the home, parents find ways to use available materials to help their children. Rehab workers report carryover of therapeutic exercises and techniques between visits through this home-based approach. These services can also introduce strategies for families to cope with having a family member with a disability in a culturally relevant manner (T. Bekker, personal communication, March 12, 2007).

CBR programs are vital to developing countries to help overcome the social and physical barriers individuals with disabilities face on a daily basis. It is not the purpose of these organizations to force new opinions or cultural beliefs on the recipients of their services, rather it is to provide a service that will allow a person with a disability to be accepted and incorporated into family life (Krefting, 1992). Many CBR programs provide physical therapy services to help individuals with disabilities. Occupational therapy is a valuable discipline that could supplement the physical therapy services and help address many of the issues facing individuals with disabilities.

Occupational Therapy

Occupational therapy is, "skilled treatment that helps individuals achieve independence in all facets of their lives" (American Occupational Therapy Association [AOTA], 2007). Occupational therapists support participation in several areas of daily life called, occupations, including activities of daily living, instrumental activities of daily living, education, work, play, leisure and social participation (AOTA, 2002). Occupation is defined as, "everything people do to occupy themselves, including looking after themselves...enjoying life...and contributing to the social and economic fabric of their communities," (AOTA, 2002). Occupational therapists use meaningful and functional activities to achieve an outcome, which is to help a person become as independent as possible in all activities the individual needs or wants to do in daily living (AOTA, 2007).

Currently, there are no occupational therapy professional educational programs in the DR. In most hospitals, physical therapists provide any rehabilitation services needed. Physical therapists use, "therapeutic exercise and functional training" as the primary modes of therapy (American Physical Therapy Association (APTA), 2007). They focus

on providing a plan of care that focuses on, "promot[ing] the ability to move, reduce[ing] pain, restor[ing] function, and prevent[ing] disability" (APTA, 2007).

In contrast, occupational therapy utilizes the use of occupations during therapy. For children with disabilities an occupational therapist will focus on their natural occupation of playing. Possible outcomes may include, improving developmental skills such as feeding, bathing, and dressing. Therapy outcomes may also include school related goals, functional mobility and functional communication (AOTA, 2007).

In 2005, one American trained occupational therapist established an occupational therapy service in the DR and published her experience (Bourke-Taylor & Hudson, 2005). There were many cultural mores she had to adapt to in order to provide services, including differences in sense of time, confidentiality and the meaning of therapy that exist between the United States' and Dominican cultures. Such cultural differences led the occupational therapist to observe that many people did not arrive on time for therapy sessions. She also experienced conflicts over sharing confidential information with people other than the client and their immediate family. In the U.S. strict laws dictate that confidentiality for the patient's protection is extremely important. In the Dominican culture it is common practice to share information with neighbors and friends, in addition to immediate family. Many of her clients were not aware of occupational therapy and expected treatment consisting of exercises rather than functional activities. Many people did not understand how dressing or making a meal was therapy.

This reflective report is very important to consider when working in the DR. Occupational therapy is not a widely known or understood profession; therefore it is important that practitioners educate the community, individuals with disabilities and their

families to understand the benefits that occupational therapy can provide. It is important to provide further occupational therapy programs and training in the DR. These programs will be able to provide individuals with disabilities a holistic therapy that will address all areas of their lives.

As noted previously, Dominicans feel that individuals with physical disabilities are not meant to lead meaningful, active lives (Haeussler-Fiore, 2002). Occupational therapists believe that everyone can live a meaningful life and independently participate in daily occupations (AOTA, 2007). Professionals in community rehabilitation programs work to overcome these cultural standards of devaluing individuals with disabilities in the DR. Through the addition of the occupational component to the services community rehabilitation workers are able to provide, CRWs can provide children with disabilities more opportunities to be successful participants in their environment and become valued members of society.

The researcher used information gathered from the literature about the cultural values of Dominicans, the information on effective strategies used by community rehabilitation programs, and the services that occupational therapy can provide for children with disabilities, to develop a program that was culturally relevant. After gathering this information, the researcher was able to develop the occupation-based seating and positioning training program.

Seating and Positioning

The occupational therapy program designed for community rehabilitation workers and parents in the DR focused on seating and positioning children with disabilities. Seating and positioning is a focus for many occupational therapists as it forms a

foundation for individuals to perform many daily tasks. When seated in an optimal position, an individual has improved control and functional use of his or her head, neck, arms and hands (Herman & Lange, 1999). This optimal seated position can lead to more independent use of the individual's arms and hands and therefore allow him or her to perform activities of daily living such as brushing teeth, feeding, and dressing. The biomechanical theory supports the use of proper positioning to facilitate distal control. A biomechanical approach to treatment includes biomechanical and physiological principles of the human body. It focuses on deficits in range of motion, strength and endurance that affect a person's daily occupations (Flinn, Jackson, Gray, & Zemke, 2007). Occupational therapists work with individuals to improve and prevent further limitations with range of motion, strength and endurance through the use of occupation-based activities (AOTA, 2002).

The training program on seating and positioning developed for Fundacion Cuidado Infantil Dominicano (FCID) focuses on children with disabilities in two categories, individuals with low muscle tone, hypotonicity, and individuals with spastic muscle tone, hypertonicity. Low muscle tone or hypotonicity refers to decreased muscle tone causing poor strength and postural control. Low tone is the opposite of spastic muscle tone or hypertonicity which refers to, "excessive muscle stiffness and slow effortful movement," (Levit, 2007, p. 645). Occupational therapy interventions focus on supporting individuals with low and spastic muscle tone in functional positions which allow them to interact with the environment in purposeful manners (Levit, 2007). Some of these positions will be described in this section.

To develop the training program on seating and positioning, the researcher reviewed previous research studies testing the efficacy of functional seated positions. The findings from these studies helped develop the seating principles taught in the training session. These studies on positioning used several different types of seated positions to determine which one provided the best support for functional use of the upper extremity (Akbayrak, Armutlu, Gunel & Nurlu, 2005; Hulme, Gallacher, Walsh, Niesen & Waldron, 1987; Myhr & von Wendt, 1990; Redstone & West, 2004; Stavness, 2006). Many studies include participants who have disabilities such as cerebral palsy and brain injuries.

Hulme and associates (1987) conducted a study on the postural changes that occur from the use of different types of adaptive seating. The study consisted of 19 participants with various types of physical disabilities including, spasticity, hypotonicity, mixed tone and mental retardation. The participants ranged in age from 16 months to just under 4 years of age. The researchers observed each client in their natural environment for three months prior to receiving the adaptive seating equipment. Following implementation of the seating device, researchers evaluated each participant's sitting posture, head control, visual tracking, reach and grasp every six weeks. Six months following implementation of the seating device, researchers performed a final evaluation.

Researchers split participants into two groups, presenting one group with seating devices designed for transportation and positioning and the second group received seating devices designed solely for positioning. Specialists individualized the seating devices to meet the needs of the clients and to position the individual in a functional position based on biomechanical principles (Hulme et al., 1987).

The results of the study (Hulme et al., 1987) showed significant improvements in all areas tested with no significant difference reported between the two different types of seating devices. Seating posture improved and researchers observed all participants with their head in the vertical plane, upright trunk, hips flexed to 90 degrees, knees flexed to 90 degrees, ankles in neutral and feet supported (Hulme et al, 1987). Results from the study support the use of assistive seating devices to properly position children with disabilities. Although the study sample was small, the results are similar to those of other studies (Akbayrak et al., 2005; Myhr & von Wendt, 1990; Redstone & West, 2004; Stavness, 2006). While these supported seating devices are not available in the DR, this study supports the biomechanical principles that the researcher used to develop the training program.

Myhr and von Wendt (1990) also tested different seated positions on two children with cerebral palsy to determine which position led to the greatest functional use of each child's upper extremities. The researchers developed six sitting positions that would affect gravity forces, counteract spasticity, and provide postural symmetry.

The researchers found that the last position trialed produced the most postural control and had the greatest effect in reducing spasticity. In this seated position, the base of the chair was neutral or tilted forward 5 degrees. The neutral to slight tilt of the chair produced an anterior pelvic tilt which helped the child engage postural muscles. In return, the position reduced spasticity, therefore the child was able to participate in a table top activity. Other supports included in this seating system were a belt at the pelvis angled at 45 degrees to the base of the chair and an abduction orthosis to keep the child's lower extremities in proper position (Myhr & von Wendt, 1990). This study further supports the

use of biomechanical principles that the researcher presented in the training program in the DR. However, a limitation of this study was that it utilized a single-subject research design and only included two cases.

Seating positions specific for individuals with spasticity is another topic covered by many researchers. One research study conducted in Turkey tested the effectiveness of antispastic positioning techniques (Akbayrak et al., 2005). This study included 16 participants with spastic diplegic cerebral palsy. Researchers completed several assessments before and after positioning to test the effects. The antispastic position included hips abducted at 45 degrees, hips externally rotated, and the knees and ankles flexed to 90 degrees. Researchers found that the antispastic position resulted in a significant decrease in spasticity.

The study's results support the use of antispastic positioning to reduce spasticity and provide a supportive, functional seated position. A limitation of this study is that researchers only provided the positioning for a period of 20 minutes. It is speculated that the effects of the antispasticity position did not extend for a long period of time or provide any permanent changes. Regardless, the support for antispastic positioning was relevant to include in the development of the training program for the CRWs in the DR.

Redstone and West's (2004) study also involved the use of adaptive seating to assist children with feeding. Feeding is an occupation that is very important for individuals and can make them feel more independent if supported in the correct manner to enhance self-feeding. The researchers advised caregivers to use an upright position when feeding and allow the child to be in a chin tuck head position. The chin tuck position helps food move from the mouth to the pharynx and down the esophagus rather

than to the trachea which descends to the lungs. Another strategy that the authors recommended was using a wedge cushion or raising a knee when a child is on a person's lap to decrease the angle of hip flexion. When the angle of hip flexion is decreased, extensor spasticity is lessoned or inhibited. Other principles that the authors used for proper positioning of children with disabilities included: utilizing symmetrical position, placing knees and feet in 90 degrees of flexion, stabilizing the feet, using a seat belt at the pelvis to secure the child, and providing a solid table surface in front of the child for added support.

The principles discussed by Redstone and West (2004) are very beneficial for children with several types of neurological disabilities. Supporting children in the proper manner is very individualized, but the general principles given in this article are conducive to any child. The researcher incorporated these principles in the training program for the DR as they are simple to remember and understand, as well as adaptable to meet the needs of many different children with disabilities.

Stavness (2006) reviewed recent evidence of all research on the effect of positioning for children with cerebral palsy. The researcher reviewed 16 journal articles published after 1980 and compiled the significant results in a meta-analysis to determine which seating positions provided the most upper extremity function for participants. This review found that an upright position with a fitted seating device allows the child to have the most effective upper extremity function. Several of the studies included in the review utilized tasks such as reaching and operating a communication device. The review also found that the use of a hip belt, abduction orthosis, footrests and a sloped forward seat of 0-15 degrees optimizes functioning.

The results of these studies provided several basic principles to use in the workshop designed for training the community rehabilitation workers in the DR. One challenge in the DR was lack of access to adaptive seating equipment. Other adaptations made by the researcher included using materials readily available in the DR to mimic the effects of the adaptive seating equipment.

In Summary

This study tested the efficacy of a training program for community rehabilitation workers and parents in the DR. Based on the literature analyzed for this research study, several gaps were identified. These gaps included limited literature on effective training programs in developing countries, the cultural values of the DR, and the limited access to healthcare services in the DR.

The researcher developed the training program based on the analyzed literature, previous experience in the DR, and the cultural values of Dominicans. The goal of this training program included supplementing previous training provided to the CRWs to allow them to better meet the needs of their clients. To accomplish this goal the researcher utilized the principles of andragogy (Knowles, 1998) to provide a training program that was relevant to the participants. Feedback and evaluation methods studied from the literature helped determine what method of evaluation was the most appropriate to test the efficacy of the training program. The evaluation methods utilized a combination of quantitative and qualitative methods to measure of the program.

Chapter 3. Methodology

Overview

The purpose of this study was to assess a training program developed for parents and community rehabilitation workers in the DR on seating and positioning children with disabilities. Children with physical disabilities in the DR require improved, high quality rehabilitation services to address their needs. The Dominican government provides health care and rehabilitation services for all citizens under a universal health care system. Large, urban hospitals provide the government health care services. However, for families who live in rural areas of the country, impoverished city slums, or shantytowns accessing rehabilitation services can be costly and difficult to obtain. Community-based rehabilitation programs provide rehabilitation services to families in rural and impoverished communities. These organizations provide limited training to rehabilitation workers to meet the immediate needs of the community. Workshops and presentations can help supplement the basic training that these organizations provide. Additional training can help meet the needs that rehabilitation workers in the community identify after primary training is completed. As discussed previously, the training at Fundacion Cuidado Infantil Dominicano (FCID) is primarily physical therapy based. Providing an occupation-based prospective to therapy will help community rehabilitation workers (CRWs) provide families with additional skills to improve the child's independence with life skills (T. Bekker, personal communication, March 12, 2007).

This study utilized a pre-test post-test design. Participants completed a pre-test prior to the workshop and immediately filled out a post-test following the session. The researcher measured gains in knowledge from the workshop through the pre- post-test. In

addition, the participants completed a survey to measure their satisfaction with the program and areas for improvement in the future. Two months after the training, the researcher provided a follow-up post-test and satisfaction survey to the participants. The follow-up test assessed the implementation and use of the training principles in the CRWs and parents' work with children with disabilities. The data gathered from this study identified a training program that was effective in improving the knowledge base of participants in the DR on occupation-based seating and positioning principles.

Participants

The participants for this study were CRWs and parents affiliated with FCID. The director of FCID recruited the participants for this study. One week prior to arrival to the DR, the researcher sent a recruitment flyer to the director to post in the office of FCID (Appendix A). This was a convenience sample due to the limited contacts of the researcher in the DR. Researchers required all CRWs and parents participating in the study to be affiliated with FCID and over the age of 18. During the two training sessions assessed, a total of 28 subjects participated in the study.

Measurement Instruments

The primary researcher developed the pre-test and post-test (Appendix B). The pre-test consisted of a demographic section for CRWs and parents to complete. The data gathered from CRWs included age, time with FCID, prior training, and level of formal education. The data gathered from the parents included the participant's age, the age of the child receiving services from FCID, how long the child had been receiving these services and the formal education of the parent. The pre-test and post-test included the same 6 multiple choice questions regarding material covered in the training program.

In addition to the post-test, the researcher administered a satisfaction survey (Appendix B). This form was a self-report Likert scale with 5 questions, with an area for written comments from the participants. The satisfaction surveys measured participants' satisfaction with the training program, individual's thoughts on the use of the training principles in their daily practice, and changes the participants suggested for future sessions. The primary researcher and a native Spanish speaker translated all evaluation tools, including the pre-, post-tests and satisfaction surveys, through a process called back translation. After the initial translation, a native Spanish speaker from the DR translated the form back into English to determine if the document matched the original intent of the researcher. In addition to back translation, the native speaker gave suggestions to make the document more culturally appropriate for the target population.

Procedures

The Ithaca College Human Subjects Review board approved the design and method of this research (Appendix C & D). In March 2007, the researcher presented the training program on two separate occasions to participants in the DR, over a block of two hours. Each day the researcher presented to a different community in order to reach a diverse group of participants.

Two months after the training program, the researcher provided a follow-up survey to all participants. This occurred in May 2007. The two-month follow-up helped determine how much knowledge the participants retained from the training and if they found it useful after applying the principles with their clients.

Pilot Testing

The researcher and assistants completed a pilot test of the training program one month prior to the administration in the DR. The group of participants recruited from Ithaca College included experts in the field of occupational therapy, students in the occupational therapy program, and students from outside the occupational therapy program. The primary researcher and research assistants administered the training program in English. The researchers found the pilot testing valuable to help practice the training and testing methods. Participants provided feedback to the researcher that helped clarify questions on the tests and provided additional resources to include in the training program. The researcher made changes to the training program and test measures following this pilot test.

Confidentiality

Prior to the start of each training session, the researcher explained confidentiality to the participants. Participants signed the confidentiality statement given by the researcher informing them of their participation in the study and that no identifying information would be used in the study (Appendix E). Research assistants coded all forms with a uniform number and asked participants to omit their names from all forms except the informed consent document. This coding system allowed the data to be gathered without the primary researcher seeing identifying information. Upon return to the U.S., the researcher kept all materials in a secure office with access given solely to the researchers and research committee. The researcher assistants kept the master list of all participant's names and code numbers. The primary researcher did not have access to this information after the initial study date.

Training in the Dominican Republic

On the days in which the researcher presented the training program, CRWs visited the communities to invite fellow CRWs and parents to the training program. Depending on the community visited each day, the training occurred in a central location for participants to attend. The director of FCID was not present at the training dates in which the researcher collected data. This assisted the researchers in maintaining confidentiality of which employees participated in the study. The researcher gave all participants the option of participating in the training program but not the study. While none of the subjects declined to participate in the study, if someone had, they would have experienced the entire training, but would not have completed the pre-test, post-test and satisfaction survey. When participants accidentally placed their name on a coded form, the name was blacked out with a permanent marker.

Program

The training program began with an introduction by the researcher and an explanation of informed consent and confidentiality. The researcher discovered that many of the participants did not understand the concepts of informed consent and confidentiality. The primary researcher, with the assistance of a translator, explained these concepts in order to clarify the purpose of the study and how the researcher would use each participant's information. After signing the informed consent form, research assistants assigned each participant a number to be used on each document. This coding system allowed the researcher to maintain confidentiality by omitting participants' names from each questionnaire. After administration of the pre-test questionnaire, the researcher presented the training program. The program consisted of an overview of proper sitting,

examples of how to seat children with spasticity and low tone, how to hold children with different types of disabilities, and examples of occupations to engage in with the children once properly seated. Appendix F includes a full description of the program. The researcher demonstrated positions with the use of dolls and pictures. Throughout the program, the participants answered questions posed by the researcher, and asked questions specific to the children they work with. Research assistants administered the post-test and satisfaction survey following the training program.

Data analysis

Data analysis included descriptive and nonparametric statistics using the Statistical Package for Social Sciences 15.0 (SPSS, 2006). Descriptive statistics analyzed demographic information of the rehabilitation workers and parents of children with disabilities. These descriptive statistics included frequency, percentages, and means of the data. The researcher analyzed frequency distributions to determine the distribution of scores on the pre-, post- and follow-up tests. In addition, the researcher utilized multivariate statistics to determine any significant change in test scores between the pre-, post-, and follow-up tests. Correlation statistics determined the relationships between descriptive statistics of the participants and test scores. All tests used an alpha of .05.

The researcher analyzed qualitative data by compiling key phrases and categorizing these phrases into themes. The qualitative data identified three themes including, general positive comments about the program, comments related to specific training topics, and changes to future programs.

Assumptions

Throughout this process the researcher assumed that the participants did not have training on seating and positioning to the extent that the program provided. The researcher also assumed that the majority of participants did not have a high level of education, but could read and write; therefore the researcher used elementary-level language throughout the training program.

Limitations and De-limitations

There were several de-limitations the researcher imposed during the design of this study. The researcher limited the study sample to community rehabilitation workers from FCID. The researcher had limited time to complete the study in the DR and therefore, presented the training program to only one organization. An additional de-limitation was the researcher's choice to not include a control group. The researcher was unable to coordinate a control group and made the decision to complete the study with a non-scientific design to allow as many rehab workers as possible to attend the training program.

A major limitation to this study was the time restraint on the training program. Prior to arrival at FCID, correspondence with the program director confirmed that the researcher would present one training session in a block of three to four hours. Upon arrival, due to unforeseen circumstances, the researcher and FCID changed the training to a two-hour session presented in three separate communities. Therefore, the researcher did not have enough time to present the entire training session. Due to these time constraints, the researcher could not include the practical application portion of the session. The researcher presented a third training session, in which the director of FCID was present at

the session and acting as the translator. During this session the researcher could not gather data due to confidentiality issues of having the program director present during the session. Since the researcher did not have to explain confidentiality and informed consent, the researcher had more time and was able to include the practical application portion of the training. Participants provided verbal feedback on the session. They found the practical portion of the session to be very beneficial. Another limitation was the choice of the researcher to not be blind to the study. The reason for this was the necessity for the researcher to explain informed consent and help with the process. While the researcher did have research assistants, these individuals did not speak fluent Spanish, and therefore could not answer questions that arose.

An additional limitation was the inability of the researcher to be present in the DR to administer the follow-up surveys. The researcher provided all individuals who attended the session with a sealed envelope with their name on it. Only the individuals who participated in the study completed follow-up surveys. The instructions stated that these surveys should be returned in the sealed envelope provided to the FCID office. There is no way to ensure that FCID administered the follow-up survey confidentially and that the director of FCID did not know which employees participated in the study.

A limitation in this study was the language barrier. The researcher was a native English speaker with some Spanish language training, but she was not fluent. The researcher did have a translator present, but did not use the translator unless absolutely necessary. There may have been concepts that the participants did not comprehend due to the researcher's limited language fluency, but might not have expressed this during the training. Another limitation for this study was the cultural boundaries. The researcher

made a previous trip to the DR to study the culture. Even after this trip, the research did not know all the cultural issues that may impact the study, and thus these unknown issues may have interfered with the success of the program. Some of the participants were very welcoming and eager to learn, but others questioned the researcher's ability to teach. Part of this may have been the researcher being an American and coming in to train the participants, in addition to the researcher's moderate Spanish speaking abilities.

Chapter 4. Results

Introduction

This chapter describes the findings of this research study. The first section reviews the demographics of the participants. The second section reports the results of the pre-, post-, and two-month follow-up tests as related to the research questions. The final section includes the results of the satisfaction survey administered during the post-test and two-month follow-up test.

Participant Demographics

A total of 29 participants attended the training program. One participant was under the age of 18, therefore the researcher excluded her data during data analysis, making the total number of participants 28. The participants of this study included Community Rehabilitation Workers (CRWs) (N=17), parents of children with disabilities (N= 5) and CRWs who were also parents of children with disabilities (N=6). Due to the small number of parents who participated in the program, the researcher combined the groups of parents and CRWs who are also parents (N=11) in order to make the analysis between groups stronger, when compared to the CRWs group (N=17).

All participants were females with a mean age of 32.14, SD = 9.76, and a range of 18 to 53 years of age. The average education level of the participants was high school (M = 2.3, SD = 1.02). The results show education level through use of intervals, including primary (1), high school (2), technical school (3), and university (4). Therefore, the mean of 2.3 refers to a high school level of education.

The CRWs answered questions regarding their length of time working with FCID and prior training experience. The question measured time (years) in ordinal categories,

thus the mean relates to different categories of time, rather than actual years. The average number of years the CRWs worked for FCID was between 4 and 5 years (M = 3.00, SD = 1.97), with a range of less than a year (N=8) to 12 years (N=5). The majority of CRWs had prior training experience (72.4%), but most did not have prior experience working with children with disabilities before working for FCID (62.1%). The parents answered questions in regards to the services FCID is providing for their children. When asked how many years their child had been receiving services from FCID, the average response was between 4 and 5 years (Mean = 2.91, SD = 1.51). The average age of the children receiving services was 7.55 years, SD = 3.64. Table 1 summarizes the demographic data from group 1 and 2 in terms of age of participants, education level, time with FCID, prior training experience and prior experience working with children with disabilities. The statistical differences between group 1 and group 2 were not significant. Therefore, the researcher combined the two groups during analysis of outcomes on test measures.

Table 1

Participant Demographics

Variable	Number of Participants		Overall Percentage
	Group 1	Group 2	
CRW, parent or both			
CRW	10	7	61%
Parent	4	0	14%
Both	1	6	25%
Age (Mean)	32.87	31.31	-
Education Level			
Primary	4	0	17%
Secondary	6	7	56%
Technical	0	1	4%
University	1	4	22%
Time with FCID			
Less than 1 year	4	5	32%
2-3 years	3	2	18%
4-5 years	1	1	7%
6-7 years	1	4	18%
8-9 years	1	0	4%
More than 10 years	5	1	21%

Pre-, post- and two-month follow-up post-tests

The research assistants administered a pre-test prior to the training session. Each participant answered a 6 question test. The questions were in a multiple choice format with two to five response options for each question. The researcher tallied the correct responses for a total score of six. For answers that participants had not completed or gave two answers, the researcher marked the answer as incorrect. The average score for the pre-test was 4.08, SD = 1.05.

Immediately following the training session, the research assistants administered a post-test. The same procedure was used to tally the responses for each participant for a total score of six. The average score for the post-test was 4.92, SD = 1.16. Two months following the training session the researcher sent post-tests to all participants. Twenty six participants of twenty eight returned their follow-up tests, giving a return rate of 92.8%. The average total store for the follow-up post-test was 5.35, SD = .745.

The researcher conducted an analysis of the means for each test using a repeated measures test. The analysis revealed a significant difference between the scores of the pre-test and post-test ($p = .000$) and the pre-test and follow-up test ($p = .000$). The significance of the changes in test scores is interpreted as a successful gain in knowledge by the participants who attended the seating and positioning training. Figure 1 illustrates the findings of this analysis.

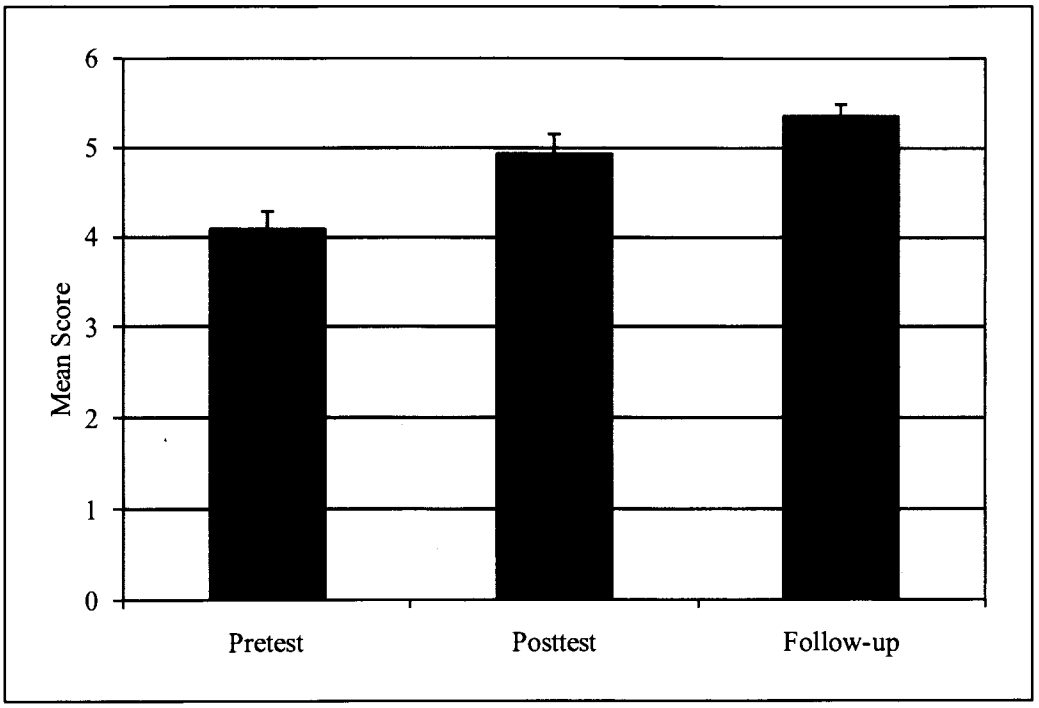


Figure 1. Means and standard deviations for the pre-test, post-test, and two-month follow-up test.

The researcher used correlation analysis to determine if there were any significant relationships between demographic data and test scores of the participants. Demographic factors of age, education level, time with FCID, prior training, and prior experience were correlated with the test scores of the pre-test, post-test, and two-month follow-up test. Significant relationships were found between prior training and the post-test ($r = -.452$, $p < .05$) and two-month follow-up test scores ($r = .570$, $p < .01$). These results show a negative, moderate correlation between prior training and post-test and follow-up test scores. Table 2 reports all correlations.

Table 2

Correlation Statistics between Participant Demographics and Test Scores

		Age	Education Level	Time with FCID	Prior Training	Prior Experience
Pre-test Score	Correlation	-0.001	0.287	-0.229	-0.251	0.249
	Sig. (2-tailed)	0.996	0.184	0.293	0.248	0.251
Post-test Score	Correlation	-0.086	0.171	0.108	-0.452	0.138
	Sig. (2-tailed)	0.663	0.436	0.623	0.03	0.531
Follow-up Score	Correlation	-0.105	0.02	0.045	-0.57	0.235
	Sig. (2-tailed)	0.609	0.93	0.847	0.007	0.305

Satisfaction Surveys

Participants completed a satisfaction survey during the post-test and two-month follow-up test. The post-test survey included five self-report Likert scale statements regarding participant satisfaction with the training program. Each survey provided space for written feedback for additional information the participants wished to provide. The two-month follow-up survey utilized the same format and questions, but included an additional section for specific information the participants felt the researcher should include in future training sessions.

The Likert-scale questions used a five point rating scale (from 1= not satisfied to 5 = completely satisfied). The researcher utilized descriptive statistics to analyze the scores of the satisfaction survey. The researcher averaged the score given to each question for a total rating score, out of 5. A majority of the participants felt "completely satisfied" with the program, making up 75.9% of the total response. The other participants were either "somewhat satisfied" (6.9%), or "satisfied" (3.4%), (Fig. 2). The two-month follow-up survey yielded similar responses with 89.7% of the participants feeling "completely satisfied" with the training program, and 20.7% of participants feeling "satisfied" (Figure 3).

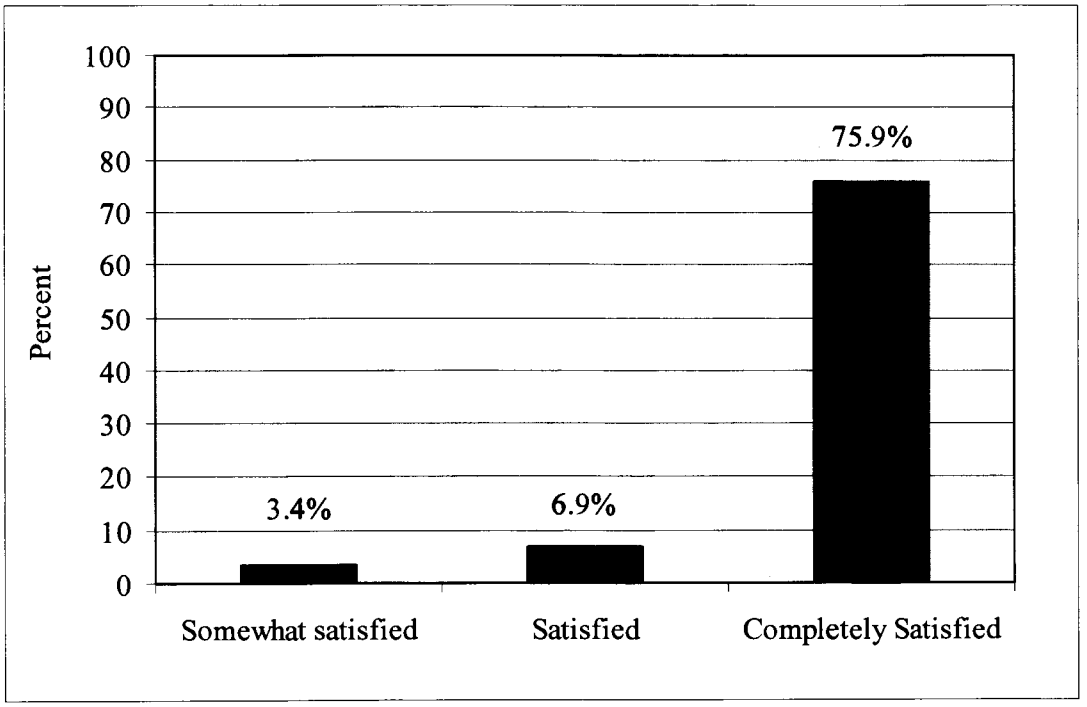


Figure 2. Post-test satisfaction surveys with percentage of average response score.

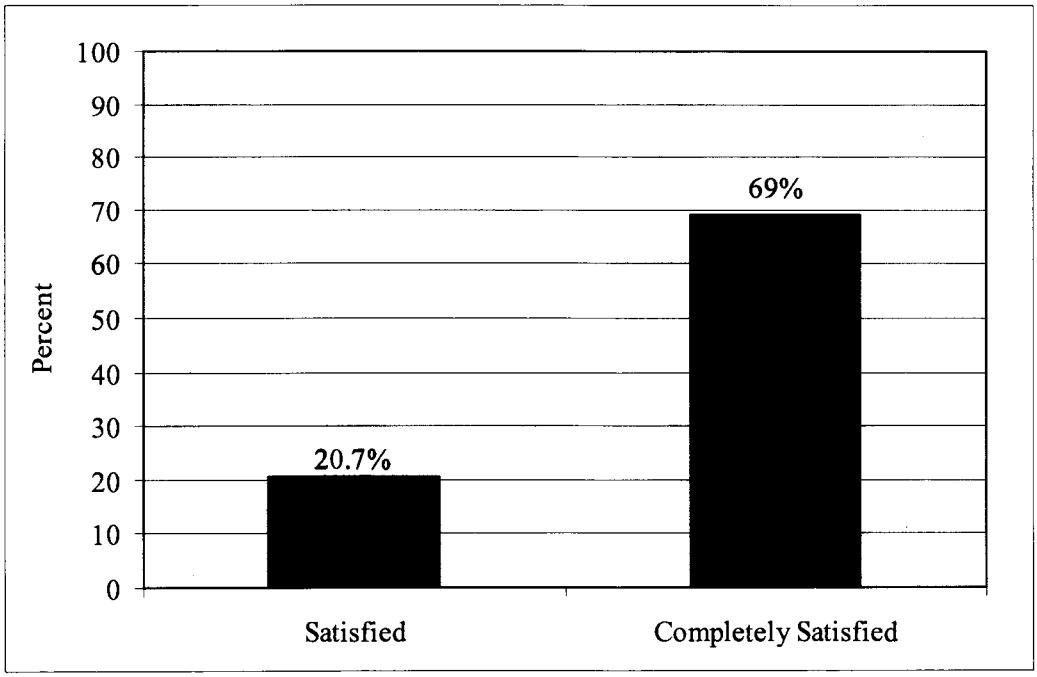


Figure 3. Two-month follow-up satisfaction surveys with percentage of average response score.

The researcher analyzed the qualitative data from the written feedback on the satisfaction surveys through translating the written feedback that was legible and categorizing these statements into general themes. The researcher analyzed a total of 42 statements, 22 from the post-test surveys and 20 from the two-month follow-up surveys. Three reoccurring themes emerged including: 1) general positive comments about the program, 2) comments about specific training topics, and 3) statements regarding changes that should be made to the program.

General positive comments included statements of overall positive reaction to the training program and the value gained from attending. These statements included, "I am very pleased with this program that will help my son" and "This program is very good and very important because we learned new things about seating children with disabilities." Comments related to specific training material included statements about the information the participant learned and found valuable from the session. These comments included, "It is important to know the correct postures well for seating children with disabilities, then you use these positions correctly to help correct postural problems." Finally, very few comments gave feedback to the research about what should change in future installments of this program. One of these comments included, "It should be more extensive and with more practice with children."

From the 42 statements analyzed, 92% provided positive feedback. Only 8% of the statements provided suggestions for improvements to future training programs. Table 3 summarizes the comments from written feedback gathered from the satisfaction surveys. These comments are a representative sample of the complete 42 statements gathered by the researcher.

Table 3

Sample Statements from Participant's Written Feedback on Satisfaction Surveys

General positive comments	Comments related to specific training material	Suggestions for changes to future training programs
"I am very pleased with this program that will help my son."	"The presenters made good use of the material used to present the training program."	"It should be more extensive and with more practice with children."
"As a promoter I feel satisfied with this information that the mothers of the children I work with learned."	"The trainers of this program were very good and gave a large utilization for the excellent materials to use."	"In the future teach other positions that can be utilized by the promoters."
"What I learned was very interesting."	"You helped us improve the quality of life for these special children."	"Bring a training sheet so I can consult it when I forget the information."
"This program is very good and very important because we learned new things about seating children with disabilities."	"This program was very interesting because we could learn the different forms of carrying and seating a child with a disability."	"Please give more time to the students to ask more questions."

The following chapter discusses the results reviewed in this chapter. The discussion includes relating these findings to the literature reviewed earlier and how the study contributes to this literature. In addition, overall conclusions about the study's efficacy will be provided as well as limitations and suggestions for future research.

Chapter 5. Discussion

This study evaluated the efficacy of an occupation-based training program on seating and positioning, as shown through knowledge gained by the community rehabilitation workers and parents of children with disabilities who attended the program. The researcher used a review of the literature, personal communication with individuals in the Dominican Republic (DR), and personal past experience in the DR, as a framework to develop a training program to teach occupation-based seating and positioning techniques. Using a pre- post-test measure design, the results demonstrated the success of the program on teaching important techniques in seating and positioning principles. Below, the researcher reviews and discusses the results in relation to the research questions posed at the beginning of this study.

Research Question 1: Was this training program effective in teaching occupation-based seating and positioning techniques to Community Rehabilitation Workers (CRW) and parents of children with disabilities?

To test the efficacy of the training program provided to the CRWs and parents the researcher and research assistants administered a pre-test, post-test and a two-month follow-up test. These tests assessed the amount of knowledge gained from the training program. The six multiple choice questions reviewed key concepts taught in the training program. The results of the pre-, post- and follow-up test scores demonstrate a significant gain in mean total scores at each testing. These results demonstrate that this training program was effective in teaching key occupation-based seating and positioning principles to the women who attended the program.

The research reviewed in the literature review showed that many training programs use a pre- post-test design to assess the effectiveness of these types of programs in changing knowledge of participants. For example, Balcazar and associates (2006) used a pre- post-test with 8 multiple choice questions to measure the change in promotoras' knowledge of heart-healthy behaviors taught during a training program. The tests focused on the participants' change in knowledge, as did the test used in the current study. Soliman and his associates (2006) also used a pre- and post-test design to evaluate the knowledge gained by doctors during a continuing education session on breast cancer. The test measure used by these researchers included 50 questions about breast cancer. The study's use of a pre- and post-test yielded a significant change in test scores.

Olness and colleagues (2005) assessed the knowledge gained by participants during a training program for the special needs of children during management of disasters. The study assessed the effectiveness of a training program in seven developing countries and used a pre- and post-test with multiple choice answer questions to measure knowledge gained by participants. The training was very successful and every training program yielded significant changes in pre- to post-test scores, except for one country due to the high level of education of the participants. Again, the pre- post-test measure was a successful tool for evaluating the knowledge that participants gain during a training program.

These cultural training programs demonstrated the successful use of pre- and post-tests to measure the effectiveness of the training program in promoting changes at the knowledge level. The study to test the efficacy of an occupation-based training program in the DR utilized a similar pre- post-test system to document whether

participants reached the knowledge-based objectives of the workshop. While the test measure was not assessed for validity and reliability, it was effective in assessing the knowledge gained by the participants. The language used was appropriate for the participants, as demonstrated by their ability to answer the questions and get a mean score of 4 out of 6 on the pre-test. In addition, during the field test, faculty and students of the Ithaca College Occupational Therapy department helped the researcher use appropriate language and wording to ask questions specific to the principles of the training program. This process helped eliminate unnecessary questions and clarify confusing questions prior to the administration of the tests in the DR.

In addition to the pre- and post-test, the two-month follow-up test showed a significant change in mean scores from the pre-test and post-test scores. The use of a follow-up test was not reported in the literature reviewed, most likely due to the difficulty of returning to a country to administer a follow-up test. Regardless, the same post-test that was used following the administration of the training program showed a higher mean test score two-months following the training than the test scores immediately following the training. There could be many reasons for this result. The community rehabilitation workers were able to apply the training principles with their clients for two months after the training program. The practical application of these principles may have increased the participant's understanding of the training material, thereby increasing their test scores on the follow-up. Another possible explanation is that the rehab workers and parents also had two months to discuss the training principles and clarify among themselves any areas they may have been confused about, but unable to ask during the training program. Since

the researcher was not able to return to the DR to administer the follow-up test, these are only theories on how the follow-up test scores could have improved over the two months.

Pre- post-tests have been a common tool to measure knowledge gained during training programs. The studies described above utilized pre- post-test measures and found significant results from the tests. The researcher modeled the test measures from these studies to demonstrate the efficacy of the occupation-based training program presented in the DR by the participants' gain in knowledge from pre-test to post-test. The significant change in mean test scores from the pre-test to post-test and follow-up test demonstrates that this training program was effective in teaching key seating and positioning principles to the participants of this study.

Research Question 2: Were the participants satisfied with the training program?

The feedback forms found in the literature helped the researcher develop the satisfaction survey used during this study. Olness' (2005) study which trained health care professionals on the needs of children during disasters utilized several types of feedback to help adapt the multi-day program to meet the needs of the participants. One minute feedback was used to write any questions participants had after each lecture. Daily feedback was used to gather information from participants after each day to rate presentation quality and usefulness with a Likert scale and space to write comments. Final feedback was completed after the course and consisted of yes/no, Likert scale, and open-ended questions (Olness et al., 2005). The researcher developed a satisfaction survey form similar to the daily feedback form used by Olness, due to the fact that the training program in the DR was only 2-3 hours long and conducted on one day.

The studies reviewed showed methods to gather information about participant's satisfaction with training programs. The researcher and research assistants in the present study administered a satisfaction survey during the post-test and two-month follow-up test in order to measure participants' satisfaction with the training program. The researcher used a five-point Likert scale for participants to rate areas of the training program including the materials used, principles taught, the presenters, and the training program as a whole. The results of the satisfaction survey showed that following the post-test 75.9% of the participants were completely satisfied, a mean score of 5 out of 5. The follow-up satisfaction survey showed that 69% of the participants were also completely satisfied.

Feedback from the participants showed that they were satisfied with the training program. The lowest Likert scale rating given to any of the questions was 3 out of 5. In addition, 92% of the written feedback was positive. Of the positive comments, two themes predominated: general satisfaction and enjoyment of the program, and comments about satisfaction with specific aspects of the training. One participant commented: "This program was very interesting because we could learn the different forms of carrying and seating a child with a disability. Now we can teach what we learned to the mothers of these special children. It is always good to participate in program like this one to obtain better skills and knowledge." Another participant commented on the program saying, "It is excellent because you help us improve the quality of life of these special children. This program is excellent and I give thanks to God for this program."

More constructive comments were found in the two-month follow-up survey. This is most likely due to the fact that the participants had time to reflect and use the

techniques taught and therefore thought of what could be helpful in the future. One woman suggested for future trainings to, "Bring a training sheet of this so I can consult it when I have doubt that my memory fails me." Overall the comments were extremely positive. It seems that since the women showed improvement in test scores and were satisfied, the program was successful in its purpose of educating the rehab workers and parents.

The satisfaction survey also allowed the researcher to glean information regarding the theoretical foundation of the presentation: Knowles principles of andragogy. The researcher utilized these principles to develop a training program for adult learners. Participants in this study may have felt satisfied with this program due to the use of these principles because the program was relevant to them and they felt respected by the investigator. The study by Mak & Plant (2005) of a prevocational training program for doctors in rural Australia used these adult learning principles as well and found that they were successful when implementing the program. The first principle utilized was involving the adult learners in the planning and evaluation of the program. For this study in the DR, the researcher previously met with the rehab workers and talked to them about what their needs were when working with the children. The researcher also collaborated with the director of Fundacion Cuidado Infantil Dominicano, the organization that oversees the community rehabilitation program, to develop a training program that would meet the needs of the rehab workers and parents to provide additional services to their clients and children.

The second principle of andragogy Mak and Plant (2005) used was teaching topics that are interesting, important and relevant to the adult learners. In the DR, the

researcher invited the rehabilitation workers and parents to the training program, and these women came voluntarily after learning the topic of the training. The supervisor of the rehabilitation program did not mandate the rehabilitation workers to attend this program. In addition, written feedback on the satisfaction surveys demonstrated that the participants felt the information was very important and relevant to their work. One woman commented, "This program had a lot of importance for us, now that we have learned as promoters and also the mothers of our children have learned a lot." The participants also commented on how certain aspects of the training specifically helped them, "This program is very positive for the new promoters like myself. To have made the training is always good for the practice. I enjoyed the material with the doll because I could see when it had spasticity."

Based on the use of the principles of andragogy to teach the training principles to adult learners, the quantitative satisfaction scores, and written feedback, the researcher concluded that the participants were satisfied with the training program. Through written feedback, the participants felt satisfied with specific areas of the training, understood the general importance of the training, and gave suggestions to improve the program in the future. In addition, the scores on the quantitative satisfaction scores matched the written comments of being fully satisfied with the program.

Research Question 3: What demographic data correlates with the pre-test, post-test, and follow-up test scores?

Many studies on training programs gather demographic data to assess if any data correlates to higher test scores. Often demographic factors can show a relationship through correlation statistics to test scores when using a pre- post-test measurement

system. Soliman's (2006) study on a continuing education module for doctors found that participating doctors with a longer time in practice and those doctors treating a certain amount of cases related to the training topic had a higher score on the tests. Olness' (2005) cultural study on a training program for health care professionals on the special needs of children during disasters found that one country's participants did not demonstrate significant improvement on the test measures. The researchers correlated the demographic data to conclude that the participants had a significantly higher education level than participants from other countries where the program had been delivered, therefore affecting the test scores.

The results from the training program in the DR showed that only one demographic factor had a significant relationship to the test scores. Prior training had a significant, moderate, positive relationship with post-test and follow-up test scores. This score indicates that participants who reported having prior training tended to have higher post-test and follow-up test scores. The interesting aspect of this statistical relationship is that they did not have a significant higher pre-test score. This correlation may have been due to the means by which the researcher worded the questions. Regardless, it is not clear whether the questions asked within the demographic survey actually gather information specific to prior training experience. The researcher worded the question as a yes/no answer, but did not ask participants to expand on the type or intensity of their prior training.

Outside of the prior training relationship, no other demographic data showed a significant relationship to the outcome on the test measures. It is possible that there were not enough participants to show a significant relationship, therefore with a larger sample,

other demographic data may have significant relationships with test scores. For the purposes of this study, no demographic factors, other than prior training, showed an influence on the test scores of participants.

In summary, the occupation-based training program presented to community-based rehabilitation workers and parents of children with disabilities in the DR was a successful program in influencing knowledge of seating and positioning principles for children with disabilities. A significant change in test scores from the pre-test to post-test and two-month follow-up test demonstrates that participants understood the key principles from the training program. In addition, participants conveyed high levels of satisfaction with the presenters themselves, the principles taught, and the materials used during the program. Finally, only one demographic factor, prior training experience, correlated with the participant's test scores. This program was highly successful as a training program for the CRWs and parents who participated in the DR in improving the participant's knowledge base of seating and positioning children with disabilities.

Chapter 6. Summary, Conclusions, and Recommendations

The researcher developed a study to determine the efficacy of an occupation-based training program on seating and positioning children with disabilities. The purpose of this study was to increase community rehabilitation workers (CRWs) and parents of children with disabilities' knowledge of the seating and positioning principles taught in the training program in the DR. The design of this study included pre-, post-, and two-month follow-up tests to measure the change in knowledge. In addition, participants completed satisfaction surveys to rate the program and suggest changes for future training programs.

The results of this study demonstrated an effective training program for increasing knowledge of participants on seating and positioning techniques. Data analysis of the test scores showed a significant change in test scores from pre-test to post-test and pre-test to two-month follow-up test. In addition, participants were highly satisfied with the training program as rated on the satisfaction surveys given during the post-test and two-month follow-up. During the two-month follow-up, participants responded that they used the training principles in their work with children with disabilities. The majority of participant written comments were positive (92%) with a few comments on changes to future programs. These suggestions included, adding a manual or written handout, giving more time for participants to ask questions and using live children to demonstrate positioning.

These results cannot show actual implementation of the seating and positioning principles in the CRWs work, but it did demonstrate that participants learned the information and found it important and relevant to their work with children with

disabilities. There were limitations to the study including language barriers, time constraints and non-standardized test measures. Regardless, the participants found this training program beneficial and demonstrated improved knowledge in occupation-based seating and positioning techniques.

There is extensive opportunity for further research, not only in the DR, but in all developing countries. Most countries have community-based rehabilitation programs. These small organizations are limited in the resources they can provide. Future research should involve testing the efficacy of other culturally relevant training programs on basic occupation-based rehabilitation techniques that can be used across the globe. These training programs should include practical application and possible site visits to see actual use of techniques in the community.

In addition, future researchers should consider complications that may arise due to cultural differences, language barriers and the effect of confidentiality on the participants who may not understand this concept. Confidentiality is not always understood to the extent that it is in the United States therefore researchers should consider different ways to present the concept of confidentiality in order to reduce the time needed to explain it to participants.

There is a wealth of opportunity for research to be conducted in developing countries. Not only will the profession of occupational therapy be expanded because of this research, but individuals with disabilities in developing countries will benefit tremendously from new treatment techniques taught to their community rehabilitation workers.

Appendix A: Recruitment Flyer

Free Training Program
March 12 - 14th, 2007
1-5pm

Topic: Seating and positioning a child with a disability

Presented by: Katherine Cooper, Ithaca College, USA

This is a presentation by an occupational therapy student for her school degree. Please read below the requirements to attend this program. This is not a required program to attend.

To attend: You must be 18 years or older, a community rehabilitation worker or a parent of a child who receives services from ICC. This program is part of a study, you may attend the program even if you do not want to partake in the study.

Program will be presented March 12-14th at 1pm at ICC. For more information please see Trudy Baker.

Appendix B: Test Measures

Participant No. _____

Seating and Positioning a Child with a Disability
Pre-Test and Demographics

Demographics

Community Rehabilitation Workers:

1. How long have you worked for FDIC? _____
2. Have you received previous training? (Circle One)

   Yes No
3. Did you work with children with disabilities prior to working for FDIC? (Circle One)

   Yes No
4. How are you? _____
5. What is your education level? (Please check next to what level you have completed)
   Primaria _____
   Secundaria _____

   Universidad _____

Parents:

1. How long has your child been working with FIDC? _____
2. How old are you? _____
3. What is your education level? (Please check next to what level you have completed.)

   Primaria _____
   Secundaria _____

   Universidad _____
4. How old is your child? _____

Pre-Test

Please circle one answer for each question.

1. Before seating a child with spasticity what must you do?
    a. Feed the child
    b. Play a game
    c. Warm them up with range of motion exercises
    d. Make sure they are dressed

2. True or False: Good seating leads to better bone development.
    a. True
    b. False

3. What materials can you use in the home for seating?
    a. pillows
    b. blankets
    c. chairs
    d. your own body
    e. all of the above

4. Carrying a child with his or her legs on either side of your hips is an appropriate way to position a child with high tone.
    a. true
    b. false

5. After placing a child in a seated position you would
    a. leave him or her there
    b. play a game
    c. pick him or her up
    d. none of the above

6. How long do you leave a child with a disability in a seated position?
    a. 1 hour
    b. All day
    c. Until they cry
    d. 30 minutes

Participant No. _____

Seating and Positioning a Child with a Disability

Post – Test

Please circle one answer for each question.

1. Before seating a child with spasticity what must you do?
    a. Feed the child
    b. Play a game
    c. Warm them up with range of motion exercises
    d. Make sure they are dressed

2. True or False: Good seating leads to better bone development.
    a. True
    b. False

3. What materials can you use in the home for seating?
    a. pillows
    b. blankets
    c. chairs
    d. your own body
    e. all of the above

4. Carrying a child with his or her legs on either side of your hips is an appropriate way to position a child with high tone.
    a. true
    b. false

5. After placing a child in a seated position you would
    a. leave him or her there
    b. play a game
    c. pick him or her up
    d. none of the above

6. How long do you leave a child with a disability in a seated position?
    a. 1 hour
    b. All day
    c. Until they cry
    d. 30 minutes

Satisfaction Survey

Please circle the appropriate number to correspond with your satisfaction with the program.

1. How would you rate this training program?

1	2	3	4	5
Not Satisfied				Satisfied

2. How would you rate the material presented?

1	2	3	4	5
Not Satisfied				Satisfied

3. How would you rate the presenters of this program?

1	2	3	4	5
Not Satisfied				Satisfied

4. Will you use this information in your work with children with disabilities?

1	2	3	4	5
Not Satisfied				Satisfied

5. Would you attend another training program similar to this one?

1	2	3	4	5
Not Satisfied				Satisfied

Please write any comments you have about this program.

Participant No. _____

Seating and Positioning Training a Child with a Disability

Satisfaction Survey
May 2007

Please circle the appropriate number to correspond with your satisfaction with the program.

1. How would you rate the training program you attended in March?

1	2	3	4	5
Not Satisfied				Satisfied

2. How would you rate the material presented?

1	2	3	4	5
Not Satisfied				Satisfied

3. How would you rate the presenters of this program?

1	2	3	4	5
Not Satisfied				Satisfied

4. Did you use the information presented?

1	2	3	4	5
Not Satisfied				Satisfied

5. Do you still use the information presented?

1	2	3	4	5
Not Satisfied				Satisfied

6. Would you attend another training program similar to this one?

1	2	3	4	5
Not Satisfied				Satisfied

7. Is there further information that you feel you need in order to use the material presented?

_____

_____

_____

Please write any comments you have about this program.

Appendix C: Human Subjects Proposal

HUMAN SUBJECTS RESEARCH

COVER PAGE

Investigators: Katherine Cooper OTS, Melinda Cozzolino OTD, OTR/L, MS, CRC, BCN
Department: Occupational Therapy
Telephone: (908) 310-1464, cell

Project Title: Seating and Positioning Training for Community Rehabilitation Workers in the Dominican Republic

Abstract:

Most Dominicans believe that illness and disability can be a result of several things such as; a moral violation or sin, bad luck or spirits. Strong religious views of people in the Dominican Republic leads to families feeling that their child with a disability is a punishment from God for a sin they committed (Lopez-De Fede, 2002). Many families feel a sense of shame and embarrassment from this punishment from God and hide their children with disabilities from society (Haeussler-Fiore, 2002). These children often do not receive medical attention or rehabilitative services due to the lack of funding and the availability of these services (Lopez-De Fede, 2002).

International Child Care is an organization that sends community rehabilitation workers into the impoverished communities of the Dominican Republic to teach families, friends and neighbors simple rehabilitation exercises and techniques in order to improve the individuals function. The Community Rehabilitation Workers (CRW) are all women who have had some experience with family members or friends with disabilities. These women are given approximately three weeks of training in basic rehabilitation techniques. The purpose of this project is to develop a supplemental training program for the CRWs on seating and positioning children with disabilities. This study will use a pre-post test measure and a satisfaction survey to demonstrate the efficacy of this educational program designed to enhance the knowledge of the CRWs in the areas of biomechanical and postural seating and positioning.

Both pre and post test data will be gathered to assist the researcher to determine the efficacy of this program and if the CRWs found the information useful. A manual and resources will be provided to International Child Care, Inc. to be used for future training programs. By establishing this training program, International Child Care will be able to train future CRWs in these basic seating principles.

Proposed Date of Implementation: March 11, 2007 – March 16, 2007

Katherine Cooper OTS Advisor: Melinda Cozzolino
Print or Type Name of Principal Investigator and Faculty Advisor

Signature (Use Blue Ink) Principal Investigator and Faculty Advisor

ALL-COLLEGE REVIEW BOARD
FOR
HUMAN SUBJECTS RESEARCH

CHECKLIST

Project Title: Seating and Positioning Training for Community Rehabilitation Workers in the Dominican Republic

Investigators: Katherine Cooper OTS, Melinda Cozzolino OTD

Investigator Use	HSR Use Only	Items for Checklist
X		1. General Information
X		2. Related experience of investigator(s)
X		3. Benefits of the study
X		4. Description of the subjects
X		5. Description of subject participation
X		6. Description of ethical issues/risks of participation
X		7. Description of recruitment of subjects
X		8. Description of how confidentiality will be maintained.
N/A		9. Debriefing statement
X		10. Compensatory follow-up
X		11. Appendix A – Letter from Director
X		11. Appendix B – Recruitment Statement
X		12. Appendix C – Informed Consent Form
N/A		13. Appendix D – Debriefing Statement
X		14. Appendix E – Survey Instruments
N/A		15. Appendix F – Glossary to questionnaires, etc.
X		16. Appendix G – Training Program
X		17. Appendix H – Recruitment Flyer

Items 1-8, 11, and 12 must be addressed and included in the proposal. Items 9, 10, and 13-15 should also be checked if they are appropriate – indicate "NA" if not appropriate. This should be the second page of the proposal.

1. General Information

a. Funding for this project has been contributed by the Provost's Office and Occupational Therapy Graduate Department. Any additional funds needed during the project will be provided by the researcher. Expenses incurred during this project include airfare, travel expenses to and from the research site, equipment for the training program including posters, handouts and demonstration equipment, and duplication of testing measures and surveys.

b. This study will take place in the city of Santiago in Dominican Republic at the International Child Care office. The director of International Child Care, Trudy Bekker has verbally approved this study and will assist with recruitment. A formal letter of support was requested and is attached (Appendix A).

c. Upon the approval by the IRB, the researcher and research assistants will conduct this study during the week of March 12 - 16, 2007 in Santiago, Dominican Republic. The day of each training all individuals attending will be allowed to participate in the training program, but only individuals who sign the informed consent (Appendix C) and complete the pre and post tests (Appendix E) will be used in the study. A follow up survey (Appendix E) will be given two months after the initial training. This survey will measure the usefulness and satisfaction of the training. Data analysis will occur following the return to the States.

d. The results of this study will be reported in the Master's thesis of the researcher. The researcher plans to disseminate the findings for publication in a peer-reviewed journal and presentation in professional meetings.

e. The research assistants are junior occupational therapy students. The research assistants will be trained in research methods via an online module from Cornell University's Committee on Human Subjects. This module can be found at http://www.osp.cornell.edu/HSCompliance/index.html. The assistants will also be trained in administering the seating and positioning program through readings and training sessions provided by the primary researcher.

f. The training program has been and will continue to be developed with the help of the occupational therapy department faculty (Appendix G). The researcher and research assistants will present this training program to a sample of occupational therapy students and faculty in order to establish a baseline for how the program will be conducted, and if the test questions are appropriate. After this field testing, the program will be revised as indicated and translated into Spanish.

2. Related experience of investigator(s)

a. The researcher has taken several classes regarding interdisciplinary and international healthcare issues including, Health Care and Culture HINT 31200, and Life

Span Development and Culture PYSC 25110, including a trip to the Dominican Republic in the summer of 2006 to study and experience the culture of education of the Dominican Republic. The researcher has worked directly with the organization in which the study is being conducted, International Child Care, Inc. The researcher will be taking Research Methods and Biostatistics during the semester in which this study will be conducted. The researcher has also taken an online module from Cornell University's Committee on Human Subjects. This module can be found at http://www.osp.cornell.edu/HSCompliance/index.html.

b. Dr. Melinda Cozzolino is an Associate Professor and the Graduate Chair in the Department of Occupational Therapy at Ithaca College. She has been a successful thesis advisor and has served on a number of thesis committees.

The researcher has several committee members assisting in this research project including Dr. Carole Dennis and Dr. Judith Pena-Shaff.

Dr. Carole Dennis has had significant clinical experience working with children with disabilities, which has included adapting the environments they live in to promote function and development. In addition, she has considerable experience in research: she teaches research methods and has served as first reader for ten graduate theses at Ithaca College. Dr. Dennis has traveled to the Dominican Republic five times, supervising students there on three of these visits. She recently completed a research study on time use in preschools in the Dominican Republic: this paper was presented at a conference focusing on ethnographic research in June, 2006.

Dr. Judith Pena-Shaff has accompanied several students to the Dominican Republic for a culture and education class. She is also a native speaker of Spanish. Dr. Pena-Shaff also worked with Dr. Dennis on the research study on time use in preschools in the Dominican Republic.

3. Benefits of the study

a. The benefits of this study include identifying a training program that can be used cross-culturally, bringing occupational therapy to the third world, and enhancing the prior training of the community rehabilitation workers of International Child Care, Inc. in the Dominican Republic.

4. Description of the subjects

a. The participants of the study are community rehabilitation workers who are employees of International Child Care, Inc. They are all women over the age of 18. Family members of the children receiving services from International Child Care will also be invited to attend. Estimated number of subjects is 20 participants.

5. Description of the subject participation

a. Upon arrival at the study location, participants will sign in the with research assistants and be assigned a number. All tests and the follow up survey will have this number so data can be correlated after the study takes place. The participants will take a

pre test (Appendix E) prior to an approximately three hour training program (Appendix G). Following completion of the training program participants will be administered a post test and satisfaction survey (Appendix E). Participants will be asked to complete all tests and surveys, actively participate during the training session including demonstrating the skills acquired during the training, and asking questions as needed. The training will be provided by the researcher and research assistant with translation by the director of International Child Care. The program will include verbal discussion, physical demonstration and practice sessions on seating and positioning a child with a disability. Examples of modification of readily available materials to support a child with a disability will also be included. The entire program, including time to administer pre and post tests and surveys will take approximately 4 hours. Two months following the training program, envelops for all individuals who attended the program will be given to the director to give to each individual. For those individuals who participated in the study, a follow up survey will be included in an envelope to be completed and returned to the director. Individuals who are not partaking in the study will receive a thank you letter for participating in the program. This will allow the survey to be administered anonymously and the director can then mail the surveys back to the researcher with out knowing who participated in the study (Appendix E).

6. Description of ethical issues/risks of participation

a. Ethical issues that participants may face are anxiety about answering questions on the tests and asking questions during the training session. Participants may also feel pressure to attend the training session due to it being offered by their employer. The training is not mandatory and individuals can attend without participating in the study.

b. Participants will read the informed consent and participation statement (Appendix B and C) prior to the start of the study. Informed consent will be given through participation in the study.

7. Description of Recruitment of Subjects

a. The director of International Child Care, Inc. in the Dominican Republic will notify all Community Rehabilitation Workers and parents in the program about the training, its dates and times and what is involved in the program. A flyer will be provided to the director of International Child Care (Appendix H). The flyer will be posted and distributed two weeks prior to the training session.

b. Participants will receive no incentive in exchange for participation in this study.

8. Description of how confidentiality will be maintained

a. Each participant will be assigned a random number which will be placed on all test and questionnaire forms. No other identifying information will be on these forms. Participant's names and numbers will be kept on a master list to be kept with the researchers. After each test is completed the research assistants will collect the tests and

place them in a locked briefcase. The research assistants will then give all test materials to the researcher after return to the states. All identifying material will be kept in a locked briefcase and will be in possession of the research assistants throughout the study period in the Dominican Republic. The lock on the briefcase will be a TSA approved lock which can be opened by customs officials if needed. The director of International Child Care will be given envelops for all attendees of the program to be given to each individual two months after the program. These envelops will contain follow up surveys for the participants of the study to be filled out and returned in a sealed envelop to the director. All other envelops will have a "thank you for participating" letter. After a week, the director will mail the returned envelops the researcher. Only the researcher, research assistants and committee members will be allowed access to this data. Upon return to the United States all sensitive materials will be locked in a filing cabinet in the Occupational Therapy department. When this data is no longer needed the materials will be shredded.

9. Debriefing Statement

a. A debriefing statement is not required for this study.

10. Compensatory Follow-up

a. When final conclusions have been reached on the efficacy of this training program a report will be sent to International Child Care in the form of a newsletter for all participants to read.

Cuidado Infantil Dominicano

Salud e Integridad para niños y familias en comunidades empoderadas

RNC-4-30-01662-4
Calle 2 #34 Reparto Perelló, Santiago, R.D.
Tel.: (809)580-1855; Fax: (809) 971- 1826
Correo-e: cid@intlchildcare.org

Santiago, February 22nd, 2007

Head of OT Department
Ithaca Collage

Dear Madam, Sir,

This letter is to let you know how pleased our organization Fundación Cuidado Infantil Dominicano is with the fact the Katie Cooper is willing to come and help us with the training of our Community Based Rehabilitation workers.

We are having an in-service training for our CBR workers, but for specific subjects we like to invite professionals or student getting to the end of their studies come in and share specific themes with our CBR workers.

This time we are please to be able to start this relation with one of your students and maybe this may lead to a more permanent relationship between our institutions in the future.

Yours Sincerely,

Geertruida Bekker
Executive director
Fundación Cuidado Infantil Dominicano

Appendix D: HSR Approval

ITHACA

OFFICE OF THE PROVOST AND VICE PRESIDENT
FOR ACADEMIC AFFAIRS

March 8, 2007

Katherine Cooper, Graduate Student
Department of Occupational Therapy
School of Health Sciences and Human Performance

RE: Seating and Positioning Training for Community Rehabilitation Workers in the Dominican Republic

Thank you for responding to the stipulations made on February 2, 2007 by the All-College Review Board for Human Subjects Research (HSR). You are authorized to begin your project at any time. This approval will remain in effect for a period of one year from the date of authorization.

After you have finished the project, please complete the enclosed Notice-of-Completion Form and return it to my office for our files.

Best wishes on a successful study.

Sincerely,

David García, Associate Provost
All-College Review Board for Human Subjects Research

/mt

Enclosure

Cc: Melinda Cozzolino, Associate Professor
Carole Dennis, Associate Professor
Judith Pena-Shaf, Assistant Professor

Ref: HSR 0107-03

Ithaca College / Job Hall-350 / 953 Danby Road / Ithaca, New York 14850
607-274-3113 / Fax: 607-274-3064 / www.ithaca.edu

Appendix E: Recruitment Statement and Informed Consent

Hello!

My name is Katherine Cooper and I am an occupational therapy student at Ithaca College in New York, USA. I am asking you to participate in a research study that I am conducting in the Dominican Republic at International Child Care, Inc. This study is to test the usefulness of a training program that I will be presenting on seating and positioning a child with disabilities. I am developing this training program and conducting this study as a requirement for my master's degree in occupational therapy. This information sheet will explain the purpose of the study, participation requirements, research procedures, and confidentiality.

Purpose: This study is testing the effectiveness of a training program that will be presented at International Child Care, Inc. The training program will address ways to seat and position a child with disabilities using items found in households in the Dominican Republic. The training will give Community Rehabilitation Workers additional skills to use when working with the children in the Dominican Republic.

This training program will occur three times: Monday March 12th, Tuesday March 13th and Wednesday March 14, 2007 starting at 1pm.

Participation Requirements: If you are a Community Rehabilitation Worker for International Child Care or a parent of a child who uses services provided by CRWs and over the age of 18, you may participate in this study.

You are not required to attend this program. You can refuse to participate in this study, but still attend the training program. You may also refuse to answer any of the questions or withdraw from the study at any time.

Confidentiality: If you choose to participate in this study your information will be kept confidential. Your name will not be recorded on any of the tests you fill out. You will receive a random number for the study's purposes. In addition, all returned tests will be kept in a locked briefcase and will be destroyed after the study has been completed.

Contact Information: If you have any questions please contact me:

Katherine Cooper kcooper2@ithaca.edu

Dr. Melinda Cozzolino mcozzolino@ithaca.edu

You may also contact us through Trudy Bekker at International Child Care, Inc.

Informed Consent Form
Seating and Positioning a Child with a Disability

Hello!
Thank you for attending today's training program! Please read the information below and sign this form if you would like to participate in the study today.

Purpose: This study is testing the effectiveness of a training program that will be presented at International Child Care, Inc. The training program will address ways to seat and position a child with disabilities using items found in households in the Dominican Republic. The training will give Community Rehabilitation Workers additional skills to use when working with the children in the Dominican Republic.

Benefits of the Study: This study will benefit you and the children you work with by understanding more about how to seat a child with a disability. This will also help the me further develop this training program and be able to use it in the future in other countries.

What you will be asked to do: This program will take 3-4 hours for the training and taking the tests and surveys. You will be asked to answer a few questions before the training program begins, participate in the training program which will take approximately three hours including a session where you can ask questions and actively demonstrate the skills you learn in the training, and then answer some questions after the training is done. In May 2007 a survey will given to you for completion if you are still working with International Child Care.

Risks: You may feel pressure to participate in this study because it is being offered at International Child Care. You do not have to fill out any tests or surveys but you can still attend the program.

If you would like more information: Katherine Cooper kcooper2@ithaca.edu
You may also contact us through Trudy Bekker at International Child Care, Inc.

Withdraw from the study: You can refuse to participate in this study or refuse to answer any of the questions. You can still attend the training program if you choose not to participate in the study. You may withdraw at any time during the study.

Confidentiality: If you choose to participate in this study your information will be kept confidential. Your name will not be recorded on any of the tests you fill out. You will receive a random number for the study's purposes. In addition, all returned tests will be kept in a locked briefcase and will be destroyed after the study has been completed.

I have read the above and I understand its contents. I agree to participate in the study. I acknowledge that I am 18 years of age or older.

_____
Print Name

_____ _____
Signature Date

Appendix F: Program Overview
Seating and Positioning for a Child with a Disability
Presented by: Katie Cooper, OTS, Ithaca College

I. Introduction

a. Anatomy of sitting
- Overview pelvis, spine, shoulder girdle and neck.
- What position is "normal" – this is not always going to be possible, depending on the child.

b. Importance of sitting
- Feeding
- Inclusion in family activities
- Digestion
- View of the world
- Visual-perceptual skills
- Breathing
- Bone growth
- Development in general

c. Types of tone seen in children with disabilities
- Spastic/high tone – rigid positioning, with firm muscles, hard to move into different positions.
- Low tone – floppy, muscles feel mushy, not firm, has trouble supporting self in upright position.
- Seating a child with spasticity and a child with low tone are two very different concepts and we will discuss them separately.

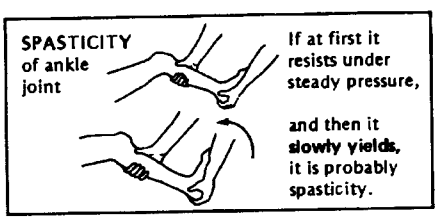
II. Contractures vs. Spasticity

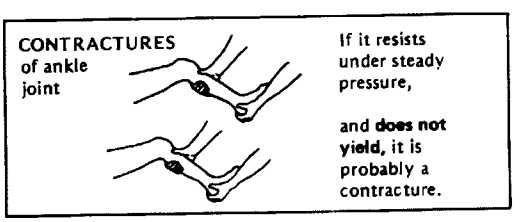
a. It can be hard to tell the different between a contracture and spasticity, yet the treatment for these two things are VERY different.

b. Spasticity resists under steady pressure but slowly releases. Contractures resists under steady pressure and DOES NOT release.

How to tell contractures from spasticity

Spasticity (muscle tightening that the child does not control) is common when there is damage to the brain or spinal cord. (See p. 89.) It is sometimes mistaken for contractures. It is important to know the difference.





c. Spasticity often leads to contractures. For details, see p. 102 and 103.

d. It is very important to prevent contractures through range of motion exercises and positioning because it is very hard to correct a contracture after it develops.

III. Seating a child with spasticity/high tone

a. Preparation for seating: Range of motion exercises. See appendix A.

b. Before trying to place a child into a seated position you must stretch out their muscles and joints and warm up their body for movement. This will prevent further injury or problems in the body.

c. Positioning a child with spasticity is important to prevent further contractures and deformities. Keep these principles in mind when positioning a child with a disability:

- Head is centered
- Spine is aligned, not twisted or bent
- Arms can be moved away from sides and hands can be used in front of the child's body
- The child is bearing weight on both sides of his or her body.

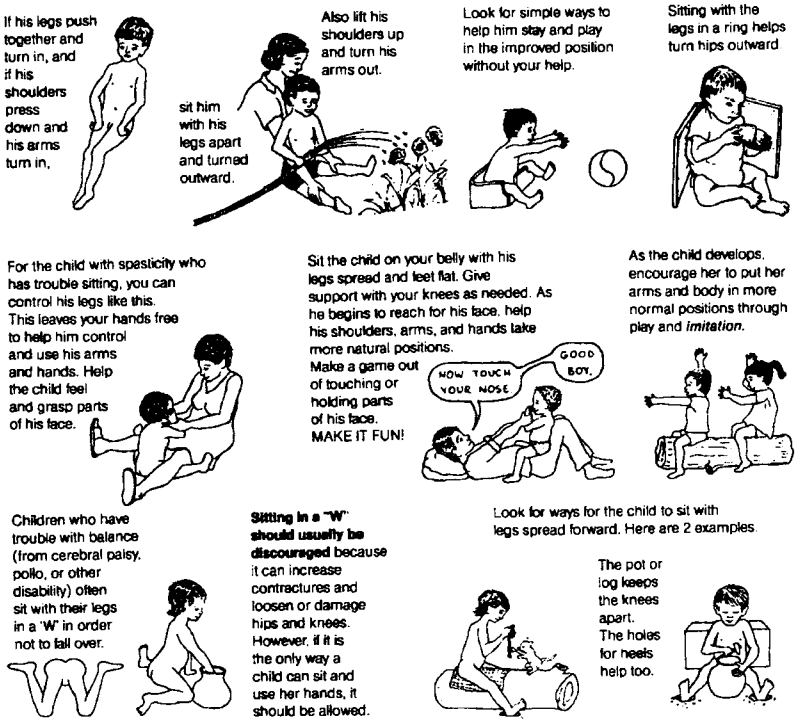
d. Supports to seating

- Use pillows, blankets, your own body, special seats to help support the child's position.

e. Suggestions

Sitting

The way that you help position a child for sitting also depends on the type of abnormal body positions he has. For example,

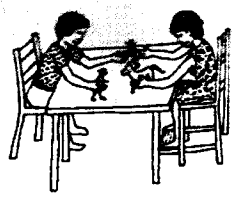


If the child's legs stay apart, his butt sticks out, and his shoulders are pulled back,

first sit him with his body bent forward and his legs together. Then bend his shoulders forward and turn them in.

A sack of grain provides a roll to hold this child's legs apart. Her father pushes down on her knees. This helps her to hold her feet flat and sit up straighter. (PROJIMO)

Look for ways that the child can sit and play in the improved position without help



Play with her at a table. Sit across from her to have her reach forward for toys with both hands.

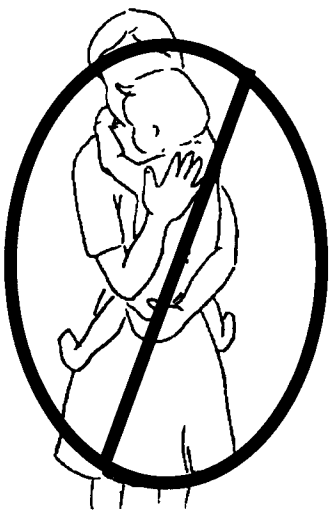
Be sure her feet are on a flat surface.

IV. Carrying a child with Spasticity

a. Carrying a child with spasticity incorrectly can lead to bad postures and positions that may hurt the child. Here are specific ways you can carry a child with spasticity that will be beneficial to them, including some ways that are not beneficial:

b.

c.



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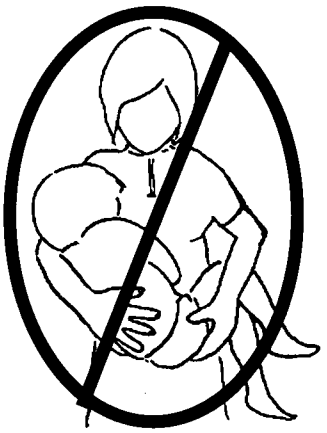
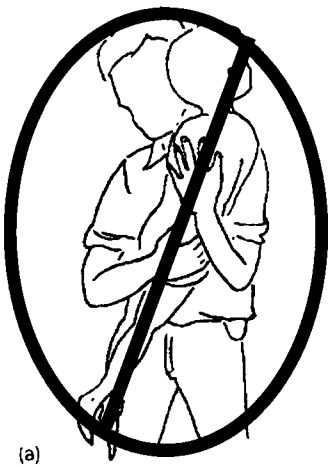
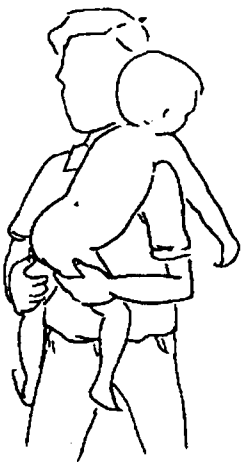


e.



(a)

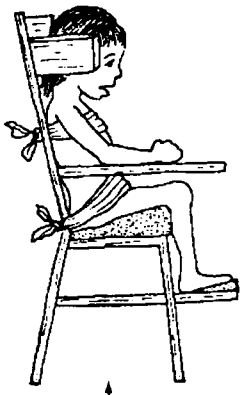


V. Low Tone
   a. Children with low tone have trouble keeping their posture and holding themselves in a position. They need extra support when seated to keep them in alignment and in a proper position for them to interact with the world.
   b. Depending on the child some may need help holding their heads up, keeping their back upright, and may use their hands to hold themselves up. If this is the case, the child will have a limited view of their surrounding and we need to help position them so they can have a larger range of view.

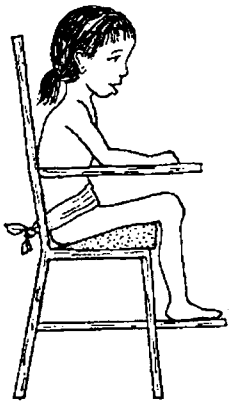
VI. Seating a child with low tone
   a. Here are some examples of supporting a child with low tone in sitting.

1. A child who is 'floppy' and slow to develop ability to sit,

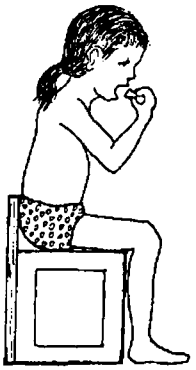
2. may at first need a seat with straps and supports to hold her up.



3. As she develops better head control and then body control, the supports can be removed little by little,



4. until finally— if possible— she is able to sit anywhere, with little or no special supports. Now low back support is all she needs.

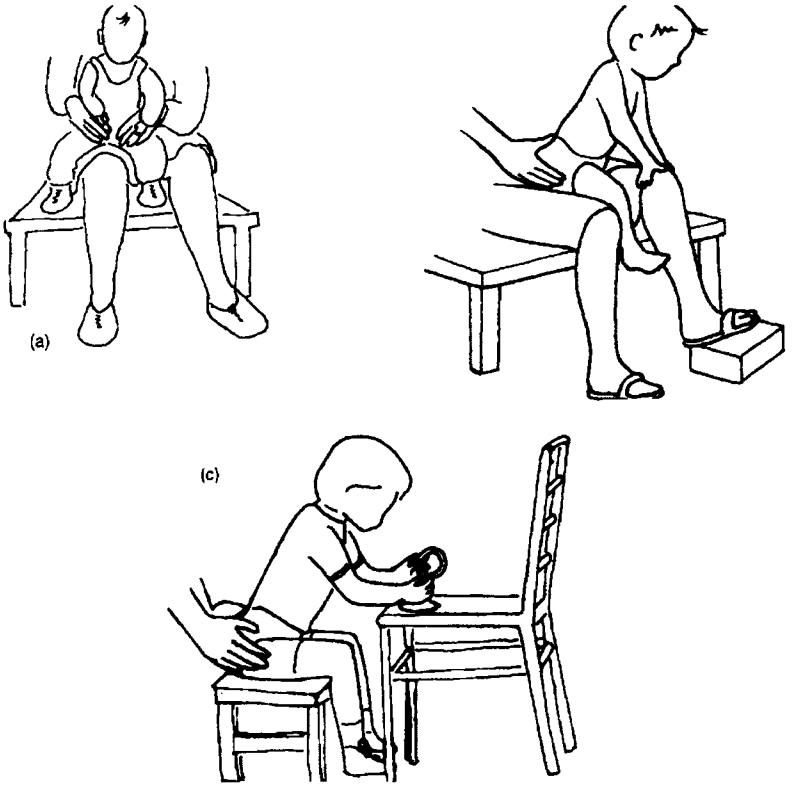


CAUTION: If a child needs to be supported as much as the one in the second picture, **do not keep her strapped in her seat for long.** She also needs periods of free movement and exercise to develop more independent head and body control. Keeping her strapped in for too long, or providing too much support after she has begun to gain more control, may actually slow down her progress. **Seating needs to be changed and supports reduced as the child develops.**

Also, children who do not feel in their ***butts*** need frequent position changes and 'fling' (see p. 198), and special cushions (see p. 200).

b.

c.



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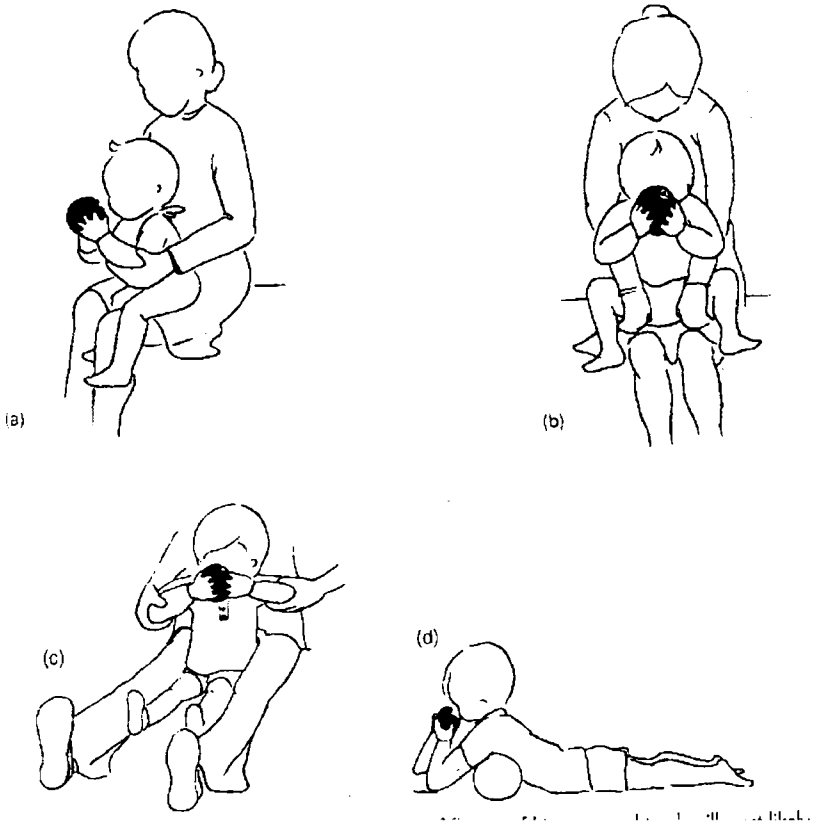
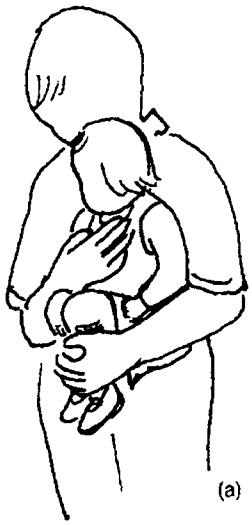
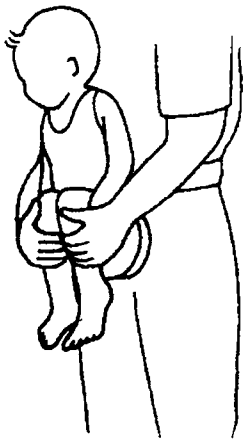


VII. Carrying a child with low tone

a. When carrying a child with low tone the objective is to support them so they are in a correct posture and that they can interact with the person carrying them and things around them. Here are some examples of ways to properly and improperly carry a child with low tone:

b.





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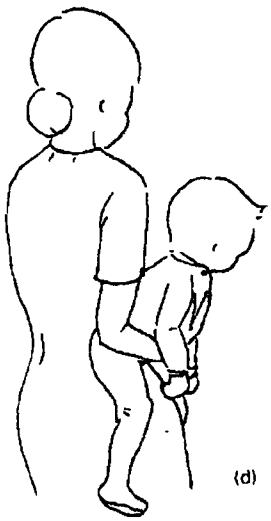
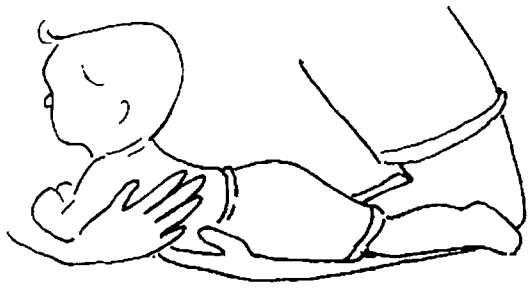
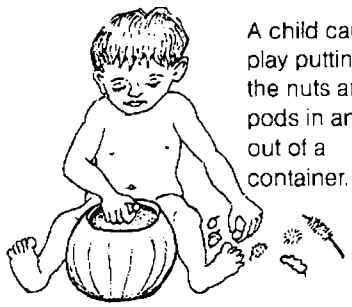




d.

VIII. Activities for children when seated

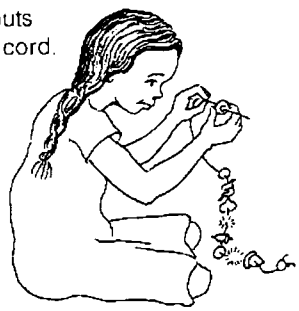
a. Play a game, for example:



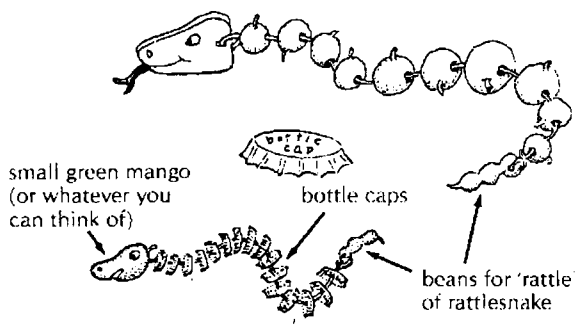
A child can play putting the nuts and pods in and out of a container.

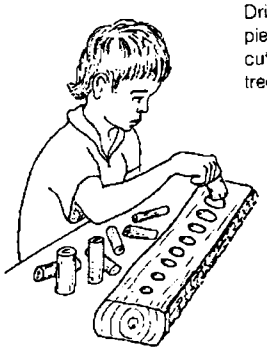
Later he can learn to sort them—first by seeing them, and then blindfolded.

As the child develops more hand control, she can begin to make chains and necklaces by stringing the nuts on a cord.



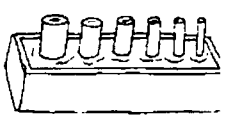
'Snakes' can be made by stringing nuts, 'caps' of acorns, bottle caps—or any combination of things.



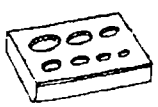


Drill holes in a piece of wood and cut pegs from tree branches.

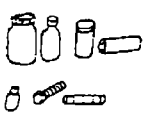
Or make a 'size box' by pouring cement, plaster of Paris, or clay into a mold. Or, make a 'plaster' box out of cow-dung or mud mixed with sand (and lime if you have it). Press pegs into the wet plaster, and remove when almost dry.



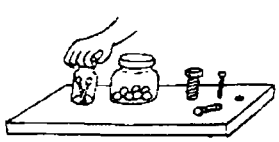
Or you can cut holes in a cardboard box. Glue an extra layer of tough cardboard on the top



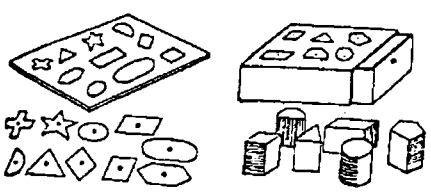
For pegs, use bottles, scraps of pipe, pieces of broom handles, bolts—or whatever.



Also, make games that help the child develop a twisting motion in her hands and wrists.

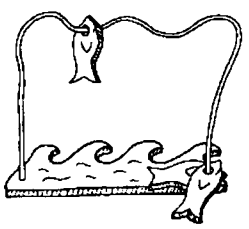


Other ideas

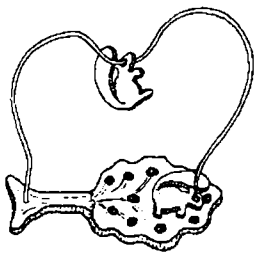


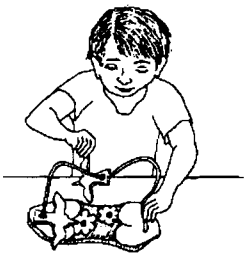
Slide-on wire toys

To help develop fine control of hand movement, blocks, beads or animal figures can be moved along a wire. Children with poor control need only move the figure from one side to the other. Children with good control try to move the figure without touching the wire. The more bends you put in the wire, the harder it is.



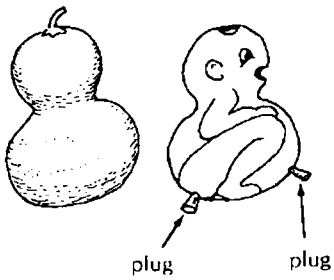
To make it more interesting, match the animal figures with wooden bases in the form and colors of the place the animal lives: fish in water, squirrels in trees, birds in flowers.





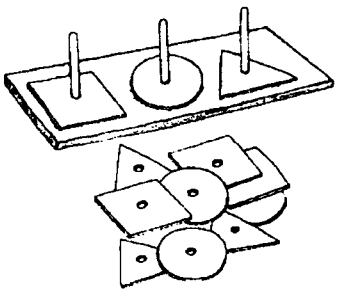
Gourd baby

The gourd baby is fun because it can be given drinks and then 'go to the latrine'. Thus it can be a good tool for 'toilet training' children. For other ideas and dolls for toilet training, see p. 341.

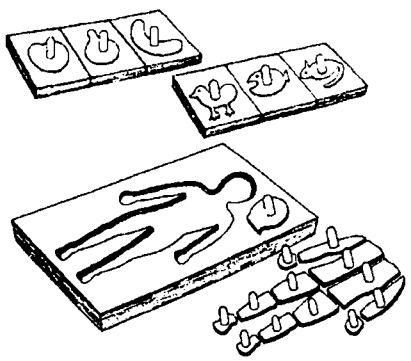


Shapes on pegs*

With these, children learn about matching colors, shapes, and sizes.

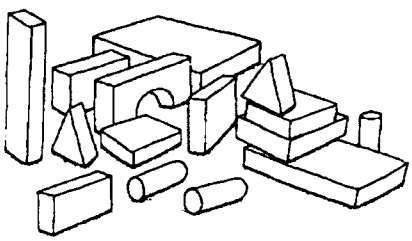


Figures with posts for easy gripping*

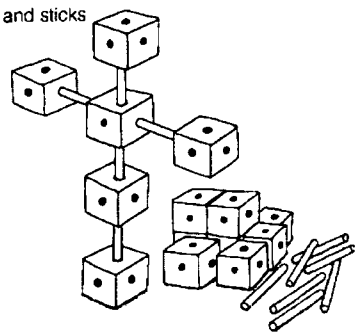


Building blocks*

of wood, clay, or layers of cardboard)



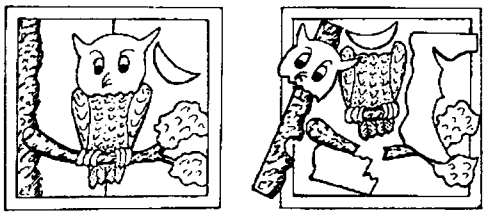
cubes and sticks



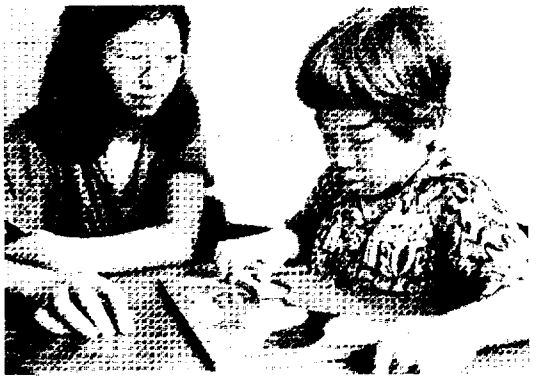
... See p. 642

Puzzles with cut-out pieces that follow the forms and lines of the drawing

First have the child build the main object (here, the owl) with a few pieces. Later, she can learn to fill in the background.



An outer frame helps hold the pieces together.



A retarded child in Indonesia learns to fit together a fish puzzle. (Photo: Christian Children's Fund, Carolyn Watson)

b. Let them help with household chores such as washing dishes or clothes, helping make dinner, etc.
c. Eating
d. Read a book with them or teach them different developmental skills they learn in school.

IX. Reminders
a. It is important to take the support away as soon as possible and to only provide the amount of support absolutely necessary.
b. Putting a child in one of these positions will most likely produce some discomfort or pain for the child. It is important to know the child before you do this and make sure you are not causing too much pain.
c. Do not leave a child unattended while they are positioned, they should be engaged in an activity.
d. The child should not be in one position for more than one hour, especially if they are unable to move themselves. If they child is uncomfortable, one hour may be too much time for them because of the discomfort.

X. Practice!

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