4-30-2024

Globalizing Occupational Therapy: Bridging Gaps In Community-Based Care Of The Dominican Republic Through Digital Education In Therapeutic Interventions

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GLOBALIZING OCCUPATIONAL THERAPY: BRIDGING GAPS IN COMMUNITY-BASED CARE OF THE DOMINICAN REPUBLIC THROUGH DIGITAL EDUCATION IN THERAPEUTIC INTERVENTIONS

By

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A Capstone Project Presented to the

FACULTY OF OCCUPATIONAL THERAPY

GEORGIA STATE UNIVERITY
Submitted in partial fulfillment of the
requirements for the degree of
Occupational Therapy Doctorate
April 2024

Approval Forms

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Degree Sought	**Doctorate of Occupational Therapy**
Department	**Department of Occupational Therapy, Byrdine F. Lewis College of Nursing and Health Professions**
Program	**Georgia State University Occupational Therapy Doctorate**

We, the undersigned, recommend that the Capstone Final Paper completed by the student listed above, in partial fulfillment of the degree requirements, be accepted by the Georgia State University.

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Acknowledgements

I would like to thank Comunidad Connect (CC) and my site mentor for providing me with the opportunity to work with their organization to complete my capstone project. I learned more about working and collaborating with community partners through working with CC and the importance of remaining culturally competent throughout the project. I feel honored that I got to work with and learn from CC's work and collaboration.

I would also like to thank the other key stakeholders I had the pleasure of speaking with. Your insight and knowledge were invaluable and assisted greatly in the creation of this project. I would like to give a huge thank you to my faculty mentor from Georgia State University's Occupational Therapy Department and for all the encouragement, insight, and patience you continually showed me.

I would also like to thank my family and dear friends who have supported me throughout my journey of pursuing my doctoral degree. Your never-ending encouragement helped me throughout the past three years of my doctoral program.

And lastly, but certainly not least, I would like to thank God for blessing me with the opportunity to pursue my dreams of becoming an Occupational Therapist and for continually being with me throughout this journey and placing the right people and experiences in my life to stretch and grow me into the Occupational Therapist student that I am today.

Abstract

Title: Globalizing Occupational Therapy: Bridging Gaps in Community-Based Care of the Dominican Republic Through Digital Education in Therapeutic Interventions

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Background: Stroke is the second leading cause of death and third leading cause of disability worldwide. Disability from stroke is especially found in low-resource settings where access to rehabilitation therapy services is limited. This paper presents the development of the Stroke Stride Rehab Program which is an evidence-based program aimed to improve stroke rehabilitation outcomes in rural and remote communities, specifically in Puerto Plata, Dominican Republic.

Methods: The development of Stroke Stride Rehab included a detailed and comprehensive needs assessment including a literature review and stakeholder consultations to identify key gaps and challenges in stroke rehabilitation. Using evidence-based practices, technology access, and input from key stakeholders, the program was created to educate OTs, PTs, and other allied health care professionals on OT rehabilitation techniques for stroke survivors and provide resources to share with stroke survivors.

Results: The Stroke Stride Rehab program integrates video-based interventions and activities, QR technology, and capacity-building by providing resources to local Occupational Therapists, Physical Therapists, and other allied health professionals. The program aims to empower healthcare professionals and improve adherence to therapy exercises and activities

among stroke survivors by emphasizing repetition, regularity, and cultural competence of resources provided through utilizing video-based resources.

Discussion: The Stroke Stride Rehab program aims to improve stroke rehabilitation outcomes in rural communities using technology and community partnerships. Key challenges including ongoing training for healthcare professionals and equitable access to technology must be continually addressed for the program to remain sustainable. Future research should focus on evaluating the program's effectiveness and research additional technology innovations that may be utilized to increase access to stroke rehabilitation therapy services.

Conclusion: Stroke Stride Rehab exemplifies a collaborative effort to address complex challenges endured by stroke survivors in rural communities. Through integrating evidence-based practices, stakeholder input, and technology resources, the program has the potential to create a meaningful impact on the quality of life for stroke survivors and serve as a model for innovative stroke rehabilitation practices in settings with limited resource access worldwide.

Keywords: *stroke, neurological injury, Dominican Republic, occupational therapy, technology, rehabilitation, therapeutic exercises, healthcare, and physical therapy.*

Table of Contents

Summary Pages

GLOBALIZING OCCUPATIONAL THERAPY: BRIDGING GAPS IN COMMUNITY-BASED CARE OF THE DOMINICAN REPUBLIC THROUGH DIGITAL EDUCATION IN THERAPEUTIC INTERVENTIONS

Introduction

The question the researcher sought to answer with this study was "How can technological innovations be leveraged to enhance access to occupational therapy services for stroke survivors with disabilities in Latin America, ultimately improving their functional abilities?" The researcher aimed to create and provide an educational program that would empower Occupational Therapists, Physical Therapists, and other allied health professionals working with stroke survivors and provide them with a program that they can teach community leaders to enhance stroke rehabilitation.

Brief Literature Review

Occupational Therapy (OT) enhances health and well-being by facilitating exercises and activities that are meaningful for individuals (Croussett, 2016). Despite the importance of OT in rehabilitation therapy, access to OT services is limited in many parts of the world, including the Dominican Republic (DR) (Croussett, 2016). This literature review investigates the possibility of digital education in therapeutic exercises and activities to improve community-based OT care for stroke survivors in rural communities in the DR.

The DR is a Caribbean nation with a population of 11.1 million people who primarily speak Spanish (López-Sierra, 2019). Although economic growth has diversified in recent years, poverty and income inequality remain an issue, particularly in accessing healthcare (Paz, 2023). The healthcare system in the DR includes both public and private providers, however, rural communities face many barriers to accessing healthcare (Badger, 2021). These barriers include transportation issues, cultural beliefs, and cost all contribute to limited access to healthcare services, including rehabilitation therapy for individuals with disabilities from stroke (González, et., al, 2024).

Stroke is a worldwide health concern, ranking the second leading cause of death and third leading cause of disability (Murrell et. al., 2021). The DR has an increasing amount of stroke survivors, many with disabilities whose quality of life could be enhanced with rehabilitation services (World Health Organization, 2024). Stroke survivors may experience many physical impairments including physical, cognitive, and emotional challenges, which necessitate rehabilitation services (Wijeratne, et., al, 2021). There are gaps in stroke prevention, treatment, and rehabilitation in many areas, particularly low- and middle-income countries including the DR (Wijeratne, et., al, 2021).

Occupational Therapy services have shown effectiveness in stroke rehabilitation, as OT focuses on improving overall mobility, self-care, social participation (Murrell, et. al., 2021). Community-based organizations are very important in rural communities with limited access to healthcare as they help to bridge the gap providing access to healthcare services to community members (Wolf, et. al., 2015). Comunidad Connect (CC) is a non-

profit organization that helps in delivering healthcare services to community members in Puerto Plata, DR (Comunidad Connect, 2024).

The increased use of digital technology provides opportunities to bridge gaps in healthcare access, including stroke rehabilitation therapy services (Kemp, 2023). The DR has experienced an increase in internet and smartphone access which has caused mobile health (mHealth) platforms to appear to help deliver educational healthcare resources to community members (Casilang, et. al., 2020). Video-based exercise programs, shared on digital platforms such as WhatsApp, are reported to help improve adherence and self-efficacy in stroke rehabilitation (Chung, et. al., 2020). Digital platforms like WhatsApp provide accessibility to therapeutic services there is a concern for health data and security, meaning there is a need for appropriate guidelines and protocols in medical communication (Kara and Ntsiea, 2015).

In conclusion, utilizing digital technology and platforms to share rehabilitation therapy resources may be an effective means to enhance community-based OT care for stroke survivors in Puerto Plata, DR. Collaboration between local healthcare providers, community-based organizations, and technology may bridge the gap in stroke rehabilitation services and enhance quality of life for individuals affected by stroke in rural communities with limited resources.

Capstone Purpose Statement

The purpose of this capstone project was to provide education and resources on stroke rehabilitation within the scope of Occupational Therapy to empower health providers within the Puerto Plata, Dominican Republic community.

Methods/Results

The Stroke Stride Rehab program was created to be an evidence-based program for stroke rehabilitation in Puerto Plata, Dominican Republic. Program development began with a detailed needs assessment, literature review and conversations with key stakeholders. Through the information gathered, the target population was identified as stroke survivors and barriers and challenges faced by stroke survivors were identified. The need for stroke rehabilitation services was highlighted as well as the ability to utilize technology to bridge the gap between stroke survivors and rehabilitation therapy services. Collaborating with local community partnerships and utilizing technology access were key aspects of the program development. The program consisted of a presentation on stroke rehabilitation, handouts on stroke care and adaptive techniques, and a series of instructional videos on stroke rehabilitation including dressing and exercises. The videos are accessed through a QR code. Through a holistic lens of literature review, stakeholder input, and personal experience, the program was created to address specific needs of the community and promote a sustainable program to enhance stroke rehabilitation.

Output

Stroke Stride Rehab Program was created to equip healthcare professionals in Puerto Plata, Dominican Republic, with the knowledge and resources needed to support stroke survivors in rural and remote communities. Targeting OTs, PTs, and other allied health professionals, the program offers a 2-hour training session covering stroke education and rehabilitation techniques including dressing skills, exercises, home modifications, and

adaptive equipment. Emphasizing video-based resources for ongoing support for stroke survivors, the program aims to bridge the gaps in access to appropriate care due to financial and transportation barriers. The program will be implemented through collaboration with local partners in the Dominican Republic and led by an OT student from the Georgia State University OT department. The Stroke Stride Rehab program ensures effective training and empowers healthcare professionals to make meaningful strides towards improving the quality of life for stroke survivors in the community.

Outcome

Ultimately, this occupational therapy program endeavors to establish a sustainable program to empower health professionals working in the Puerto Plata community, by increasing their knowledge and confidence in supporting stroke survivors. Future research can be conducted in determining the significance of the education and implementation. The development of this program may have implications for similar programs in other cultural contexts, promoting inclusivity and effectiveness in healthcare educational programs worldwide.

Chapter 1 - Literature Review

Introduction

Occupational Therapy (OT), or Terapia Ocupacional in Spanish, holds a vital role in promoting health and well-being for individuals by enabling them to engage in meaningful activities. However, access to effective and quality OT services remains limited to communities in many parts of the world, including the Dominican Republic. Addressing this gap in healthcare services requires innovative approaches that leverage technology and also promote global collaboration. This literature review explores the potential of digital education in therapeutic interventions to enhance community-based OT care for individuals with a stroke in the Dominican Republic.

In the following section, the country, healthcare system and culture of the Dominican Republic (DR) are discussed. These aspects were considered by the researcher in the planning and production of the program. To supplement the lack of published research done on the DR and healthcare, specifically in relating to Occupational Therapy, the researcher based the program on the available literature, previous personal experience in the DR, and through personal communication with individuals connected with Comunidad Connect (CC) and other related professionals.

Dominican Republic: Culture and Healthcare System

Dominican Republic Country

The DR is a Caribbean country on the east side of the island Hispaniola and shares a border with Haiti (López-Sierra, 2019). The population of the DR as of 2021 is 11.1 million people, and the capital of the DR is Santo Domingo (Oficina Nacional de Estadística, 2024). Historically, the country gained most of its financial income through agricultural means,

however, over the last three decades the DR has diversified and receives most of its financial income from tourism, construction, manufacturing, agriculture, and mining (Paz, 2023). Despite the increase in economic growth through diversified financial means and the jobs that this opens up, the DR's high unemployment rate and income inequality remain a long-term issue with an estimated 23% continuing to live beneath the poverty line (González, et., al, 2024). Spanish is the primary language spoken in the DR, with schools primarily based on a Spanish Education model with English and French being mandatory foreign languages (Terpstra, 2024). According to a 2021 survey, the disability rate in the DR for individuals over the age of three years old is 13% which is a similar statistic to the disability rate in the United States of America (Berlinski, et. al., 2021).

Global Health Disparities in Dominican Republic

The DR's healthcare system consists of both private and public healthcare providers (López-Sierra, 2019). In recent years, the quality of healthcare services has increased in the DR with the adoption of the Primary Healthcare model of care and Integrated Health Service Delivery Network (Badger, 2021). However, even with this healthcare expansion, not all individuals in the population have equal access to healthcare services (González, et., al, 2024). While the larger cities in the DR do possess large hospitals providing care for its residents, the health disparity in the DR is prominent, as the rural areas have very little access to healthcare services (Badger, 2021). As of 2023, 16.2% of DR's population reside in rural areas in the country compared to 83.8% of urban inhabitants (González, et., al, 2024). An estimated 23% of the Dominican population currently remain below the poverty line, despite economic enhancements and improvements making it difficult to obtain healthcare services (González, et., al, 2024). Although healthcare services in the DR are advertised as being free, this only applies

to admission into the public hospitals and does not include all the necessary services that are often required for patient care, including rehabilitation care (Pan American Health Organization, 2023). Even with governmental financial assistance in part of healthcare services, many families still face additional barriers to accessing appropriate healthcare including the difficulty of transportation (Sim and Mackenzie, 2016). Accessing means to travel and the journey to hospitals and rehabilitation centers can be very difficult for families in remote villages causing them to not be able to access appropriate healthcare (Sim and Mackenzie, 2016). Another barrier that could hinder individuals with disabilities from obtaining healthcare services is the cultural views and beliefs on disability (López-Sierra, 2019). Many Dominicans believe that any form of illness or disability can be caused by a variety of reasons including bad luck, moral violation, or evil spirits which influences them to not seek appropriate medical services (López-Sierra, 2019). With 13% of the DR population living with a disability, the barriers of cost, transportation, and cultural and religious views may hinder many individuals from experiencing a positive impact in quality of life from not accessing beneficial healthcare services (Berlinski, et. al., 2021). x

Stroke

Stroke, also known as cerebrovascular accident (CVA), is an "acute disturbance of focal or global cerebral function" that can be caused by two different mechanisms: an ischemic stroke is caused by a blocked artery and a hemorrhagic stroke is caused by sudden bleeding in the brain (Murrell et. al., 2021). Stroke is the second leading cause of death and the third leading cause of disability globally, following coronary heart disease (Pacheco-Barrios, 2022). About 40% of stroke-related deaths occur during a person's most productive and active years of their life (Martins, 2021). Stroke is one of the leading causes of long-term disability across the globe and causes stroke survivors to have physical challenges resulting in impairments with mobility, lack

of ability to complete self-care tasks independently, and cognitive deficits (Murrell, et. al., 2021). Despite the huge efforts to improve stroke care in recent years, there are still numerous gaps to be addressed including limited access to stroke prevention and rehabilitation, ineptitude of hospital stroke care, few available and trained healthcare professionals to assist with stroke care, few professional training and stroke awareness campaigns, and scarce funding for stroke programs and research (Martins, 2021). For example, research on stroke burden characteristics in low- and middle-income countries is very scarce, with the research shared here found in two separate studies, one recently published in 2022 and one published in 2011 (Pacheco-Barrios, 2022). From 1970 to 2010, stroke incidence has decreased by over 40% in high-income countries (HIC) while stroke incidence has simultaneously doubled in low- and middle-income countries, including the Dominican Republic (Ferri, et. al, 2011). According to the World Health Organization (WHO), 71 women out of 100,000 died from stroke, and 76 males out of 100,000 died from stroke annually in the Dominican Republic (World Health Organization, 2024). The DR has a high stroke prevalence rate of 8.4% which was greater than any other Latin American country's prevalence rates (Ferri, et. al, 2011). In 2017, stroke was the cause of death for an estimated number of 26 million individuals in Latin America and Caribbean region, while 5.5 million stroke-survivors required post-stroke care due to acquired disabilities (Pacheco-Barrios, 2022).

As reported by Pacheco-Barrios (2022), the Latin American and Caribbean region has the fourth highest burden of stroke worldwide, and the study also found that the DR was one of the countries with the highest number of years of life lost and years lived with a disability from stroke. According to this study, "The burden of disease can be understood as the loss of opportunity to live a healthy life without disabilities or a premature death" (Pacheco-Barrios,

2022). There have been correlations observed between stroke and increased need for care with certain comorbidities (Ferri, et. al, 2011). These comorbidities include dementia and depression which lead to an increased need for care for individuals who have suffered a stroke (Ferri, et. al, 2011). Disability is also found to increase with age and number of physical impairments, with depression and dementia exacerbating decline for individuals who have suffered a stroke (Wijeratne, et., al, 2021).

Occupational Therapy and Stroke

The benefits of OT services for stroke rehabilitation have been well researched (Murrell, et. al., 2021). Evidence-based OT interventions have been shown to help increase improvements in upper extremity movement, mobility safety, social participation, and cognitive performance of stroke survivors (Wolf, et. al., 2015). Occupational Therapists (OTs) utilize many different strategies including activity modification, environment modification, compensatory strategies, and remediation or development of skills (Wolf, et. al., 2015). Alsubiheen, et. al (2022) affirmed that using activities of daily living (ADLs) as task-based OT interventions is reliable in improving upper limb movement in chronic stroke patients. This study also found that patients performing the ADLs by themselves each week had an equal amount of improvement as compared to the patients who were seen by conventional OT services throughout each week (Alsubiheen, et. al, 2022). Ensuring that the patients were confident in their ability to perform the tasks and requiring them to perform tasks repeatedly were both found necessary to achieve the same results as conventional OT (Alsubiheen, et. al, 2022). Educating patients on how to do tasks correctly and safely and allowing them to practice on their own is a very important part of OT as this encourages the patient to take ownership of their recovery (Chung, et. al., 2020). Behavioral change in an individual is induced upon changing the human or environmental

system, meaning that breaking a functional task into steps allows patients to focus on each part of the task and problem-solve through the task resulting in a behavior change (Alsubiheen, et. al, 2022). Tasks related to the activities that we perform in daily life are very useful and are client-centered as well (Almhdawi, et. al., 2016). OTs can use a myriad of interventions as they can be focused on either occupations or activities (American Occupational Therapy Association, 2020). Examples of occupation-based interventions are in context of the client's and include dressing, toileting, meal preparation, and cleaning (American Occupational Therapy Association, 2020).

Education on stroke rehabilitation practices for OTs, PTs, and other healthcare providers is helpful for educating and providing resources for stroke survivors (Prados, et. al., 2023). Continued education sessions are important to address any knowledge gaps present among therapists and healthcare professionals to help them serve their clients better (Kim, et. al., 2022). Healthcare professionals need to continue updating and expanding their knowledge base to provide the best care for their clients (Ganesh, 2022). Providing an education and training session for OTs, PTs, and other allied healthcare professionals to have the same training can improve providing patients with holistic care through a transdisciplinary approach by healthcare providers sharing roles (Ellis et. al., 2019). Utilizing overlapping rehabilitation roles can help provide clients with improved care through a more holistic lens (Ellis et. al., 2019). Providing education and resources on dressing techniques and exercises are part of rehabilitation for stroke that can be used to improve mobility and ability to complete activities of daily living with increased independence, mobility, and confidence (Fujita, et. al., 2015).

Global Stroke-Care Initiatives

Due to the high prevalence rate of stroke in Latin America, the Pan American Health Organization has begun implementing the HEARTS initiative, which is a World Health

Organization's (WHO) program to decrease risk of stroke, in several countries including the DR (Martins, et. al., 2021). The HEARTS program focuses on decreasing cardiovascular events through the control of diabetes, hypertension, and lifestyle modifications (Martins, et. al., 2021). This initiative seeks to fortify existing health delivery services in the primary care sector, by promoting the use of global best practices in prevention and treatment of cardiovascular diseases (Pan American Health Organization, 2023). While HEARTS is a useful healthcare initiative, this program lacks the ability to break through the barriers faced by individuals requiring stroke preventative and rehabilitation services in rural communities as this initiative does not address those who cannot access primary care facilities (Sim and Mackenzie, 2016).

The WHO has a goal to reduce stroke-related deaths by one-third by the year 2030 (Martins, et. al., 2021). To help achieve the WHO's goal, the Global Stroke Alliance was launched in 2020, with collaboration and cooperation from health professionals and researchers from every continent to provide countries with evidence-based stroke prevention and rehabilitation care (Martins, et. al., 2021). The measure of how this initiative impacted Latin America was based on the number of stroke clinics created in the countries, which again, leaves a large gap in reaching individuals affected by stroke in rural communities (Martins, et. al., 2021). These global initiatives are a step in the right direction to combat stroke-related events and disability, however, focusing on developing local community partners remains imperative to promote a sustainable way to provide resources to underserved populations in rural communities (Rowthorn, 2015). Global and local health initiatives must work alongside each other towards a common goal to best serve urban and rural parts of the community (Turcotte-Tremblay, et. al., 2020).

Local Community-Based Programs

Individuals living in rural areas and of the lower socio-economic status group, rely heavily on community-based programs for healthcare resources including resources for individuals with disabilities as government resources are unreliable and costly (West-Pollak, et. al., 2014). As Berlinski, et. al., reported "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." According to West-Pollak, et. al., "Long-term solutions to these global medical conditions will depend on the development of programs that achieve locally supported, sustainable lifestyle modification," further emphasizing the need for community-based programs to foster sustainable health programs.

Project World Impact lists 15 different non-profit organizations with a range of focuses including Christian ministries, academic education empowerment, eco-system development, clean water initiatives, hunger relief, and health promotion (Project World Impact, 2024). Global Giving lists 23 projects occurring in the Dominican Republic with similar focused initiatives (Global Giving, 2024). While there are many non-governmental organizations and non-profit organizations structured to help the communities in the Dominican Republic, two programs will be focused on here as the author had direct contact with both organizations and the following one served as the key collaborator for this project.

Comunidad Connect (CC) is a non-profit organization that connects local and global stakeholders to harness the full spectrum of health and wellness resources to support the communities it works with (Comunidad Connect, 2024). Constanza Medical Mission (CMM) is a non-governmental organization that provides year-round medical services to communities in the Dominican Republic by connecting volunteer groups with community leaders in the Dominican

Republic (Constanza Medical Mission, 2024). Both organizations understand the need for local connection and support to foster sustainability of the projects and initiatives they undertake, while also recognizing the current need of financial and volunteer support from global resources (Comunidad Connect, 2024; Constanza Medical Mission, 2024). Both organizations have observed an increased need for stroke-care among the communities that they work with and have recently begun partnering with rehabilitation specialists (Occupational Therapists and Physical Therapists) which have helped to further the identification of rehabilitation needs that are not being met in these rural communities. Both CC and CMM utilize a secure client database developed in 2018 by a Peace Corps initiative through Puente, which is another non-profit organization (Puente, 2024). Through this database, called Puente Collect, the organizations can identify and follow-up on individuals with disabilities in the community who are in need of resources (Puente, 2024).

Technology and Occupational Therapy

Dominican Republic Access to Technology

The Dominican Republic has experienced a dramatic increase in digital access, with 3.7% of the population possessing the ability to access the internet in 2000, and by the year 2021, 85.2% has internet access (Pan American Health Organization, 2023). As of 2022, the DR had a total of 9.75 million cellular mobile connections that were active, which is 90% of the total population (The World Bank, 2024). In addition, a 2019 survey found that smartphone use increased rapidly from 51% in 2017 to 61% in 2019 (Kemp, 2023). This apparent rapid technology expansion creates an opportunity to develop health resources that can be easily shared with individuals through the digital platform to provide them with “trusted and reliable information that is easily accessible through various formats” (Casilang, et. al., 2020).

One research study by Casilang et. al., done in 2020 focused on perceptions and attitudes of caregivers and health promoters in the DR toward mobile health for the purpose of creating a breastfeeding tool. In the study, the authors mentioned how to their knowledge they were the first study of their kind to focus on the Dominican Republic, which to the knowledge of this author remains true, which is why this one study is focused on in this project. In addition, while the breastfeeding topic is not what this current research is focused on, the study provided valuable insight into perceptions and attitudes towards mobile health which was helpful for this specific project. The study found that ideally digital resources should implement the following three key elements:

1. "Minimize barriers to use, such as low cost and access without active internet service
2. promote frequency of use by adding perceived value to caregivers, such as providing both educational and self-management content
3. address the cultural needs and acceptability of users based on behavioral theory models" (Casilang, et. al., 2020).

One of the barriers identified by caregivers was the cost associated with mHealth tools (Casilang, et. al., 2020). One caregiver in the Casilang, et. al. study talked about how accessing mHealth tools are not always easy as obtaining a mobile phone means that you must make monthly payments that are not cheap and some months you do not have the money to make those payments. This cost barrier causes service to be cut off and internet and the mHealth tool is inaccessible (Casilang, et. al., 2020). Thus, accessing healthcare information without the internet is one key element of creating digital health resources, to eliminate any potential financial

burdens (Casilang, et. al., 2020). Another reason to create digital health products that can be accessed regardless of internet access is so that resources can be accessed by individuals any time after receiving them (Casilang, et. al., 2020).

Caregivers and health promoters in the study all expressed the importance of the health information being validated by trained professionals including doctors, nurses, and other allied health professionals (Casilang, et. al., 2020). Health promoters explicitly shared how "[digital resources] would be especially useful to them during their home visits and provide them with an educational resource to share with their clients and families" (Casilang, et. al., 2020). The participants shared how access to the digital health resources would be beneficial for them beyond the health visits with the professional healthcare provider as it would allow them resources to refer to at home (Casilang, et. al., 2020).

The recent rise in accessibility of smart technology provides an opportunity to develop video-guided exercises to share with clients (Pan American Health Organization, 2023). One study based in Hong Kong found that for patients with stroke post-hospital discharge "mobile video-guided home exercise program was superior to standard paper-based home exercise programs in terms of exercise adherence, SEE (Self-Efficacy Scale) and mobility gain but not basic ADL gain" (Chung, et. al., 2020). Investigation of the mode of delivery of rehabilitation therapy resources for patients with stroke is worthwhile to enhance physical mobility (Emmerson, et. al., 2017). One of the major outcomes to evaluate the home exercise program's mode of delivery effectiveness is adherence (Kara and Ntsiea, 2015). Adherence of home exercise programs is important to address and consider as they are positively correlated with physical function and physical performance for clients (Chung, et. al., 2020). One of the barriers

to adherence to home exercise programs was found to be low self-efficacy (Chung, et. al., 2020). According to Psychologist Bandura's Self-Efficacy Theory of Motivation, self-efficacy is defined as a person's confidence in their ability to perform a task (Bandura and Adams, 1977). Through this lens, self-efficacy is an important factor in maintaining long-term exercise behavior and adherence after occurrence of a stroke (Chung, et. al., 2020). Studies showed that home exercise programs with visual information helped improve individuals' confidence in completing the exercises compared to solely verbal or written information alone (Hill, et. al., 2016). A benefit of utilizing video-based exercise programs is that they can be downloaded and referenced at any time regardless of internet connection, which will aid in adherence to complete repetitions of the tasks (Casilang, et. al., 2020).

Digital Platform for Sharing Video-Based Exercise Programs

The use of WhatsApp is becoming increasingly more common worldwide for mobile communication (Xu, et. al., 2020). WhatsApp has been used by clinicians for sharing health information in clinical practice and increased in use due to the COVID-19 pandemic (Morris, et. al., 2021). The ease of using WhatsApp to share information and electronic documents makes the platform so appealing for clinicians to use in the healthcare world (Xu, et. al., 2020). What has not been developed are practice guidelines for record keeping and storing information along with the use of WhatsApp, and from several studies, this is a common issue among clinicians who use WhatsApp for healthcare purposes (Morris, et. al., 2021). Due to WhatsApp not being developed for medical use, patient information is often easily accessed on mobile phones without the hedge of appropriate digital security in place (Morris, et. al., 2021). WhatsApp is regularly updated and has mitigated many data security concerns related to message encryption, data transmission, and

data storage (Morris, et. al., 2021). One concern is that information containing users' contact name, addresses, and phone numbers are being collected by Facebook which owns WhatsApp (Dhawan, 2021). According to Morris, et. al, all WhatsApp users have either knowingly or unknowingly consented to their information being collected and "the people whose information is being shared do not know with whom their information will be shared and how it will be used" (2021). For medical use, this data sharing is not acceptable as this contradicts most data protection laws and regulation (Morris, et. al., 2021). The current consensus is that if you are sharing unidentifiable, general health information that does not contain critical patient information, WhatsApp can be used (Morris, et. al., 2021).

Another app used to share health information and reosurces is YouTube (Osman, et. al., 2022). YouTube is an easily accessible online platform that stores videos that can be accessed on technology devices including smartphones (Osman, et. al., 2022). YouTube has emerged as an educational resource that covers many topics including pertaining to stroke (Askin, et. al., 2020). Practical knowledge can be shared on YouTube for teaching purposes (Askin, et. al., 2020). YouTube's terms of service stipulate that validity of the videos is not tracked and that content of informational videos is the responsibility of the person or entity who posted the videos (YouTube, 2024). YouTube may be used by creators to easily upload content to share with individuals as videos are easily accessed (Osman, et. al., 2022).

Chapter 2 - Needs Assessment

Introduction

The purpose of the needs assessment for this project was to provide relative information to identify gaps and challenges, understand stakeholder needs, inform decision making, prioritize goals and objectives, enhance effectiveness and efficiency, and lastly help to serve as a baseline for evaluating impact. The needs assessment includes information from identified stakeholders, the literature review, and a personal site visit to the Dominican Republic from the author.

The methodology for completing the literature review was a narrative review. The research studies and articles were searched for by the author and found through published research found through the electronic library of PubMed through the National Center for Biotechnology Information. The keywords to search and find articles included: *stroke, neurological injury, Dominican Republic, occupational therapy, technology, rehabilitation, therapeutic exercises, healthcare, and physical therapy.* To remain up to date with current information, articles from only the previous 10 years were included in the study except for Bandura's 1977 paper on Self-Efficacy. The author deemed this article as appropriate as the article explained the psychological theory that is still current in today's world (Bandura and Adams, 1977). Each article was thoroughly read, and only included in this paper if the article held pertinent information related to this project. The author took notes on the articles and used

the notes to write the literature review. Analyzing the data from the literature review helped to identify gaps and areas of improvement under the topic being studied. In addition, the gaps found were compared to the interviews with key informants during the needs assessment to assess whether there were parallels. To the author's knowledge, the literature review along with the needs assessment helped to identify gaps in the literature as accurately as the author could.

This capstone project ultimately aimed to produce digital resources to be used by occupational therapists (OTs), physical therapists (PTs), and other allied health professionals serving in the Dominican Republic. The digital resources include both video-recordings of occupational therapy interventions focusing on establishing and restoring client's physical abilities, as well as educational resources on additional occupational therapy interventions focusing on modifying the client's environment. According to the Occupational Therapy Practice Framework (OTPF), occupational therapy intervention approaches include establishing and restoring, and modifying (AJOT, 2020). The resources created for this program would align with the occupational therapy approaches outlined in the OTPF. The digital videos would serve the purpose of providing the client with a video guide for physical interventions including upper body and lower body dressing after the initial visit of the therapist for continual therapeutic resource use by the community member. Repetition is a key part of physical recovery from a neurological injury such as stroke, and providing video-recordings of interventions would allow stroke survivors clear videos to serve as a guide and remind them of the proper way to complete their exercise and interventions for recovery. Additional resources created in this program included smart-phone accessible information resources on environmental modifications and adapted equipment to help provide clients with appropriate education on how to modify their environment to maintain the ability to participate in their activities of daily living. All the

program materials were bi-lingual with an English version and a Spanish translated version as the DR is primarily a Spanish-speaking country.

Overall, conducting a thorough needs assessment helped to ensure that the program is well-informed, targeted, and responsive to the needs of the population being served, ultimately leading to more effective and sustainable outcomes. Resources created for the program were created with all the aspects from the needs assessment in mind as well as prioritizing cultural competency. A thorough needs assessment is required to establish and maintain cultural competency for the project to ensure that it aligns with the values and beliefs of the community that the resources are being created for.

Background Information

The target population for this project resides in Puerto Plata, Dominican Republic. Puerto Plata has a population of 329,419 according to data from 2022 (Oficina Nacional de Estadística, 2024). While there are no definitive statistics on the number of stroke survivors in Puerto Plata, it is known that the DR has a high stroke prevalence rate of 8.4% (Ferri, et. al, 2011). The DR is also reported as one of the countries with the highest number of years of life lost and years lived with a disability from stroke (Pacheco-Barrios 2022). According to JT, who is one of the key stakeholders for this project, there are only two working OTs within the Puerto Plata community who work within a rehab facility in the city, delineating a need to increase this ratio of community members and available OTs. By educating and providing OTs, PTs, and other allied healthcare workers with these digital based resources, these can be shared with stroke survivors as additional resources to increase their functional ability through repetition and practice of these therapeutic interventions.

This program aimed to be utilized in the Puerto Plata community of the DR to provide access to individuals in the area who are unable to access occupational therapy services regularly. The community is primarily Spanish-speaking. An estimated 23% of the community currently remain below the poverty line with most of the residential population having very little access to healthcare (González, et., al, 2024). Individuals with disabilities of lower socioeconomic status in the DR receive the majority of their resources from community-based programs. There are several non-governmental organizations that have established community-based programs in the DR to provide preventative health education, community-based rehabilitation, and other programs that are essential for individuals who cannot access traditional healthcare service due to barriers such as cost and difficulty traveling. With community members experiencing barriers to accessing healthcare, non-governmental organizations try to use alternative means of connecting individuals with healthcare services, including this project which aims to utilize digital means to increase rehabilitation access for stroke survivors. Community member's ability to access the internet has increased dramatically over the years with the most recent estimate being 85.2% of the population having internet access (Pan American Health Organization, 2023). As of 2022, the percentage of people with smartphones in the DR is 82.6% (Kemp, 2022). With this huge spike in technology access in the DR comes the ability to utilize technology to provide stroke survivors with therapeutic resources to enhance their rehabilitation journey.

Identification of Stakeholders

Stakeholders for the project were identified through the help of the site mentor and faculty advisor. Each stakeholder had a different experience with communities in the Dominican Republic and were able to provide various perspectives and insights which aided the project

development. Each of the stakeholders were agreeable to have a conversation with the author about the project and were very excited to share what they had learned about working and serving in the community.

JT

JT served as the site mentor for this project as well as a valuable key informant throughout the project. JT is the CEO of Comunidad Connect which is a non-profit organization that serves the DR community and helps to provide access to clean water and health services to individual homes in rural areas of the DR. JT has a background of social-work and has worked in the Latin-America area for over a decade, providing necessary connections and services for the community members. JT has continued to expand his outreach by connecting individuals from various allied health professions, including occupational therapy, to the DR community. Jon was particularly interested in this project as it fits under a larger umbrella of Comunidad Connect as the organization is aiming to expand its service to include additional rehabilitation services year-round. JT's expertise and insight were invaluable to the production of this project and his continual focus on remaining culturally competent was necessary for this project to be sustainable. From JT's experience of working in rural communities, he has found that the biggest barriers for individuals to access healthcare services are cost and transportation. One of the ways he addresses these gaps is by providing local healthcare services to community members by collaborating with volunteer groups of health professionals throughout the year. He has recently been interested in providing additional rehabilitation therapy services for the community as his collaboration with OT programs has shown that there is a need for individuals with disabilities to receive rehabilitation services that OTs specialize in providing. Currently, when OTs travel to serve in the rural communities in the DR, they focus on visiting individuals in their homes that

have been identified through community health workers as needing therapeutic services. After the initial home visits, with OTs providing home evaluations, adaptive equipment modifications, teaching techniques on dressing and other daily tasks, and teaching exercises, there is no follow-up until the next OT or PT group travels down to serve. JT mentioned how he and his organization have a goal to expand the rehabilitation therapy services throughout the year as well as collaborate with OT programs in the country of the DR to schedule groups of OT students to come and serve in the local, rural communities. While CC is working on expanding the roster of groups coming to serve, there is a current need to provide individuals in the rural communities with on-going resources that can be shared with them that they can access at any time. JT shared that CC is also interested in continuing to learn how to leverage technology to further expand their reach to individuals requiring rehabilitation services, and how most individuals they work with have smartphones and ability to access the internet, regardless of their social economic status (SES). JT also reported that a large percent of the population that they work with are stroke survivors, and how CC has identified a need to educate and provide healthcare assistance for stroke survivors. JT aims to address this gap through collaboration with many allied health professionals and local community leaders. JT further shared how Comunidad Connect is creating connections with local OTs, PTs, and other allied healthcare professionals, and how there is a need for rehabilitation training sessions for individuals to be trained in multiple skills to share with clients that they work with.

PV

PV is the current CEO of the non-profit organization, Constanza Medical Mission, which began in 2005. PV has been involved with the organization since the beginning and has served as CEO since the year 2015. The organization provides health care services to individuals in remote

areas of the DR, providing general health care, pediatric care, ophthalmology, dentistry, and once-a-year rehabilitation therapy services. Initially the organization had groups of doctors and nurses serve in the community twice a year, however, after PV took on the role as CEO, he recognized the need for sustainability and how that could only be achieved by providing services year-round. PV has organized a sustainable model of scheduling different groups of doctors and nurses to serve in the DR community throughout the year to provide health services for the community members. PV possesses a wealth of information about the community from working with the community members for almost twenty years and was a very helpful source of information and insight. While PV has primarily worked with doctors and nurses, he is beginning to expand the services they provide by including rehabilitation therapy services throughout the year. In recent years, PV has had one physical therapist join the medical mission team in Constanza once a year, and PV's current goal is to start working with additional PTs and OTs to help provide services to those who would benefit from receiving rehabilitation services. From his experience of collaborating with the PT, PV reported that the PT saw a need for proper adaptive equipment, education on how to use them, and follow-up care for individuals who would benefit from a home exercise program. PV shared how he has witnessed a demeaning mentality when it comes to community member's views on disability. He shared how he has noticed that in communities that do not have many individuals with physical disabilities, disability is viewed as a weakness and not culturally accepted. However, in communities where individuals with disabilities are a part of everyday life, there is a more wholesome view of disability, and is generally socially accepted. PV shared how tightly bonded communities are in the DR and how they rely on each other every day. This communal aspect is important to consider as new projects are started in the communities, as collaboration with community leaders is necessary to establish

communal trust. PV also noted that barriers to accessing proper care include lack of health insurance, lack of clinics and facilities in rural communities, and the cost and transportation issues impeding individuals from accessing healthcare services. The biggest aspect that can be improved upon in PV's opinion is health education for prevention and maintenance. PV reported that using technology to provide educational resources would be very helpful in expanding the mission's impact.

JC

JC has been practicing as an Occupational Therapist since 2016. She primarily works in pediatric clinics, working with children with disabilities. Beginning in 2021, JC became a full-time travel OT working in several various states and in various settings. JC connected with Constanza Medical Mission and traveled to the Dominican Republic with a group of healthcare professionals to serve the community of Constanza. During her week-long trip, she focused on how the community could benefit from rehabilitation therapy services and how that would be most successful. She traveled to different community member's homes who had been previously seen by an OT student group through Comunidad Connect. These individuals had been identified as needing rehabilitation therapy services and had received initial visits by OT students a few months prior. Out of all the home visits she did, she reported that 80% of the community members she worked with had a stroke. JC determined that from her week-long experience in the rural community of Constanza, that stroke was the most prevalent cause of disability. Throughout her time working with the clients, her view was that through the scope of Occupational Therapy, environmental modification and adaptive equipment were the primary means of making sustainable changes in the community. JC reported that there were very few resources for clients, and the resources that were available typically could only be ascertained

through financial means. Barriers that she identified were cost and travel difficulties to facilities for individuals with disabilities. She reported that though there was a rehab clinic near the community, only clients who were able to afford the services and equipment were able to benefit from the clinic. She did report that one strength of connection was that every client owned a smartphone and had WIFI connectivity, which she did see as a strength for sharing resources to the families. JC's view was that for the scope of what OTs can do with the limited visits that they make throughout the year; home evaluations and equipment assessments would be the most beneficial until established relationships with rehabilitation therapy services are formed. JC also shared that she had learned that Constanza Medical Mission was beginning to collaborate more with Comunidad Connect, which she viewed as very positive to increase the frequency of rehabilitation therapy service groups visiting the community and working with the clients. She shared the importance of keeping clients accountable for doing their exercises and activities to help them progress in their rehabilitation, and how infrastructure and support needs to be built up throughout the year. Overall, JC had very helpful perspectives and was a wonderful resource as an experienced OT for this project.

AT

AT has been practicing as a Physical Therapist since 2016. Starting in 2017, AT became a travel therapist and has been practicing in hospitals and clinics in California. AT became connected to the Constanza Medical Mission five years ago and has traveled down to serve with the medical team each year. The past two trips to the DR that AT has done, she has begun to look at what kind of therapeutic needs there are in the community and considering how additional help and resources can be provided through the lens of rehabilitation therapy. AT reported that when she first traveled to Constanza, the hospital and rehabilitation clinic in the community was

beginning to be built. Over the years she got to witness how it grew and toured the facility to discover what resources they had. She reported that the rehabilitation clinic offers OT, PT, and Speech Language Pathology services, and the clinic itself does have adequate resources in the clinic such as practice stairs, standers, and a treadmill. However, the problem with accessing these services for community members is that services can only be accessed with health insurance or through financial means, which most individuals in the rural communities do not possess. There remains a gap for individuals who require services and cannot afford rehabilitation care. AT reported that from her experience the top priority struggle to access rehabilitation therapy service is the cost. She mentioned that local community partners is the main reason why individuals in the community have access to rehabilitation therapy services and that collaborating with community partners is necessary for any improvements to be made in providing communities with rehabilitation care. AT shared how the biggest need that she has seen is that there needs to be a process or protocol in place for checking back in with clients in the community. One visit from a PT or OT is not enough to ensure that the clients are being kept accountable for continuing their exercises, and carry-over needs to be ensured. AT reported that most clients she worked with were stroke survivors. She explained how hypertension is highly prevalent in the mountainous community and due to blood pressure medication being so expensive, stroke was very common in the area. AT confirmed that many of the patients she worked with did have smartphones regardless of their SES, and how utilizing the technology would be incredibly useful. AT also shared her view on how video-based information would likely help increase carry-over and consistency as the videos would be able to be accessed as many times as the client may need, after the initial visit of the OT or PT was made. AT also shared that one aspect that she noticed is that preventative information needs to be shared and

how the community members need to be educated on what they can do to decrease the chance of having a stroke.

Personal Experience

The author of this study visited Constanza, Dominican Republic in spring of 2023 with Comunidad Connect. The group she traveled with was from Georgia State University from the OT department and led by her capstone mentor. There were ten Occupational Therapy students in the group and worked in the community of Constanza. The group would drive to remote parts of Constanza and provide in-home OT services for individuals who were identified by CC as clients who could benefit from OT services. The OT students were paired off and given a client list for the day. The pairs of OT students worked with clients in their home along with a community health worker and a translator. The community health worker's role was to be the bridge between the client who they already knew, and the OT students so that the client's felt comfortable. The OT students provided OT services including home modifications, adaptive equipment modifications, dressing techniques, exercises, mobility safety, transferring, and education on the importance of adhering to all these interventions to improve functional ability. OT students also provided clients with tools such as therapeutic bands, Coban wraps, and demonstrated how everyday objects can be used in place of those. In several sessions, the author would video-record themselves showing the client specific exercises, so that the client could reference the videos after the OT students visit ended. The clients were very pleased to have videos on their phones that they could follow along with. Over the course of working with clients in the communities, the OT students provided OT services for 45 individuals with varying causes of disability with 20 of the total number, or 44.44%, having residual functional disabilities from suffering a stroke. Overall, the home visits demonstrated that there is a real need for OT services

in the rural communities in the Dominican Republic, which is when the author of the study became interested in working with Comunidad Connect to help identify solutions for these gaps in rehabilitation services provided to individuals in rural communities in the Dominican Republic.

Findings and Recommendations

There were several key findings from conducting the needs assessment and literature review. Most of the key findings had a consensus across the literature review as well as from the conversations with key stakeholders: barriers to accessing healthcare services, technology access of community members, need for rehabilitation services for stroke survivors, and importance of collaborating with local programs and local community leaders to ensure sustainability. The barriers to accessing healthcare included cost and transportation issues that presented challenges to community members obtaining necessary resources. The lack of health insurance and costs of medical services, including rehabilitation services, is a huge barrier to many individuals in need, especially those in rural communities. Transportation issues are another barrier to accessing healthcare services as most of the hospitals and clinics are not located in rural communities. Community members are more likely to receive the care that they need by organizations that offer medical services in their local community throughout the year, like in Constanza. Among the community at large, most community members have access to a smartphone and WIFI connectivity. Even in the rural communities, the importance of being connected through technology is apparent, as most individuals have a smartphone. This access to technology is a strength for the community as technology can be used to easily share resources. Technology access can be used to share video-based resources which can bridge the gap of reaching individuals who may not be able to read. Video-based resources also increase confidence in an

individual's ability to work on performing the exercises and tasks accurately, as they have a visual and auditory guide each time they practice. Repetition and regularity of exercises and activities was also a key finding that helps to improve functional outcomes. Both repetition and regularity for individuals participating in exercises and activities was more likely to increase using video-based resources as their confidence in their performance increases. There is a very apparent need for rehabilitation resources for stroke survivors in the rural communities of the DR. Stroke can alter individuals' lives dramatically, and quality of life can be improved upon by focusing on improving individuals' functional ability. The education and resources created and shared with community organizations can help provide stroke survivors with additional means of returning to or regaining their functional ability. However, merely creating and producing these materials is not enough for the program to be sustainable, educating local community leaders is crucial for resources to be shared with those in need. Therefore, collaboration between local programs and local community partners is essential for sustainability. Another strength of the community is the continued work done by the active local community partners. The community partners' care and work diligently to connect community members to necessary resources and collaborating with them is necessary to ensure sustainability of resources provided. According to the needs assessment, there will be active collaboration with local OTs, PTs, and other allied healthcare professionals who will be working with Comunidad Connect to provide services to clients.

According to the literature review, continued education on stroke rehabilitation for OTs, PTs, and other healthcare providers is helpful in providing stroke survivors with a transdisciplinary approach as healthcare providers work with each client holistically. Dressing techniques and exercises are part of stroke rehabilitation and can be used in this transdisciplinary

approach to improve patient outcomes, promote holistic rehabilitation, prevent secondary complications, empower healthcare professionals, and adapt healthcare providers to the changing needs of the growing prevalence of stroke survivors. By providing OTs, PTs, and other allied health professionals with education and resources on dressing techniques and exercising, patients will have a more comprehensive recovery with increased independence, mobility, and confidence, that are improved by learning to dress independently and improve mobility through exercises.

Through conducting the needs assessment along with the literature review, and from their own personal experience, the author gained valuable information for creating the program for the capstone project. The key findings helped to identify barriers, and strengths to keep in mind throughout the development of the program. To address the needs and challenges, the program needed to be developed so that there would be no cost to individuals to access the resources, and that they would be easily accessible. The information gained through the needs assessment and literature review identified how technology can be utilized to share electronic resources including video-based exercises/activities, which can be used for improving functional ability of stroke survivors by providing continued education to OTs, PTs, and other allied health professionals to help prepare them in meeting the needs of stroke survivors in the area.

Chapter 3 - Capstone Experience Protocol

Site Description

Comunidad Connect (CC) is a non-profit organization that serves rural communities in Nicaragua and the Dominican Republic that struggle in accessing basic resources and services, including clean water, food security, and health care. CC works to change this cyclical nature of poverty by bringing together donors, volunteers, and institutions that have appropriate resources alongside local, in-country partners with local expertise and personal experience in the community. CC and their stakeholders work to implement projects and programs that help to improve the quality of life of families living in poverty. The CC's headquarters in the Dominican Republic is in Puerto Plata. They provide services to areas surrounding Puerto Plata and other rural villages in the country. CC's guiding principles for the organization include: Strengths Perspective, Relationship Driven, Resolving Isolation Drives Economic Development, and Co-Investment. Regarding the strengths perspective, CC views development within the context of local human and social capital as well as addressing the needs of the community. CC's relationship driven principle acknowledges that open and continuous collaboration between public and private global, national, and local partners are necessary for sustainable development. CC is dedicated to connecting local communities with knowledge, networks, and capital to create opportunities for necessary and appropriate socio-economic development. CC promotes

investment of resources by all committed partners which is essential to ensure shared ownership of success for all projects and programs completed.

Comunidad Connect currently has seven community programs addressing the following: Community Health, Specialized Healthcare, Housing, Youth Development, Enterprise and Entrepreneurship, Food Security, and Clean Water. The Health Connections Program provides community health by connecting local primary care and preventative health initiatives to rural communities with the necessary and critical healthcare services they require. The Together for Health program provides specialized healthcare for community members with neurological disabilities and pediatric community members. This program provides year-round care for the community including home visits, transportation to specialists, and medicine. The CC Housing program helps to provide families in the community with adequate shelter by building homes for the families, which in addition creates local jobs, helps local economy, and fosters dignity for the families in the community. The Youth Development program focuses on utilizing organized sports and recreation to provide the community's youth with an outlet to learn team building skills as well as personal skills. Local leaders in the community are educated and supported via coaching clinics, training resources, and donations for materials. The Enterprise and Entrepreneurship program works to provide micro-loans, training, and education to help increase business opportunities in rural areas that experience barriers such as lack of funding and technical assistance. The Food for Good program focuses on providing food for families in need to combat food scarcity from poverty. The final program is the Clean Water program, and this is achieved by CC encouraging participating families to earn their water filters by investing in a minimum of 16 hours of community service (road repair, bridge construction, school maintenance, and health seminar attendance) to benefit all community members involved. The

water filters themselves are low-tech and user-friendly to make it accessible for all households in the rural areas.

The CC staff includes individuals from diverse backgrounds. Some staff reside in the United States, while others are native to the communities that CC works in which provides greater connection to the communities. CC staff have professional backgrounds ranging between translators, environmental educators, sports professionals, social workers, and public health workers. CC values working and employing individuals who live in the communities they work in, as this allows the organization to remain culturally competent and realistic as the actual needs of the community. This is one way that CC ensures local connection with the communities they work with. Each member on staff provides unique experiences and insights that they each bring to collaborate as a team to make a difference in the communities they work with. The CC also connects people globally by including school, church, clinic, and other programs to come and volunteer in the communities on projects that CC leads. They collaborate year-round with programs from across the United States, and JT works diligently to ensure that the needs of the community are being focused on and met by each group that volunteers based on their strengths. Currently, JT travels to overlap with most of the groups' volunteer weeks, and there is a goal for local community leaders within CC to transition leading the groups so that more volunteer groups can provide aid.

Process Used for Developing this Evidence-Based Program

Summary of Resources Used to Develop the Program

The development of this evidence-based program began by conducting a detailed needs assessment to gain information to create a program to be used in stroke rehabilitation. The needs

assessment identified the target population and community of Puerto Plata in the Dominican Republic. A thorough literature review was completed to understand the existing literature's research and knowledge relating to stroke rehabilitation and occupational therapy in the DR. Studies were found covering topics of stroke, occupational therapy's role in stroke rehabilitation, health in the DR, technology use in the world of health, principles of educating adults, and ultimate behavior change. Interviews with identified key stakeholders were conducted to gain more specific information from individuals who work in the community with the identified population, and information about the needs, preferences, and challenges of the target population were discussed. Previous personal experience on a volunteer trip to the DR also provided insight and information for the study and provided another level of understanding of what strengths and barriers the community had. The data from the literature review, interviews with key stakeholders, and from personal experience were collected and reviewed to identify gaps, trends, and priorities for creating the appropriate program.

From the needs assessment, literature search, and interviews, several key findings were found. These key findings included barriers to accessing healthcare services, technology access of community members, need for rehabilitation services for stroke survivors, and importance of collaborating with local programs and local community leaders to ensure sustainability. Strengths that were identified as key findings included access to technology and local community partners. Through the literature review and the needs assessment, the author gathered information and connected it together to help create a program that would be useful for the community. The program would share information on stroke and stroke care and geared towards teaching local PTs, OTs, and other allied healthcare professionals, who the local community partners were connecting with, and created resources that would be shared with clients. The

resources created would be hand-outs with information about stroke, one-handed dressing techniques, environmental modification, and adaptive equipment. All the hand-outs would also have a QR code that would link the individual to a video series on stroke. The videos addressed a variety of topics under stroke, such as environmental modification, adaptive equipment, upper and lower body dressing techniques, and upper and lower body exercises.

Evidence of Why this Program Should Work

Based on the literature search and discussions with key informants, this program should work to improve stroke survivors' rehabilitation process, as there is good evidence on repetition of exercises, regularity of exercises, and teaching this program to health professionals. After educating and sharing the resources with the health professionals and ensuring they understand the skills through the teach-back method, the health professionals will be prepared to teach these skills and share the resources with community members.

As mentioned previously, repetition is integral for physical recovery from a neurological injury such as stroke, and the program emphasizes the need for exercises to be done repeatedly for the muscles to recover and relearn how to complete everyday tasks (Casilang, et. al., 2020). The program emphasizes participating in exercises and activities regularly and repeatedly and health professionals will use the program's resources to educate clients on the specific techniques and exercises that can be completed to help improve client factors to support performance patterns.

Regularity of participating in completing exercises and activities by following the video guides is just as important as repetition (Chung, et. al., 2020). Research shows that by completing exercises and tasks continuously throughout the week, individuals will have better

improvement outcomes (Casilang, et. al., 2020). This program is designed to be used consistently throughout the week to foster adherence to exercise routines for clients to improve their ability to complete everyday tasks.

This program is aimed to instruct OTs, PTs, and other allied healthcare professionals in the area on stroke rehabilitation importance and basic exercises and activities that can be used to improve the rehabilitation of stroke survivors. Educating professionals in the area will increase their knowledge and resource base of stroke care to improve the impact they make when working with stroke survivors in rural communities (Finch, et. al., 2022).

This program provides resources that can be easily shared with participants and future clients to use in demonstrating dressing and exercise techniques and share helpful information on adaptive equipment, home modification, and one-handed dressing. These resources will help to provide health professionals with resources to share and help stroke survivors improve in their rehabilitation recovery.

Justification of Using Certain Program Features or Elements

Video-based recordings of interventions serve stroke survivors as a step-by-step guide and remind them of the proper way to complete their exercises and activities for recovery (Hill, et. al., 2016). Research has shown that providing home exercise programs in video format can improve client's confidence and adherence to participating in exercising compared to solely verbal or written information alone (Hill, et. al., 2016). Providing rehabilitation education through a video-based platform also allows exercises to be provided to patients who are unable to read, which reaches a wider population in the Dominican Republic (López-Sierra, 2019).

Utilizing a QR code to access the videos online makes it easy and accessible for clients to access the exercise videos to complete their exercises and activities (Hayes, 2017). The

information sheet with education on the importance of participating in following the exercise videos also includes the QR code that will link the client to the web platform where the videos are stored. Providing the client with a QR code that they can use to take them directly to the videos will be helpful for immediate access to the videos.

Teaching the program to OTs, PTs, and other allied health professionals includes education and demonstration by the OT educator. Following the presentation by the OT, participants will teach back and demonstrate the material they learned to ensure that they understand the concepts and physical exercises and activities. The teach-back method is a useful and effective tool for enhancing participant's understanding of the program's material and serves as a way for the OT to determine if there are any gaps in understanding that need to be addressed (Yen, et. al., 2019). The teach-back method will be operationalized by having the participants go through the two-hour training session and then returning one week later to demonstrate skills learned to the educator who will use a checklist to document and check off that skills have been accurately learned. After the participants have accurately demonstrated what they have learned through the teach-back method by teaching the educator the skills they learned in the training session, they will then be prepared to use the program's tools and resources to share with clients (Yen, et. al., 2019).

Chapter 4 - Results

Intended Participants

The intended participants for this program are Occupational Therapists, Physical Therapists, and other allied health professionals in Puerto Plata, Dominican Republic, who Comunidad Connect are in the process of partnering with. Therapists and other allied health professionals have a background in working in healthcare and have a basic knowledge of working with adults with disabilities. The program is taught with the assumption that the therapists and allied healthcare professionals possess the knowledge and skills to understand how to teach clients interventions safely and correctly without causing further injury. The intended participants will be pre-identified individuals that Comunidad Connect has established a partnership with to provide care to rural and remote communities near Puerto Plata. The intended participants will understand the mission and goals of the organizations that they are partnered with and understand the mission and goal of this program is to provide education and resources to community members who have suffered a stroke. The program will be taught and led by an Occupational Therapist student from Georgia State's Occupational Therapy program who has been trained and educated in stroke and has experience working within the stroke population. The program will be taught in a group setting, at a predetermined location for the meeting to take place. All the resources and materials will have a Spanish translation and the presentation will include a Spanish translator onsite to ensure that all Spanish-speaking individuals have full understanding of the material. The program will be taught with the intent of the rehabilitation therapists and allied healthcare professionals to have additional knowledge and resources to share in the homes of stroke survivors in the community who are unable to access resources from the hospital or clinics due to financial and transportation concerns. After the intended

participants have gone through the one-day program, they will be prepared to go out into the community with additional knowledge and resources to share with the community members of the stroke population whom they work with in their individual homes.

Description, Format, and Dosage of Program

The program, Stroke Stride Rehab, focuses on stroke education through a rehabilitation therapy lens and provides video-based resources for health professionals to share with clients who have experienced a stroke in the community. The name of the program indicates making strides towards recovery for stroke survivors. Stroke Stride Rehab is a two-hour training program and includes a PowerPoint presentation for therapists and allied healthcare professionals and includes teaching one-handed dressing techniques, exercises, home modifications, and adaptive equipment that can be used. The exercises included were chosen based on exercises that have been shown to increase strength, balance, and range of motion for stroke survivors (Gomez-Cuaresma, et. al., 2021; Högg, et. al., 2019). Increasing strength, balance, and range of motion help to improve overall client factors that help stroke survivors in their performance of daily activities (American Occupational Therapy Association, 2020). Four lower body exercises were chosen for the lower body exercise video and five upper body exercises were chosen for the upper body exercise video, to provide a 10 – 15-minute exercise program when stroke survivors participate in completing all of the recommended repetitions. The lower body exercises included a towel slide exercise to improve lower body range of motion and keep legs and hips from becoming stiff, seated marching to strengthen legs and hips, cat-cow stretches to keep hips and back from becoming stiff as well as strengthen abdominal muscles, and hip stretches targeting the hip and abdominal muscles (Gomez-Cuaresma, et. al., 2021; Chen, et. al., 2020). The upper body exercises included cloth squeezing exercises targeting upper arm and hand strength, and

grasping ability, lifting a water bottle exercise for strengthening upper arm and hand and grasping ability, flipping playing cards working on fine motor ability including pincer grasp and grasping smaller objects without dropping them, ball exercises for upper arm range of motion and to prevent arm from becoming stiff, and towel stretches for shoulder to increase upper arm range of motion and prevent arm from becoming stiff. (Högg, et. al., 2019; Toh, et. al., 2022). The program also includes the use of a teach-back method to ensure that the participants have full knowledge and understanding of the material presented. The Teach-back method is utilized by requiring participants in the Stroke Stride Rehab Program to complete the two-hour training program and demonstrate knowledge of skills learned by teaching the educator the dressing techniques and exercises one week later. Stroke Stride Rehab's goal is to empower OTs, PTs, and other allied healthcare professionals working in rural and remote communities in the DR, with knowledge and resources to share with local community partners and stroke survivors in the community. Due to the high prevalence of individuals who have experienced a stroke in the DR communities, education and resources on stroke will be impactful for the community to ease the burden that stroke occurrence places on individuals. The aim of the program is to ultimately provide healthcare professionals working in the community to share resources for stroke survivors to help improve their quality of life and provide practical resources for stroke survivors to access on stroke. Stroke Stride Rehab was created to make information and resources on stroke easily accessible and have no cost required to access the information and video-based resources. Free to use apps were used, such as YouTube and WhatsApp, to ensure that anyone with WIFI connection can access the resources. The training videos were created and uploaded to YouTube as the web platform provides easy access to videos and can be shared on smartphones. WhatsApp can be used to share video links and resources as WhatsApp is the

primary form of communication within the community and none of the information shared has client specific information. The video-based resources are useful, as they can be shared with stroke survivors either through WhatsApp by sending the YouTube link, or through a QR code that directly links the individual to the stroke videos on the Comunidad Connect YouTube channel. The videos can be shared by therapists and health professionals on their initial visit, and then can be accessed as often as needed by the client. The videos help bridge the current gap of not having the ability to complete multiple visits to the clients and were created for the purpose of increasing consistency of participation in activities and exercises and improve carry-over from the initial visit. Initially, this program will be taught to local OTs, PTs, and other allied healthcare professionals who Comunidad Connect are in the process of making connections with. Once local healthcare professionals have gone through the Stroke Stride Rehab program, they will then be prepared to teach the program to other identified local community health workers to continue to expand the program's outreach. Stroke Stride Rehab was created with the intention of being implemented by the next Georgia State University Occupational Therapy Department cohort. One of the Occupational Therapy students will travel to the Dominican Republic collaborating in person with Comunidad Connect and their local community partners to provide stroke education and resources. The OT student will offer the two-hour training program to OTs, PTs, and other allied healthcare professionals, and conduct the training on pre-determined dates. There is a detailed supplies list for the Occupational Therapy student to use to teach the training program. The training will be a one-day program, with the presentation and successful practice of material taught as the outcome from the program. The presentation information is located through PowerPoint presentation and will require a laptop for presenting. Ideally, a projector would be used to share the PowerPoint slides as a visual aid. However, in the event a projector

may not be accessed, the PowerPoint slides will be shared with participants via WhatsApp or Email, and accessed easily on mobile phones, as the PowerPoint information will also be available on a mobile friendly interface.

The presentation begins with information about what stroke is and what causes a stroke to occur. Then, information is included on signs of a stroke and what to look out for. Next, the presentation included information on how OTs, PTs, and other allied healthcare professionals can use rehabilitation techniques to help improve quality of life for individuals and help them regain functional mobility to help them reach their goals. The presentation then shares information on how to teach individuals with a stroke one-handed dressing techniques for individuals with limited mobility on one side. The presentation goes over the importance of dressing skills and how dressing can be used as a therapeutic exercise itself. The dressing skills include upper body dressing with a short-sleeved T-shirt, a long-sleeved button down, and lower body dressing with pants, socks, and shoes. Next, the presentation includes information emphasizing the importance of participating in stretching and exercising. Exercises and stretches for upper body and lower body are demonstrated in the videos. The presentation includes all the videos created that can be easily shared as resources with clients as well. The presentation includes information on home modifications and adaptive equipment that can easily be implemented to enhance safety, mobility, and function around the home. The one-day program includes time and provides opportunity to practice the dressing, exercise, and stretching skills, under the guidance of the OT instructor, as understanding the steps is important for participants to master before teaching stroke survivors. The one-day program also includes time for teach-back to other participants, so that the Occupational Therapist instructor can check in with each participant to make sure that they understand the process correctly.

Training Needed to Implement the Program

To effectively lead and teach the Stroke Stride Rehab program, an Occupational Therapy Doctorate capstone student will be interviewed and chosen from Georgia State University. The OT student will have successfully completed eight semesters of their Occupational Therapy program prior to beginning implementation of the Stroke Stride Rehab program. The student must have experience working with individuals in the stroke population. The student will be trained on the program itself and understand the purpose and intent of the program. The literature review will be shared in detail for the student to understand the supporting evidence for the program. The needs assessment will be shared with the student as well so that they understand the specific needs that are addressed in the Dominican Republic stroke population. The student will demonstrate understanding of the program presentation material and successfully teach the program to the author of the program to ensure accuracy of understanding and ability to teach the program to participants in the Dominican Republic. The student will also demonstrate understanding of the upper body and lower body dressing techniques, and upper body and lower body exercises and stretches to be prepared to accurately teach and assess the program participants understanding of the techniques. Once the student demonstrates accurate understanding of the program, the student will be introduced to the Comunidad Connect site mentor. CC will work with the student to identify additional site mentors on site in Puerto Plata, Dominican Republic, for the student to collaborate with. The student will work with the site mentors to recruit participants and schedule multiple days to offer the Stroke Stride Rehab two-hour training program.

Summary

In summary, the Stroke Stride Rehab Program was created to equip healthcare professionals in Puerto Plata, Dominican Republic, with the knowledge and resources needed to support stroke survivors in rural and remote communities. Targeting OTs, PTs, and other allied health professionals, the program offers a two-hour training session covering stroke education and rehabilitation techniques including dressing skills, exercises, home modifications, and adaptive equipment. Emphasizing video-based resources for ongoing support for stroke survivors, the program aims to bridge the gaps in access to appropriate care due to financial and transportation barriers. The program will be implemented through collaboration with local partners in the Dominican Republic and led by an OT student from the Georgia State University OT department. The Stroke Stride Rehab program ensures effective training and empowers healthcare professionals to make meaningful strides towards improving the quality of life for stroke survivors in the community.

Chapter 5 - Discussion

The evidence-based program developed for stroke rehabilitation in Puerto Plata, Dominican Republic, addresses functional mobility needs and challenges experienced by stroke survivors in the remote and rural communities. The program was designed to align with specific cultural considerations and resources were created after completing a detailed needs assessment, literature review, and including stakeholder input. This discussion section focuses and reflects on key aspects of the Stroke Stride Rehab program, its potential impact, and the areas for future research and improvement.

Strengths

One of the strengths of the Stroke Stride Rehab program is that it was created by integrating stakeholder input through conducting several interviews with local partners and healthcare professionals who work extensively in the community. The program is designed to be taught to local stakeholders, including community Occupational Therapists, Physical Therapists, and other allied healthcare professionals to enhance long-term sustainability of the program. Collaboration with local partners and individuals is key to enhancing the program's outreach and effectiveness and fostering empowerment through the community. Another strength of the program is that it draws upon a strong foundation of evidence-based literature on stroke rehabilitation from the literature review that was conducted in the development stages of the program. Stroke Stride Rehab emphasizes the importance of repetition and regularity in rehabilitation progress, and the benefit of technological accessibility to achieve these behaviors is exemplified in the program. The program incorporates video-based interventions and QR code technology to access the videos that assists in overcoming barriers to rehabilitation therapy access and works to improve client adherence to rehabilitation therapy exercises and activities.

Potential Impact and Challenges

While the Stroke Stride Rehab program does hold promise for improving stroke rehabilitation outcomes in Puerto Plata, there are several challenges that must be addressed to ensure its impact. While access to technology is largely available even in rural communities, there is the chance that in some rural communities, technology access may pose a continued barrier to community members. Assurance of equitable access to resources must continue to advance for community members to benefit from the digital resources. Additionally, ongoing training and support for healthcare professionals involved in the Stroke Stride Rehab program will be necessary for maintained program implementation to ensure its effectiveness.

Future Program Directions

For the program to remain relevant and sustainable to meet the needs of the community, continuous evaluation of the program is necessary. Future research could focus on assessing the Stroke Stride Rehab program's effectiveness in improving functional outcomes and quality of life for stroke survivors in Puerto Plata. Future research could also collect data on exercise adherence of the stroke survivors and satisfaction with the program to evaluate if the program is effective. Findings from future research studies could provide valuable insights into the long-term impact of the program. The program could also be expanded to other regions or populations with similar needs, which could further contribute to the program's scalability and relevance.

Conclusion:

In conclusion, the evidence-based Stroke Stride Rehab program for stroke rehabilitation in Puerto Plata, is proactive and collaborative in its effort to address the many complex challenges that stroke survivors face in the Dominican Republic. By utilizing evidence-based practices, stakeholder input and feedback, and innovative technology, the program has the

capacity to make a meaningful difference in the lives of individuals recovering from stroke. Through the use of continued evaluation, modification, and community engagement, the program will remain sustainable. The Stroke Stride Rehab program can continue to evolve and serve as an effective model for stroke rehabilitation interventions in communities with limited resources around the world.

Limitations

While the Stroke Stride Rehab program aims to address the rehabilitation needs of stroke survivors in Puerto Plata, Dominican Republic, there are several limitations to the study that must be acknowledged.

1.) Generalizability: The Stroke Stride Rehab program's development and plan for implementation are specific to the context of Puerto Plata, Dominican Republic. The program may not be directly applicable to other regions due to differences in culture, socioeconomic status, and healthcare system contexts. To ensure the program's effectiveness in other regions and settings, the program would require adaptation and additional needs assessments to ensure its relevance for other areas.

2.) Resource Constraints: Despite striving to ensure accessibility, challenges relating to technology access most likely persist in certain rural areas, which poses an issue to the program and limits the program's impact. Additionally, lack of healthcare professionals within the communities may affect the implementation of the program which will affect the effectiveness of the program.

3.) Sustainability: While the program emphasizes the importance of collaborating with local partners and local health professionals, its long-term sustainability may be challenged by

changes in staff or organizational funding. For the program to continue, ongoing support and commitment from all stakeholders involved is essential for the program to continue making a long-term impact.

4.) Cultural Sensitivity: While the program aimed to incorporate cultural considerations into its development and design, cultural differences and preferences among stroke survivors have not been fully addressed. Further research and increased community engagement may be needed to ensure that the program remains relevant to the community members wants and needs to remain culturally appropriate.

5.) Program Evaluation: For Stroke Stride Rehab's effectiveness to be assessed, detailed evaluation methods must be initiated such as a pilot study or control trial, to understand the true impact of the program. Evaluation of the program is imperative to determine accurate information on the actual impact of the program on stroke rehabilitation and client satisfaction.

6.) Implementation Challenges: Program implementation may be difficult to manage in the beginning of the training stages as requiring onsite training is imperative for mastery of interventions. Finding the right person in the next GSU OT cohort who is equipped with the knowledge and ability to teach the program to health professionals in Puerto Plata and able to travel down to the Dominican Republic for a sufficient amount of time may pose a challenge. Ensuring participant engagement may also present a challenge to implementing the program. Strategies to address implementation challenges should be created and integrated for success of the program.

In conclusion, the Stroke Stride Rehab program does show promise for addressing rehabilitation needs of stroke survivors in the Puerto Plata communities. However, special attention must be made in acknowledging and addressing the limitations outlined above to ensure the program's impact and sustainability. Continued collaboration, evaluation, and adaptation with local stakeholders is essential to overcome these limitations and ensure success of the program in improving the quality of life for stroke survivors in the Puerto Plata community.

Sustainability Plan

Sustainability plans are important and crucial for ensuring lasting effectiveness and impact of programs and are set in place to maximize the program's relevant usefulness for individuals and communities. To ensure the long-term sustainability plan of the Stroke Stride Rehab program, several key strategies can be implemented. The first is that the program will empower local healthcare professionals to provide train-the-trainer sessions in their community after the initial training by the Georgia State University OT student. The local professionals can take on community leadership roles to continue training new participants to expand the program's reach to other communities. The second key strategy is that local partnerships will continue to be developed with local healthcare organizations, community groups, and government agencies. Collaboration between local partners is integral to integrating the program into existing healthcare services to ensure ongoing support. The third key strategy is to foster community ownership of the program by involving stroke survivors and their communities in program planning and implementation. Incorporating their feedback and input helps to create a tailored program to meet the local needs and preferences, which increases the relevance and

effectiveness of the program. The fourth key strategy is to seek additional funding from grants, non-profit organizations, and sponsors to support and sustain the continued growth of the program. Fundraising initiatives and events can be developed to accrue financial resources for the program as well. The fifth key strategy is to continue leveraging technology to reach individuals in rural and remote areas with internet access. Continued utilization of video-based resources will continue to be useful for support and education for stroke survivors. The sixth key strategy is establishing adequate evaluation measures to assess the impact of the program and identify areas for improvement. Data collection on participant outcomes, program reach, accessibility of video-based resources, and stakeholder input will help to determine the program's effectiveness. The seventh key strategy is to provide continued training and professional development opportunities for healthcare professionals involved in the program. Updating the healthcare professionals on the latest advancements in stroke rehabilitation and providing them with opportunities to enhance their skills and knowledge will greatly benefit the sustainability and relevance of the program. The eighth and final key strategy is to develop a detailed and formal sustainability plan that clearly outlines strategies for long-term continuation and growth. The detailed plan can include clear set goals, objectives, and timelines. The plan can be reviewed and updated regularly to adapt to any changing circumstances and any potential needs dictated by the community.

By implementing these eight key strategies, the Stroke Stride Rehab program can be established as a sustainable program that continues to make a lasting, positive impact for stroke survivors and their communities in Puerto Plata, Dominican Republic, for many years to come.

Conclusions

The Stroke Stride Rehab program creation is a significant step in filling a rehabilitation therapy gap in Puerto Plata, Dominican Republic. The program was developed through a collaborative effort with Georgia State University's Occupational Therapy program, Comunidad Connect, health professionals serving in the community, and key stakeholders. The program is developed to meet the unique needs and challenges faced by rural and remote communities in accessing stroke rehabilitation therapy services. Through integrating stakeholder input, conducting an in-depth needs assessment, and using evidence-based practices, the program aims to empower Occupational Therapists, Physical Therapists, and other allied healthcare professionals with the knowledge and resources required to support stroke survivors. The program emphasizes repetition and regularity of participating in exercises and activities through utilizing technology as the means for accessing the interventions. The Program signifies advancement in occupational therapy practice, especially in addressing rehabilitation needs of stroke survivors in settings with limited resources such as rural communities in Puerto Plata, Dominican Republic. By implementing evidence-based practices, stakeholder input, and innovative solutions using technology, the program demonstrates the potential of occupational therapy in improving the quality of life for individuals affected by stroke.

Implications for Occupational Therapy:

Enhanced Accessibility: The program emphasizes the use of video-based interventions and QR code technology exemplifies how occupational therapy interventions can be made more accessible to individuals with limited access to rehabilitation therapy services. Occupational

Therapists can extend and expand their reach beyond traditional clinical settings by utilizing technology and provide rehabilitation services to stroke survivors in remote and rural areas.

Sustainability: The program focuses on capacity-building among local healthcare professionals as occupational therapists utilize their role as educators and advocates for stroke rehabilitation. By training local OTs, PTs, and other allied healthcare professionals, the program improves quality of care for stroke survivors and strengthens the healthcare infrastructure within the community.

Cultural Competence: The program's development process involved collaboration with local stakeholders and consideration of cultural factors which emphasizes the importance of cultural competence in occupational therapy practice. Understanding the unique cultural context and needs of the community is essential for creating effective interventions that will be beneficial to the target population of stroke survivors and promote participation in rehabilitation services.

Future Work:

Evaluation and Research: Future research efforts should focus on evaluating the effectiveness of the Stroke Stride Rehab program in improving functional outcomes, adherence to therapy interventions and exercises, and quality of life for stroke survivors. Evaluation can provide valuable insights into the program's impact and inform future changes to the program.

Sustainability and Scalability: Ongoing training and support for local healthcare professionals should be prioritized to ensure the sustainability of the program. Strategies should also be developed to secure funding and community engagement. Collaborating with local partners and stakeholders will be pivotal for ensuring the program's long-term impact to additional communities.

Continued Innovation: Occupational Therapists should continue to explore and learn about innovative approaches and technologies to enhance stroke rehabilitation therapy services and interventions. Utilizing new technology tools and resources can help to supplement traditional therapy modalities and improve access to rehabilitation services for underserved communities.

In conclusion, the Stroke Stride Rehab program demonstrates the potential of occupational therapy in utilizing technology in addressing complex challenges endured by stroke survivors in remote and rural communities in Puerto Plata, Dominican Republic. Utilizing evidence-based practices, technology, and local community partnerships, OTs can help in improving the quality of life for individuals affected by stroke which can serve as a model to help stroke survivors worldwide.

Appendix A: Learning Objectives

Learning objectives (LTGs) (What you hope to learn; must fit with the GSU OT Curricular Design & Objectives) ***Include 2-4**	**Short-term objectives (STGs)** (Short-term steps to help you reach your learning objectives) ***Include 2-3/objective**	**Learning activities** (What you will do to achieve the learning objective) ***Include 2-4/objective**	**Outcome measures** (What will you produce as evidence for achieving the learning objective; the deliverables of your project)	**Timeline for completion** (When will this outcome measure be completed) **This section will be completed in the summer semester*
1. Laura will effectively develop an online OT educational program to aid OT health care providers teach care recipients therapeutic activities within the Latin America community	1A. Laura will complete a needs assessment to determine specific diagnoses that are most prevalent in Latin America to include in the educational material 1B. Laura will determine through internal and external resources how online educational materials will be beneficial for the	1a. Complete a literature review to provide information on diagnoses seen in Latin America 1b. Identify and interview key informants to provide valuable insight and information on Latin America population	1a. Completed written needs assessment including literature review and interviews with key informants 1b. Completed program outline of what therapeutic activities for which diagnoses will be included in the material as dictated by needs assessment and research	1a. Week 1-4 1b. Week 5

	Latin American community			
2. Laura will successfully create educational materials including print out sheets and a video library of exercises and therapeutic interventions to share with OT health providers to help support care recipients in the Latin America community.	2A. Laura will determine specific therapeutic activities and interventions to include in the prints-outs 2B Laura will determine specific therapeutic activities and interventions to include in the video library.	2a. Research appropriate therapeutic activities and interventions to include in the video library 2b. Create a "supplies list" of items that can be used for therapeutic activities 2c. Develop and create the videos in a clear and organized format	2a. Resource list gathered of sources used for therapeutic activities 2b. List will be completed 2c. Format will be approved by capstone mentor and faculty advisor for clarity and understanding	2a. Week 6-10 2b. Week 6-10 2c. Week 6-11
3. Laura will demonstrate ability to successfully complete capstone project by the end of the semester	3A. Laura will prepare for the capstone experience by completing capstone assignments.	3a. Facilitate pre-determined assignments of capstone project 3b. Complete program development	3a. Completion of capstone learning objectives 3b. Completed online program	3a. Week 3-12 3b. Week 12-14 3c. Week 12-14 3d. Week 14

	3B. Laura will complete the capstone experience within the 14 weeks of the spring semester.	3c. Complete final written paper 3d. Present on findings	3c. Final paper written and reviewed by faculty advisor 3d. Presentation completed at end of semester	

Appendix B: Supervision Plan

- Scheduled Meetings
    - Weekly meetings with faculty advisor beginning January 16th, and additional meetings set as necessary.
    - Weekly meetings beginning January 10th with site mentor, and additional meetings set as necessary.
    - Biweekly group meetings with faculty advisor and additional cohort members

- Communication methods
    - Email will be the primary method of communication with site mentor, with Webex calls used as the meeting platform.
    - Email will be the primary method of communication with faculty advisor, with Webex calls used as the meeting platform.
    - Telephone calls used as necessary with site mentor.
    - Telephone calls used as necessary with faculty advisor.
    - WhatsApp used to connect to individuals working abroad in Dominican Republic.

- Timeline of deliverables
    - Week 1-5: Completed written needs assessment including literature review and interviews with key informants.
    - Week 5: Completed program outline of what therapeutic activities for which diagnoses will be included in the material as dictated by needs assessment and research.

- Week 6-10: Resource list gathered of sources used for therapeutic activities.
- Week 6-10: Supplies list will be completed.
- Week 6-11: Format will be approved by capstone mentor and faculty advisor for clarity and understanding.
- Week 4: Completion of capstone learning objectives:
- Week 6-12: Completed online program.
- Week 13: Final paper written and reviewed by faculty advisor.
- Week 14: Presentation completed at end of semester.

- How to resolve possible disputes
  - Disputes will be prevented by establishing clear communication throughout the project experience with all communication being recorded in meeting notes and shared in writing to further prevent miscommunication and disputes.
  - Regular meetings and check-ins are scheduled to discuss project progress to prevent misunderstandings that can lead to disputes.
  - Address issues promptly to prevent escalation of dispute.
  - Respect differences of views and perspectives of all those involved in the project.
  - In the event of a dispute, written communication will be referred to and the dispute handled between the individuals involved. If the dispute cannot be resolved, then a neutral third party (faculty advisor or capstone coordinator) will be sought after to mediate.

- Roles and responsibility of each person

Site Mentor:

- Provides expertise in working with remote, underserved populations and connecting them with healthcare services.
- Professional guidance on practical implications of the project and how to remain ethical.
- Facilitate connections and networking with professionals, organizations, and resources that pertain to the project's relevance and impact.
- Provide practical feedback on the project's feasibility and impact on real-world implications.

Faculty Advisor:

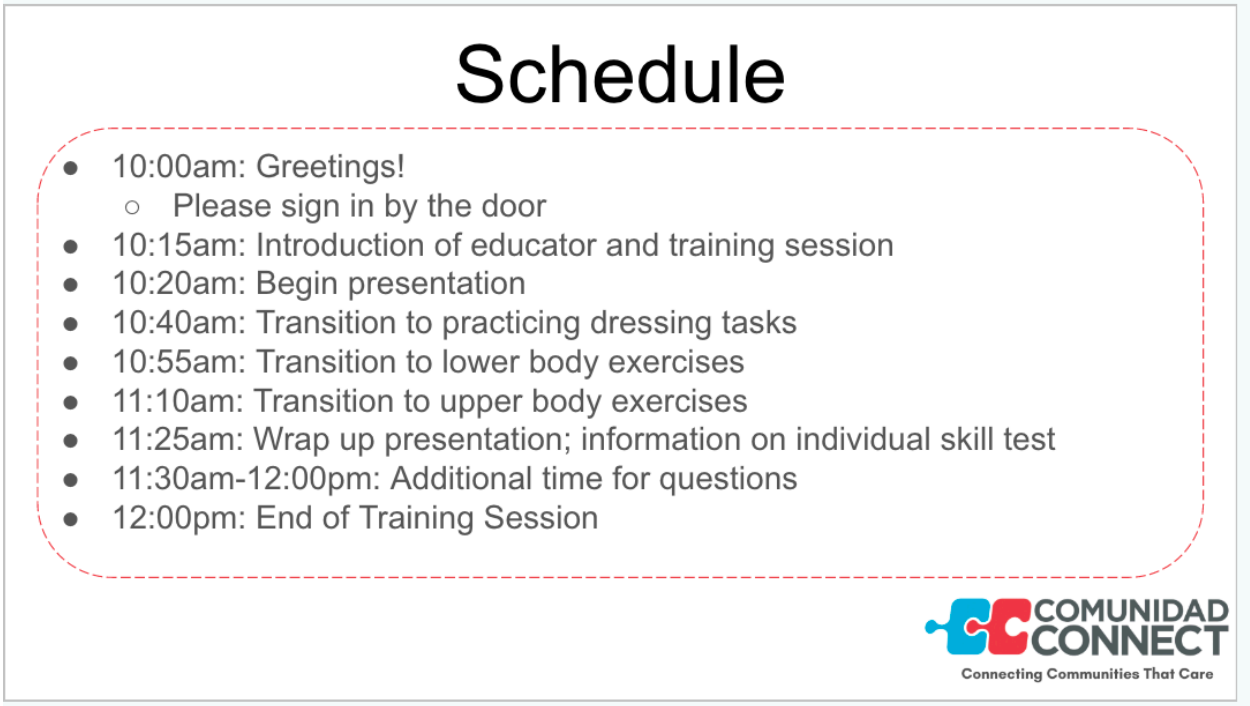
- Provides support and expertise by providing advice and guidance for the project.
- Assists in providing feedback and edits on project materials.
- Monitors project overview and ensures that all ACOTE standards are fulfilled.
- Provides support for resource access to with relevant resources and collaborations for the project.
- Evaluates project quality and student's performance.

Student:

- Creator and leader of the project, ensuring project goals are met.
- Conducts the research and analyzes information for the project.
- Maintain regular communication with faculty advisor to update on project progress and seek guidance.
- Documents project activities and writes written report of project for the final presentation.

Appendix C: Stroke Stride Rehab Program Material

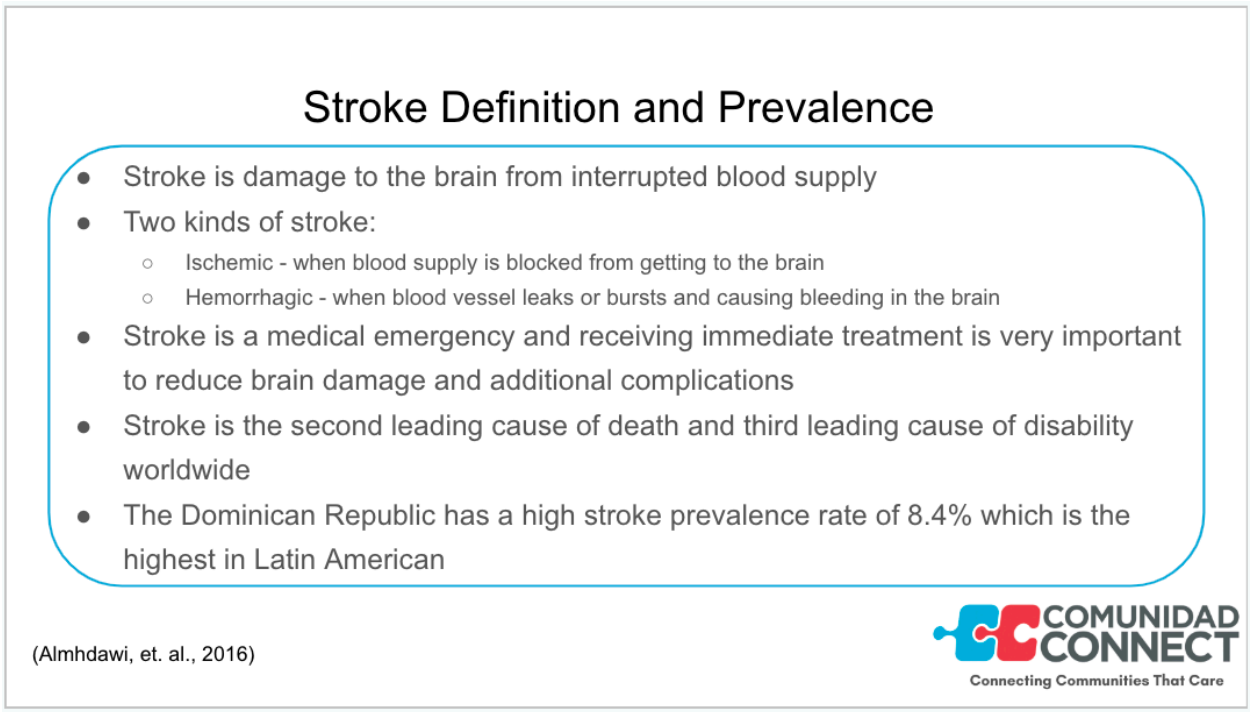
Welcome to the Stroke Stride Rehab Program! My name is _____ and I am so happy to be here with you today! Thank you all for coming, now let's get started!



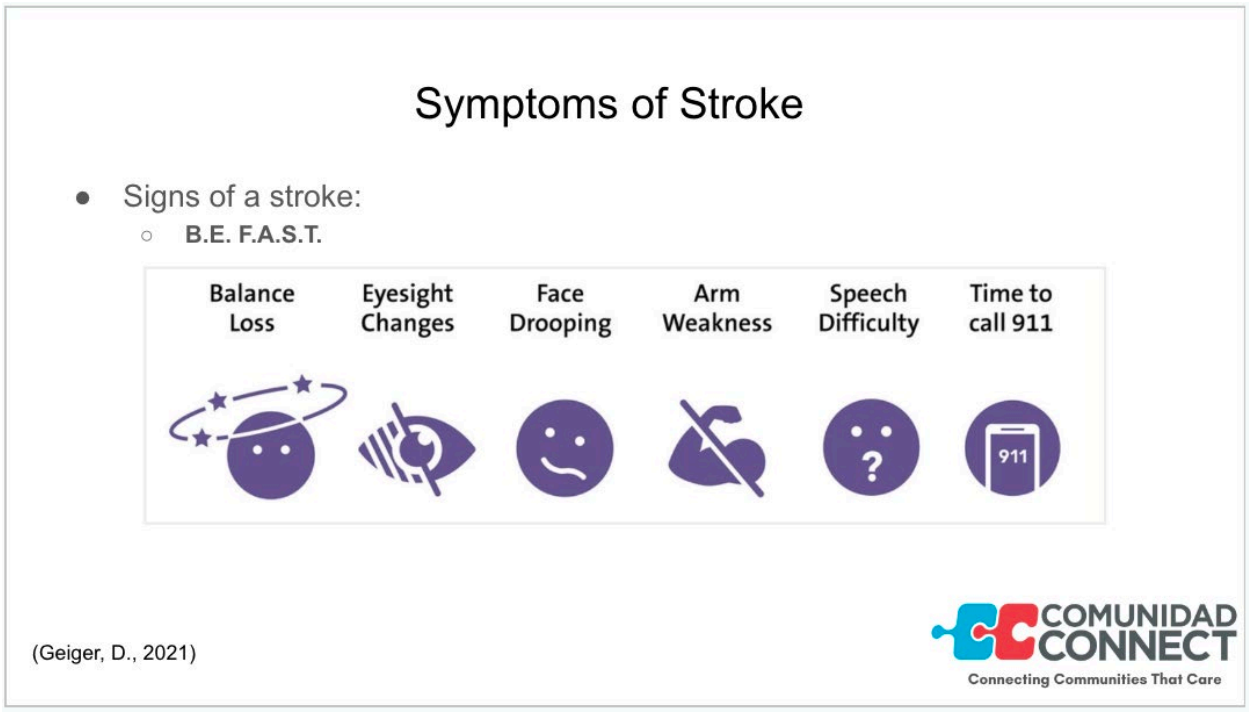
First, we'll go through our schedule–Our introduction time has already ended, and I would just like to remind you if you haven't already, please sign in by the door!

Educator Note:

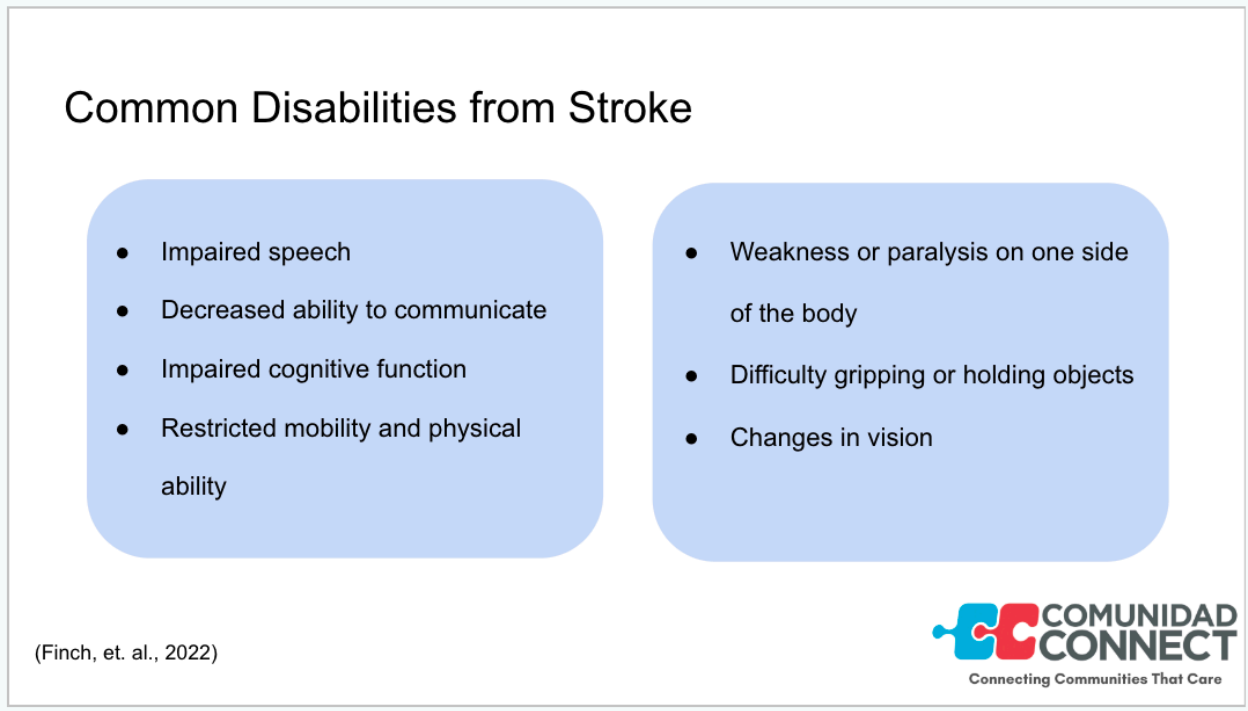
Go through the schedule



Stroke, also known as cerebrovascular accident (CVA), is an acute disturbance of focal or global cerebral function that can be caused by two different mechanisms: an ischemic stroke is caused by a blocked artery and a hemorrhagic stroke is caused by sudden bleeding in the brain. Stroke is the second leading cause of death and the third leading cause of disability globally. About 40% of stroke-related deaths occur during a person's most productive and active years of their life. Stroke is one of the leading causes of long-term disability across the globe and causes stroke survivors to have physical challenges resulting in impairments with mobility, lack of ability to complete self-care tasks independently, and cognitive deficits. Immediate medical care and attention is necessary to reduce brain damage and additional complications leading to further disabilities.

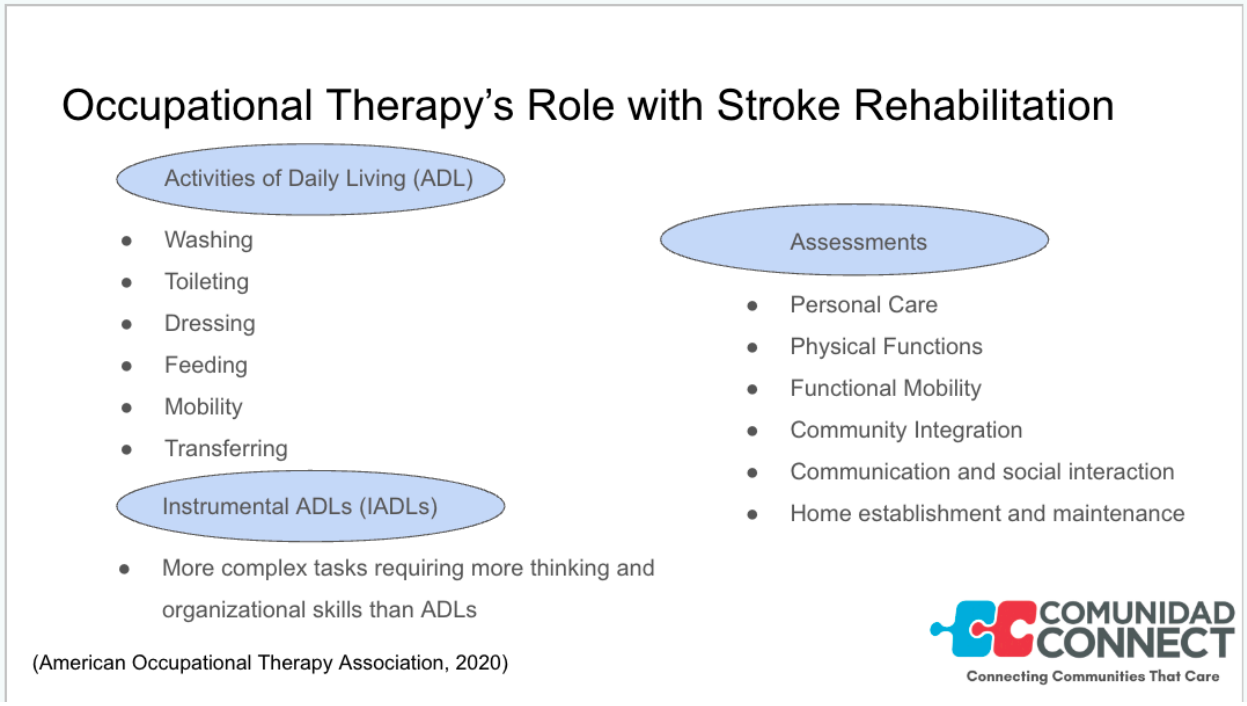


Note for Educator: Read slide and also draw attention to the incorrect emergency number! "Time to call 911" means time to seek medical attention as quickly as possible

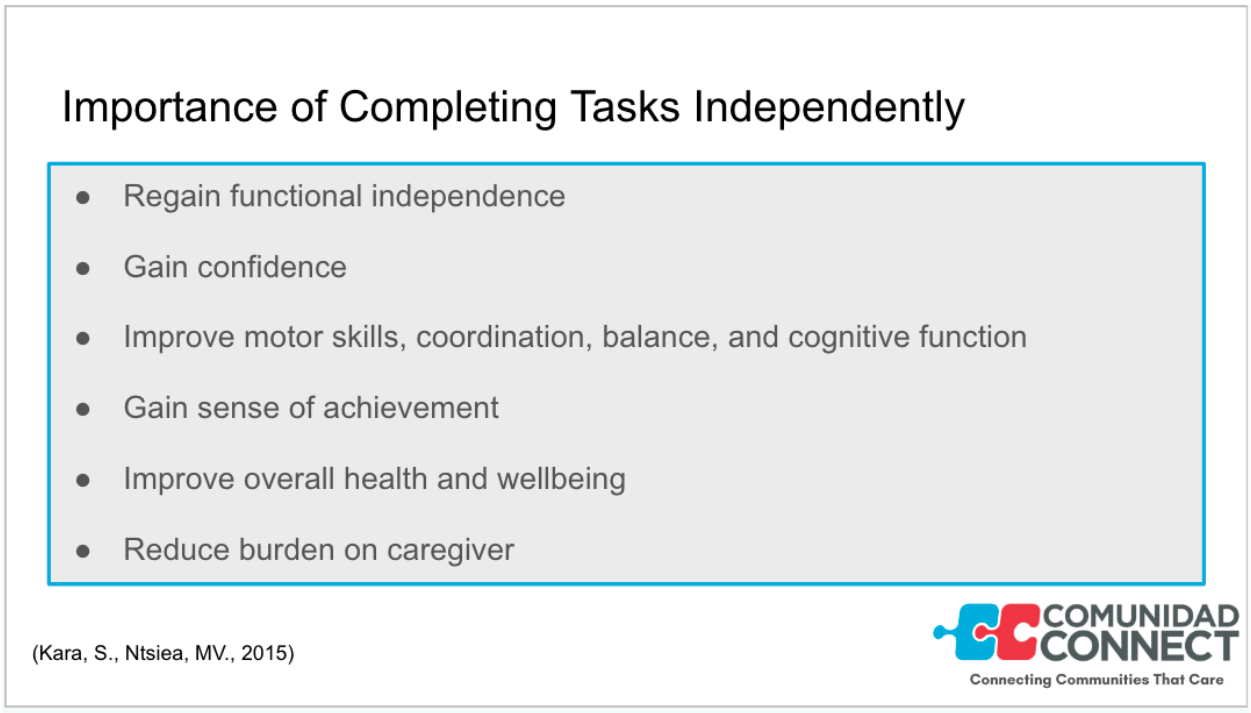


Common disabilities from stroke include: impaired speech, decreased ability to communicate, impaired cognitive function, restricted mobility and physical ability, weakness or paralysis on one side of the body, difficulty gripping or holding objects, and changes in vision. Experiencing any of these disabilities may

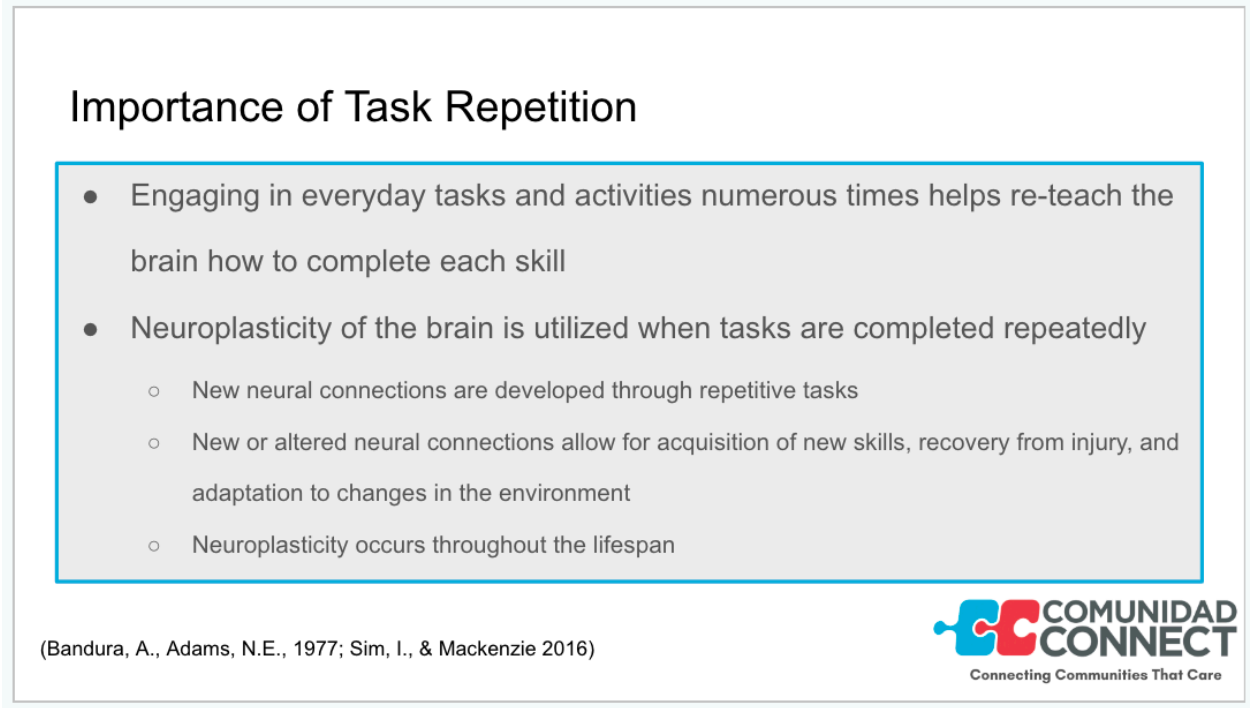
affect an individual's ability to participate in daily activities and tasks that they want or need to do. Often, stroke survivors experience multiple disabilities simultaneously and have to address each disability during rehabilitation to promote occupational engagement. This is not an exhaustive list of disabilities from stroke, as there can be many kinds of disabilities as stroke occurs in the brain, and each disability may cause varying levels of disability.



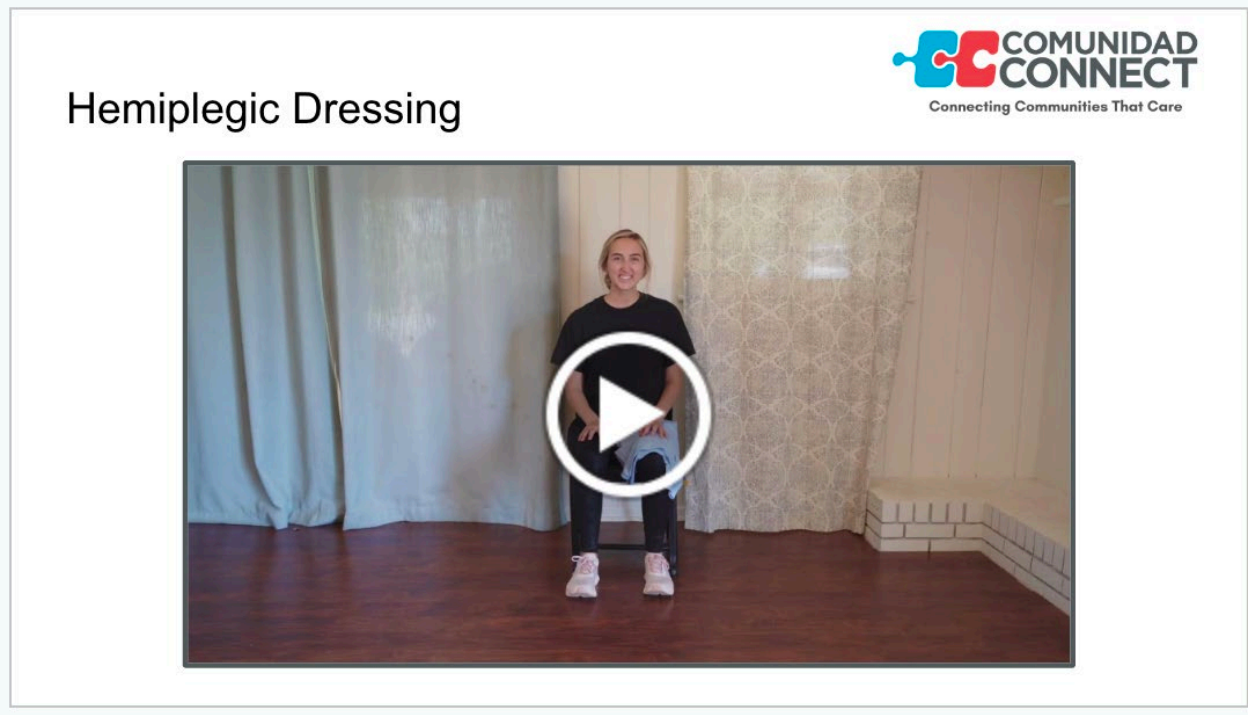
Evidence-based OT interventions have been shown to help increase improvements in upper extremity movement, mobility safety, social participation, and cognitive performance of stroke survivors. Occupational Therapists (OTs) utilize many different strategies including activity modification, environment modification, compensatory strategies, and remediation or development of skills. Using activities of daily living (ADLs) as task-based OT interventions is reliable in improving functional movement in chronic stroke patients. Examples of occupation-based interventions are in context of the client's life and while not an exhaustive list, OTs work with clients to improve their ability to do ADLs and IADLs as mentioned here. Examples of ADLs include: washing, toileting, dressing, feeding, mobility, and transferring. IADLs include more complex tasks that require more thinking and organizational skills such as preparing a meal, cleaning, shopping for groceries, and managing medication. Education on stroke rehabilitation practices for OTs, PTs, and other healthcare providers is helpful for educating and providing resources for stroke survivors. OTs assess many areas including personal care, physical functions, functional mobility, community integration, communication and social interaction, and home establishment and maintenance. Information from these observational assessments provides the OT with insight into how to help the client reach their specific goals.



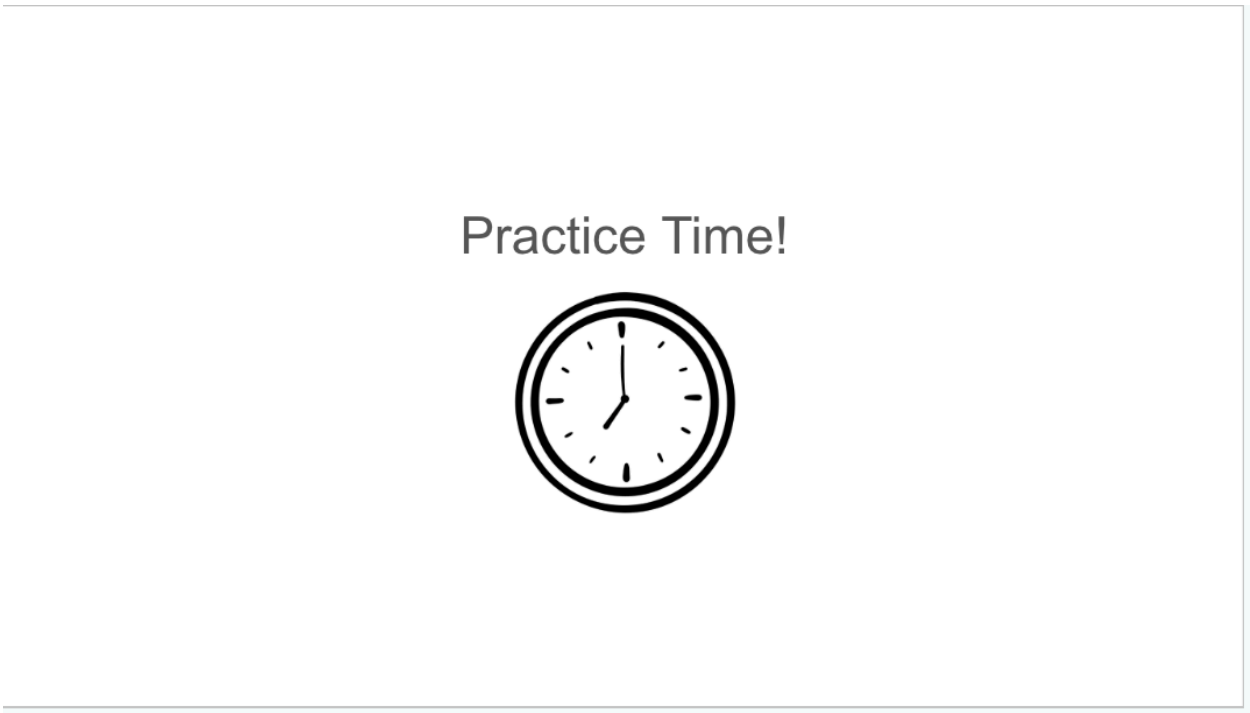
There are several reasons why we want to promote independence in completing activities among stroke survivors, and the first being regaining functional independence. Relearning how to do tasks to complete daily activities and working on the skills they require help stroke survivors gain confidence in their ability and gain a sense of achievement. Promoting working on regaining as much functional independence as possible can also helps to improve motor skills, coordination, balance, and cognitive functions. Supporting and encouraging the client to move more and participate in daily activities improves overall health and wellbeing which simultaneously reduces caregiver burden which is also helpful for family and friend dynamics depending on who the caregiver is.



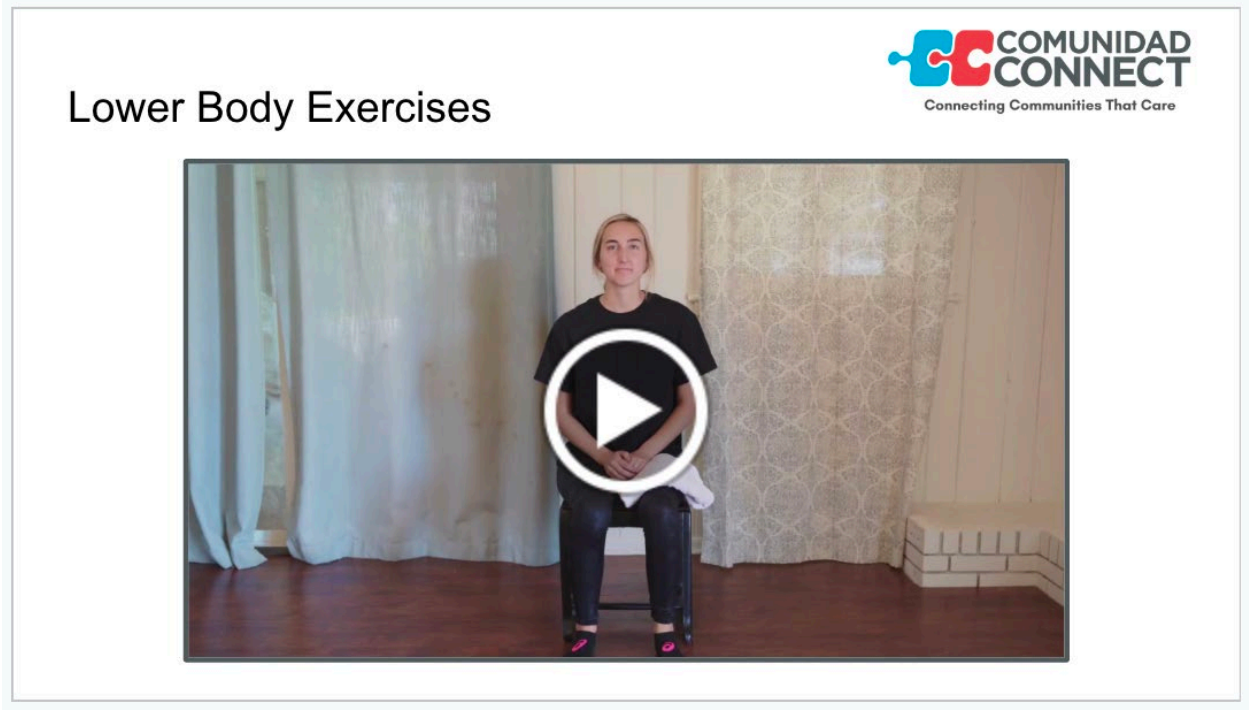
Repetition is a key part of physical recovery from a neurological injury such as stroke, and providing video-recordings of interventions would allow stroke survivors clear videos to serve as a guide and remind them of the proper way to complete their exercise and interventions for recovery. Repetition and regularity of exercises and activities helps to improve functional outcomes. Neuroplasticity is the term used to describe how the brain is able to growth and change throughout our life spans with each new experience that we have. For example, after a stroke, new neural connections are made as the brain takes in new information and learns how to do tasks after an injury. Encourage clients to participate in repetitive tasks helps to create new neural connections, which allows for acquisition of new skills, recovery from the brain injury, and adapt to changes in the environment.



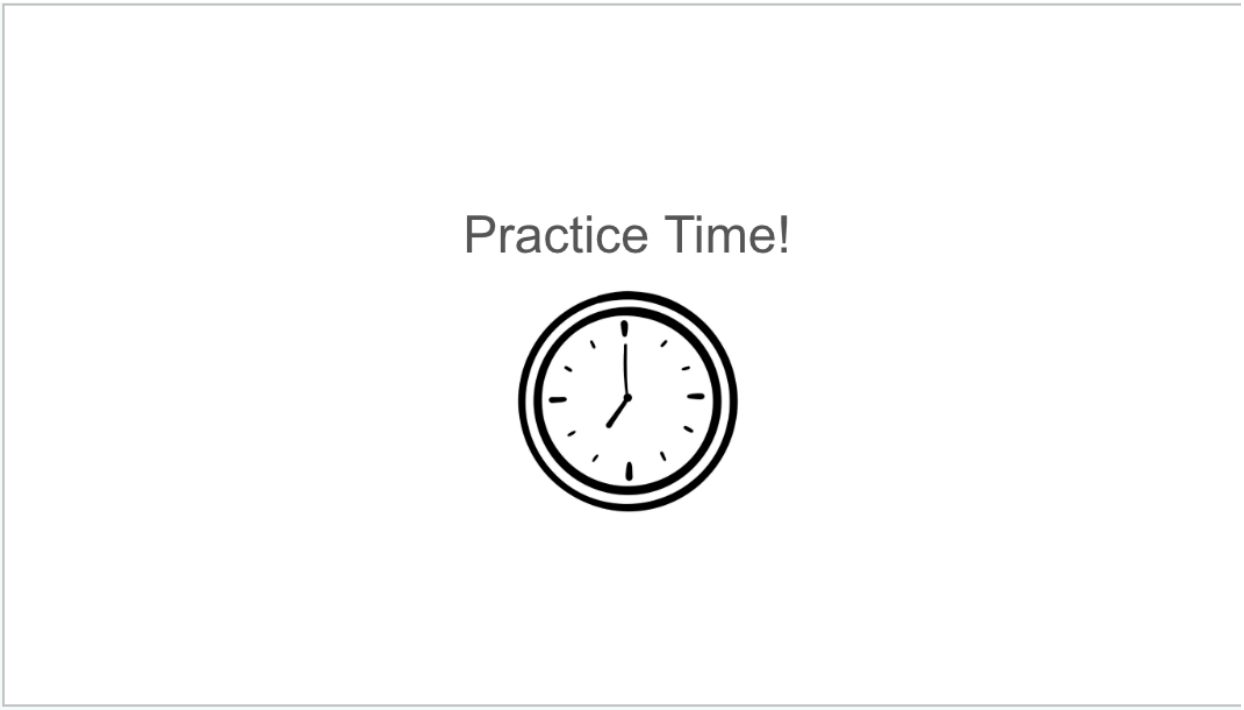
Here is a video of hemiplegic dressing that covers upper body and lower body dressing. This will be available to you to share with stroke survivors that you work with who need to work on dressing skills.



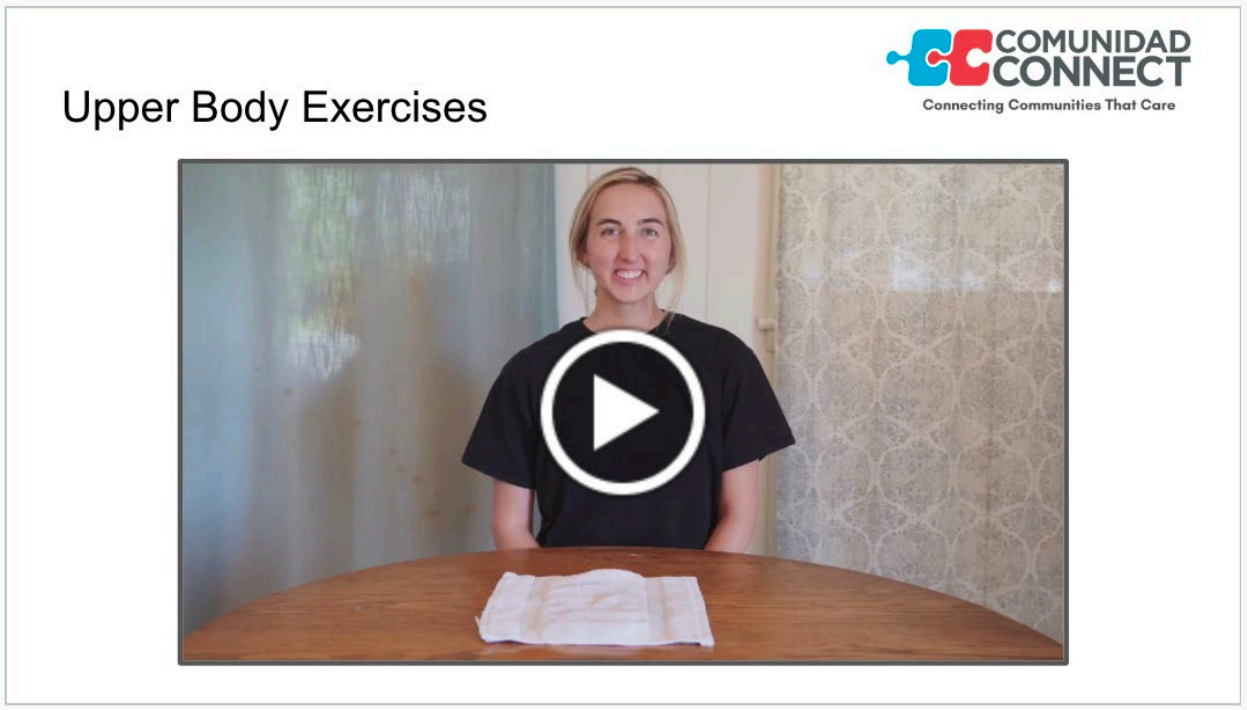
Your turn! We will now practice dressing skills. Please find a partner, and we will use the dressing items that you brought to practice hemiplegic dressing. I will be walking around to observe and answer any questions you might have.



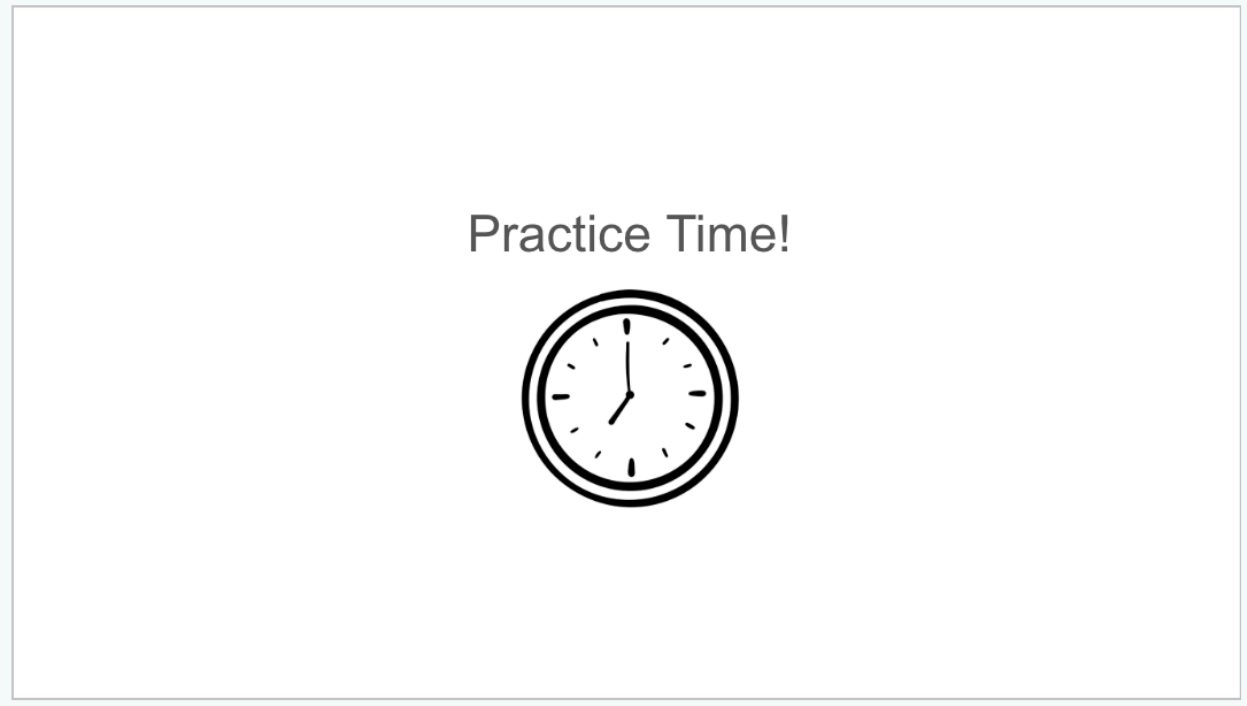
Here is a video of a sequence of lower body exercises that you can share with your clients so that they can follow along and participate in exercises on a daily basis to have as much repetition and regularity of movements as possible.



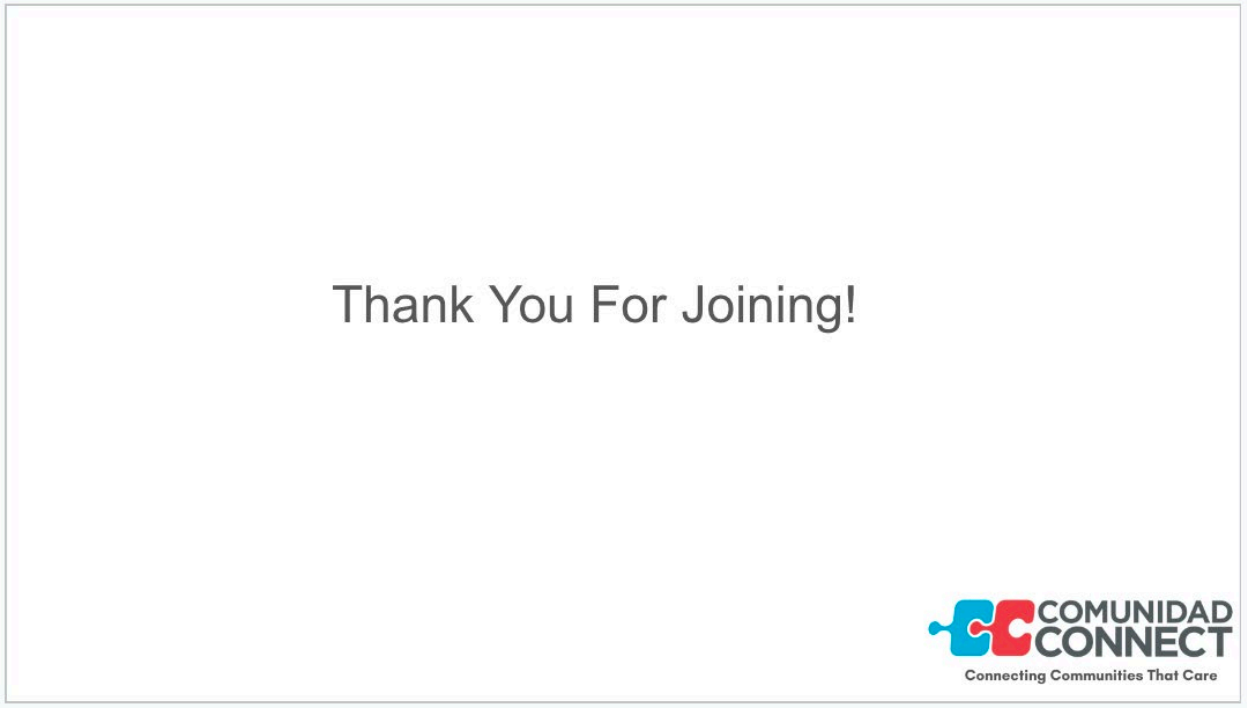
Your turn! We will now practice lower body exercises. Please find a partner, and we will use the exercise items that you brought to practice. I will be walking around to observe and answer any questions you might have.



Here is a video of a sequence of upper body exercises that you can share with your clients so that they can follow along and participate in exercises on a daily basis to have as much repetition and regularity of movements as possible.



Your turn! We will now practice upper body exercises. Please find a partner, and we will use the exercise items that you brought to practice. I will be walking around to observe and answer any questions you might have.



Thank you so much for joining the training session! I will stay to answer any questions!

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Following Slides For Follow-Up Skill Session

COMUNIDAD CONNECT
Connecting Communities That Care

Stroke Stride Rehab Program "Teach the Teacher Day"

Schedule

- 10:00am: Greetings!
  - Please sign in by the door
- 10:15 am: First Teaching Session
- 10:35 am: Second Teaching Session
- 10:55 am: Third Teaching Session
- 11:15 am: Fourth Teaching Session
- 11:35 am: Fifth Teaching Session
- 11:55 am: Sixth Teaching Session
- 12:10 pm: Seventh Teaching Session
- 12:35 pm: Eighth Teaching Session

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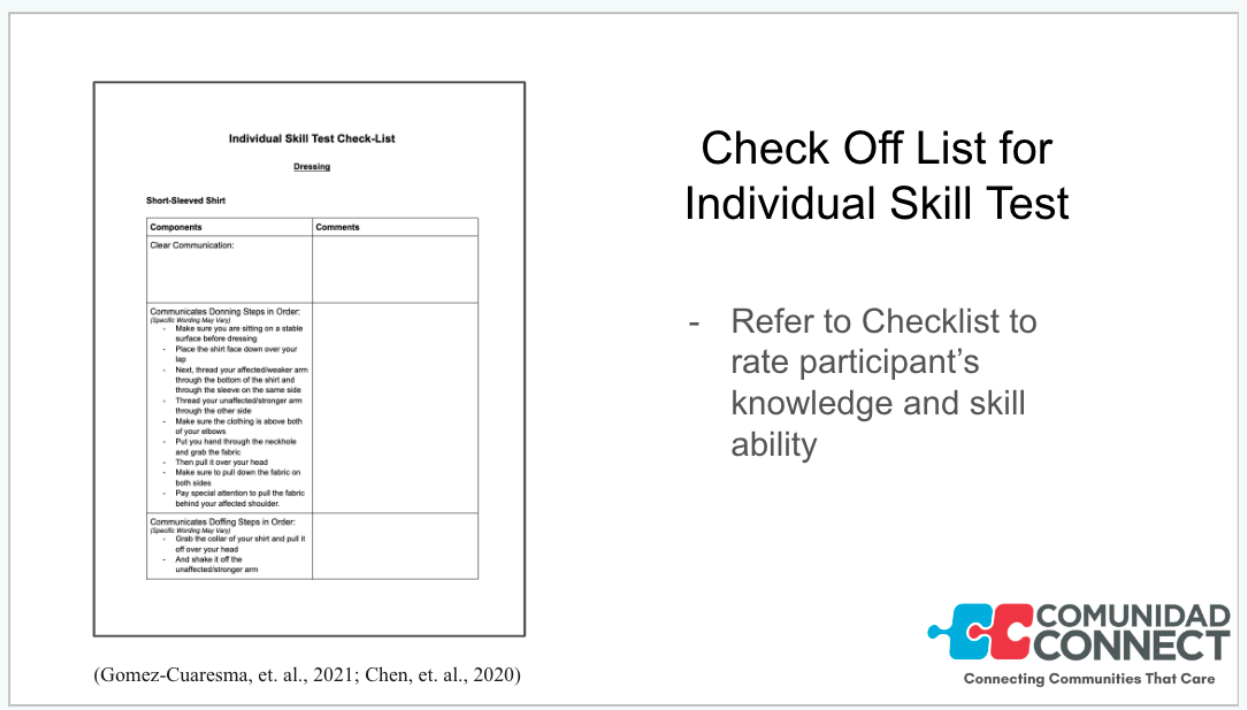

(Gomez-Cuaresma, et. al., 2021; Chen, et. al., 2020)

Training Day Timeline

- 9:00am: Prepare for training session (set up presentation PowerPoint, organize printed handouts, organize task supplies for practicing)
    - Refer to Handouts Sheets
    - Refer to Supplies Sheet
    - Refer to PowerPoint Presentation
- 10:00am: Greet participants as they arrive
    - Have participants sign in as they arrive
- 10:15am: Introduction of educator and training session
    - Hi everyone! My name is _____ and I am an Occupational Therapy Student from _____. Thank you all for attending and being here today. Our training session today will go over basic information of stroke, OT's role with Stroke rehabilitation, importance of participating in daily activities with a stroke, and also provide resource materials. You will see in front of you that you have several items; we will be using these later in the presentation to practice skills that you can teach to stroke survivors to provide them with techniques to complete tasks and exercises to improve their quality of life and increase their mobility.
- 10:20am: Begin presentation
    - Refer to presentation notes
- 10:40am: Transition to practicing dressing tasks
    - Refer to presentation notes
- 10:55am: Transition to upper body exercises

    - Refer to presentation notes
- 11:10am: Transition to lower body exercises
    - Refer to presentation notes
- 11:25am: Wrap up presentation
    - Refer to presentation notes
- 11:30am: Ensure all participants have access to resources for practicing, provide information on training skill test, and close out the training session; stay after for questions
    - Refer to presentation notes
- 12:00pm: Gather supplies and clean them for next training session; clean room and ensure all chairs and tables are placed back to where they belong

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ONE-HANDED DRESSING

Importance of Dressing

- Independence in personal care, including dressing, establishes functional skills for moving on to other physical activities
- Dressing is useful as a therapeutic activity to help regain function, as it helps with: Bilateral function (using both of your arms), Fine Motor tasks, Fatigue, Apraxia, Perceptual Deficits

PRACTICE IS IMPORTANT!

Getting Started

Safety first! Start by sitting on a stable surface before dressing

- Begin practicing the dressing techniques with oversized clothing to learn the steps
- Once you have mastered the steps, then you can move on to clothing that fits you better
- Generally, use your unaffected/stronger arm to dress the affected/weaker side first
- To undress, take the clothing off the unaffected/stronger side first and then remove it from the affected/weaker side
- Remember, repetition is key to improving functional ability and frustration is normal as this is a new skill that you are learning.
- Practicing will help you improve!

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VESTIRSE CON UNA MANO

Importancia del Vestuario

- La independencia en el cuidado personal, incluido el vestirse, establece habilidades funcionales para pasar a otras actividades físicas.
- Vestirse es útil como actividad terapéutica para ayudar a recuperar la función, ya que ayuda con: Función bilateral (usar ambos brazos), tareas motoras finas, fatiga, apraxia, déficits perceptivos.

¡LA PRÁCTICA ES IMPORTANTE!

Comenzando

¡La seguridad es lo primero! Empieza sentándote en una superficie estable antes de vestirte.

- Comienza practicando las técnicas de vestimenta con ropa holgada para aprender los pasos.
- Una vez que hayas dominado los pasos, entonces puedes pasar a la ropa que te quede mejor.
- Generalmente, utiliza tu brazo no afectado/más fuerte para vestir el lado afectado/más débil primero
- Para desvestirte, quita la ropa primero del lado no afectado/más fuerte y luego retírala del lado afectado/más débil
- Recuerda, la repetición es clave para mejorar la capacidad funcional y la frustración es normal, ya que estás aprendiendo una nueva habilidad
- ¡Practicar te ayudará a mejorar!

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HOME MODIFICATIONS

Why make modifications to a home?

- Helps reduce falls and increases safety
- Increases participation in every day activities
- Helps increase independence

Kitchen

- Keep necessary items in plain sight and in easy to reach places
- Adding a card table or a table with a lower surface is useful for individuals using a wheelchair to sit and complete kitchen tasks

Bathroom

- Adding grab bars or rails in the shower is useful for individuals experiencing balance difficulties
- Adding a tub seat or transfer bench is useful to place in the shower for a sitting option for individuals who may get tires standing
- Using pump soap dispensers instead of bar soap is easier to do with one hand
- Toothpaste containers with a flip lid instead of a twist-off lid is easier to do with one hand

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General Modifications

- Move any objects out of walkway areas to avoid falling
- Place most used items in easy to reach places
- Place chairs in areas where you might need to sit and rest
- If using a walker or wheelchair, make sure that they can fit through walkway areas and move any object that is in the way

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MODIFICACIONES EN EL HOGAR

¿Por qué hacer modificaciones en un hogar?

- Ayuda a reducir las caídas y aumenta la seguridad
- Aumenta la participación en las actividades diarias
- Ayuda a aumentar la independencia

La Cocina

- Mantener los elementos necesarios a la vista y en lugares de fácil acceso
- Agregar una mesa plegable o una mesa con una superficie más baja es útil para personas que utilizan silla de ruedas para sentarse y realizar tareas de cocina

El Baño

- Agregar barras de agarre o rieles en la ducha es útil para personas que tienen dificultades de equilibrio
- Agregar un asiento para bañera o un banco de transferencia es útil para colocar en la ducha como una opción de estar sentado para personas que se pueden cansar de estar de pie
- Usar dispensadores de jabón de bomba en lugar de jabón en barra es más fácil de hacer con una sola mano
- Los envases de pasta de dientes con una tapa de voltear en lugar de una tapa de torsión son más fáciles de manejar con una sola mano

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Modificaciones Generales

- Mueva cualquier objeto fuera de las áreas de paso para evitar caídas
- Coloque los objetos más utilizados en lugares de fácil acceso
- Coloque sillas en áreas donde pueda necesitar sentarse y descansar
- Si usa un andador o silla de ruedas, asegúrese de que puedan pasar por las áreas de paso y mueva cualquier objeto que esté en el camino

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ADAPTIVE EQUIPMENT

Why use adaptive equipment?

- Helps increase safety
- Useful for individuals with limited mobility on one side
- Useful for individuals who may not be able to make a tight, full fist
- Increases participation in every day activities
- Helps increase independence

Kitchen

- Garlic press
- Dicer/food chopper
- Adaptive cutting boards (can also make yourself)
- Adaptive knives
- Kitchen tools with bigger handles (can use duct tape to build handles up)
- Can use cabinet shelf liner for putting bowls, plates, or cups on to keep from moving while preparing a meal or eating

Bathroom

- Toothbrush or hairbrush with bigger handles (can use duct tape to build handles up
- Tongs to hold toilet paper to reach behind you for toileting which is useful for individuals with limited reach

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Other Adaptive Equipment

- Reacher is useful for individuals with limited mobility to reach objects
- Sock aid is useful for individuals with limited mobility to put on their socks (you can make your own sock aid using either a towel or a plastic bag)

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EQUIPO ADAPTATIVO

Por qué usar equipo adaptativo?

- Ayuda a aumentar la seguridad
- Útil para personas con movilidad limitada en un lado
- Útil para personas que pueden no ser capaces de cerrar el puño con fuerza
- Aumenta la participación en actividades diarias
- Ayuda a aumentar la independencia.

La Cocina

- Prensa de ajos
- Picador/cortador de alimentos
- Tablas de cortar adaptativas (también se pueden hacer caseras)
- Cuchillos adaptativos
- Utensilios de cocina con mangos más grandes (se puede usar cinta adhesiva para aumentar el tamaño de los mangos)
- Se puede usar revestimiento de estantería de gabinete para colocar cuencos, platos o tazas y evitar que se muevan mientras se prepara una comida o se come.

El Baño

- Cepillo de dientes o cepillo para el cabello con mangos más grandes (se puede usar cinta adhesiva para aumentar el tamaño de los mangos)
- Pinzas para sostener el papel higiénico durante el uso del baño, lo cual es útil para personas con alcance limitado.

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Otros Equipos Adaptativos

- El "reacher" es útil para personas con movilidad limitada para alcanzar objetos
- La "sock aid" es útil para personas con movilidad limitada para ponerse los calcetines (se puede hacer una "sock aid" casera usando una toalla o una bolsa de plástico).

Appendix D: Scripts for Videos

Long-Sleeved Button-Up Shirt

Steps:

Donning:

First, grab the collar of your shirt to locate the front and back side
Hold it in front of you so you are looking into the shirt
You should be able to see the tag from this view
Lay the shirt in your lap with the opposite side sleeve hanging in between your legs
From this position, thread your affected/weaker arm in the sleeve on the opposite side
Find the collar and pull the sleeve all the way up to the shoulder
Keep your grasp on the collar and pull your shirt around the back
Thread your unaffected/stronger arm through the sleeve
Then fasten the buttons

Doffing:

Grab the collar of your shirt and pull it off over your head
And shake it off the unaffected arm
And then pull off the other sleeve of the affected arm with your unaffected arm

Spanish: La Camisa de mangas largas
Ponerse:
Primero, agarre la camisa por el cuello para ubicar el lado delantero y trasero.
Guárdelo delante de usted para que está mirando en la camisa.
Debe ser capaz de ver la etiqueta de esta vista.
Ponga la camisa en su regazo con la manga opuesta colgando entre sus piernas.
De esta posición, ponga su brazo afectado en la manga del lado opuesto.
Ubique el cuello y tire de la manga hasta el hombro.
Mantenga su agarre en el cuello y tire de la cabeza alrededor de su espalda.
Ponga el brazo no afectado por la otra manga.
Fije los botones.
Quitarse:
Desabroche los botones.
Agarre el cuello y jalelo hacia arriba de su cabeza.

Sacudala del brazo no afectado.
Jale la manga del brazo afectado con el brazo no afectado.

Pants

Steps

Donning:

While seated on a firm surface, take your affected leg and cross your ankle over the opposite knee
Thread your affected leg through the appropriate pant leg
Once over your ankle, you can thread the fabric up over your knees
Thread your unaffected leg through the other pant leg
Pull both sides up as high as you can
Make sure you are not stepping on the fabric before standing up
Now, carefully stand up, and continue pulling the fabric over your hips
If your balance is unsteady, make sure you are not at risk from slipping when you stand
You can consider slide on slippers with soles with traction or put your socks and shoes on before standing.

If your pants have a zipper, manage your zipper first, then fasten the button.

Doffing:

Reverse order

Spanish: Los pantalones
Ponerse:
Mientras está sentado en un silla firme, tome la pierna afectado y crúcela con el tobilla encima de la rodilla opuesta.
Ponga la pierna afectada por la pierna de pantalón apropiada.
Una vez sobre el tobillo, ponga la tela sobre la rodilla.
Ponga la pierna no afectada por la otra pierna de pantalón.
Jale ambos lados hacia arriba lo más alto que pueda.
Asegúrese que no está pisando encima de la tela antes de levantarse.
Ahora, levántese con cuidado y continúe tirando de la tela sobre sus caderas.
Si su equilibrio es inestable, asegúrese que no hay riesgo que de resbalar cuando levantarse
Pueda considerar la posibilidad de ponerse las pantuflas con suela con tracción o los calcetines y zapatos antes de levantarse.

Si los pantalones tienen una bragueta, hagalo primera, luego fije el botón

Quitarse:
En la orden opuesto

Short-Sleeved Shirt

Steps:

Donning:

Make sure you are sitting on a stable surface before dressing
Place the shirt face down over your lap
Next, thread your affected/weaker arm through the bottom of the shirt and through the sleeve on the same side
Thread your unaffected/stronger arm through the other side
Make sure the clothing is above both of your elbows
Put you hand through the neckhole and grab the fabric
Then pull it over your head
Make sure to pull down the fabric on both sides
Pay special attention to pull the fabric behind your affected shoulder.

****VARIATION****

Use the unaffected arm to thread the affected arm through the shirtsleeve
Pull the shirt up and grab on to the neck hole and pull it over your head
Straighten the shirt out
Put your other arm in the other sleeve
And be mindful to straighten the shirt in the front and back

Doffing:

Grab the collar of your shirt and pull it off over your head
And shake it off the unaffected/stronger arm
And then pull off the other sleeve of the affected/weaker arm with your unaffected/stronger arm

Spanish: La camiseta

Ponerse:

Siente en una silla estable antes de comenzar.
Ponga la camiseta boca abajo sobre su regazo.
Luego, pase el brazo afectado por la parte inferior de la camiseta y por la manga del mismo lado.
Pase al brazo no afectado por la manga del otro lado.
Asegúrase de que la ropa esté por encima de ambos codos.
Ponga la mano por el agujero del cuello y agarre la tela.
Luego, jalelo sobre su cabeza.
Jale la tela de ambos lados.
Presta especial atención a tirar de la tela detrás del hombro afectado.

Variación:
Use el brazo no afectado para poner el brazo afectado por la manga.
Jale la camiseta hacia arriba y agarre el agujero del cuello y jalelo sobre su cabeza.
Ajuste la camiseta
Ponga el brazo no afectado por la otra manga.
Ajuste la camiseta en la parte delantera y trasera.

Quitarse:
Agarre el cuello y jalelo hacia arriba de su cabeza.
Sacudala del brazo no afectado.
Jale la manga del brazo afectado con el brazo no afectado.

Socks

Steps:

While seated on a firm surface, take your affected/weaker leg and cross your ankle over the opposite knee
Grab your sock and with the heel facing down, insert your hand into the opening of the sock.
Spread your fingers and thread the sock over the foot, and adjust as needed.
You can stay in this position to don your shoes.
Then, carefully lower your leg down to the ground
You can repeat the same steps for the opposite leg

Spanish: Los calcetines y los zapatos

Mientras está sentado en un silla firme, tome la pierna afectado y crúcela con el tobilla encima de la rodilla opuesta.
Agarre el calcetín y con el talón hacia abajo, introduce la mano en la abertura del calcetín.
Separe los dedos y pasa el calcetín sobre el pie. Ajústalo según sea necesario.
Pueda quedarse en esta posición para ponerse los zapatos
Luego, con cuidado, baje la pierna al suelo.
Repita los mismos pasos por la otra pierna.

Shoes

Steps

You can start by positioning your foot on a stool or chair
Cross one shoelace over the other and tie a knot
Use your other foot to step over the shoe lace on the side to hold it tight
Then, take the opposite shoe lace, pull it in the opposite direction to tighten the knot
Take the loose end and thread it under and around the tight shoe lace to create a small loop
Curl your fingers towards the center of the shoelace and create another small loop over the top of your finger
Thread this loop through the first loop you created
Pull the loop through to tighten the knot
Release the other side and take the tail end to thread it back through the same knot
Stabilize one loop and pull on the other loop to tighten the knot until the knot is tightened to where it will not slip undone

Spanish: Amarrar sus zapatos con una mano

Comience con su pie en un taburete o una silla.
Cruce un cordón sobre el otro y haga un nudo.
Use el otro pie para pasar por encima del cordón en el lado para mantenerlo apretado.
Luego, tome el cordón opuesto y jala de él en la dirección opuesta para apretar el nudo.
Tome el extremo suelto y enrósalo debajo y alrededor del cordón apretado para crear un pequeño anillo.
Doble los dedos hacia el centro del cordón y crear otro pequeño anillo sobre la parte superior del dedo.
Enhebra este anillo a través del primer anillo que creó
Jala el anillo para apretar el nudo.
Suelte el otro lado y tome el extremo para volver a pasarlo por el mismo nudo.
Estabilice un anillo y jala el otro anillo para apretar el nudo hasta que estén bien apretados.

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