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THE BENEFITS OF COMMUNITY-BASED RECREATIONAL THERAPY FOR INDIVIDUALS WITH INTELLECUTAL AND DEVELOPMENTAL DISABILITES IN LOW RESOURCE COUNTRIES AND COMMUNITIES

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ABSTRACT

This literature review and synthesis has two goals. The first is to discuss the benefits of recreational therapy for individuals with intellectual and developmental disabilities (IDD). These benefits can include social, emotional, physical, psychological, behavioral, cognitive and/or communication skills for individuals with IDD. The second goal is to discuss how community-based recreational therapy can be applied specifically to low resource countries and communities, with benefits to individuals with IDD and the community at large. The hypothesis of the thesis is as follows: If community-based recreational therapies are incorporated into low resource countries and communities, then accessibility, availability, affordability, and acceptability for individuals with IDD in these areas will increase and social, emotional, physical, psychological, behavioral, cognitive, and communication skills will improve.

Chapter 2 describes five types of recreational therapy: nature-assisted therapy, music therapy, art therapy, dance and performance therapy, and sports recreation therapy. There is an abundance of evidence-base to show that these recreational therapies benefit individuals with IDD. In addition, there are two components that bring about increased success to recreational therapies, specifically in low resource countries and communities: integration and community participation and acceptance. Chapter 3 explains the four barriers to service provision in low resource countries and communities: geographic access, service availability, service affordability, and acceptability. Using these barriers, community-based recreational therapies are proposed as a potential solution to those barriers. This chapter provides examples of successful community-based recreational therapies in low resource countries and communities to validate the claims made.

Future research that involves the implementation of a community-based recreational therapy program in a low resource community or country is needed. This research must involve directly working with the community at hand and discussing with the community their thoughts on community-based recreational therapy and how to successfully implement it. Though further research needs to be conducted with the actual implementation of one of these programs, this thesis helps to show the practical implications and promise of this type of intervention in the future for the benefit of individuals with IDD in low resource communities and countries.

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CHAPTER 1: INTRODUCTION

Objectives and Hypothesis

This literature review and synthesis has two overall goals. The first is to discuss the benefits of recreational therapy for individuals with intellectual and developmental disabilities (IDD). These benefits can include social, emotional, physical, psychological, behavioral, cognitive and/or communication skills for individuals with IDD. The second goal is to discuss how community-based recreational therapy can be applied specifically to low resource countries and communities, with benefits to individuals with IDD and the community at large. Chapter 2 of this thesis will focus on outlining the different types and benefits of recreational therapy for individuals with IDD. Chapter 3 will outline the barriers to care for individuals with IDD in low resource countries and communities and how community-based recreational therapy can serve to alleviate some of those barriers. The final chapter will serve to conclude the thesis and discuss the implications for further research in this area. With these objectives and goals in mind, my hypothesis for this thesis research is as follows: If community-based recreational therapies are incorporated into low resource countries and communities, then accessibility, availability, affordability, and acceptability for individuals with IDD in these areas will increase and social, emotional, physical, psychological, behavioral, cognitive, and communication skills will improve.

In recent years, there has been a push from the American Speech-Language-Hearing Association (ASHA) for interdisciplinary and transdisciplinary teams in service delivery and

interprofessional practice (ASHA, n.d.). According to ASHA, team-based services between professionals in different fields, like occupational therapy, physical therapy, education, and recreational therapy, allow for collaboration between many different perspectives to benefit the individuals served. Interdisciplinary teams involve individuals from various fields collaborating to set goals and determine intervention priorities. Transdisciplinary teams involve collaboration between different professions as well, but places more of an emphasis on blending professional boundaries and working jointly as a unit. Many times role release occurs, with responsibilities being shared between and across disciplines. Interprofessional practice involves various professions learning about, from, and with other professionals to enable effective collaboration and improve outcomes for individuals served (ASHA, n.d.). In this thesis, a major emphasis is placed on interdisciplinary and transdisciplinary teams in service delivery and interprofessional practice, specifically between speech language pathologists and recreational therapists to best benefit individuals with IDD in low resource countries and communities.

Further, though recreational therapy tends to be seen in a more western frame, the theoretical principals behind it have promise for individuals with IDD in low resource countries and communities as well. In this thesis, research of recreational therapy benefiting individuals with IDD in the United States are interspersed amongst research of the barriers for care in low resource countries and communities and the benefits of community-based interventions in these areas. The nature of this paper is rather theoretical, however some successful examples in low resource countries and communities, shows promise to the practical implications of it. This concept will be touched more in detail in the final conclusion chapter of this thesis.

Rationale

According to the World Health Organization's World Report on Disability, around one billion people, 15% of the global population, live with a disability (WHO, 2011). Of those one billion people with disabilities, around 80% reside in developing countries (Nuñez, 2015). Specifically, for individuals with intellectual disabilities, research shows that in low and lower-middle income countries the prevalence ranges between 0.09% and 18.3% (Maulik & Darmstadt, 2009). Due to some of the barriers addressed in Chapter 3 of this thesis, access to therapy for individuals with IDD can be limited in low resource countries and communities. Without access to proper therapy, the overall development of social, emotional, physical, cognitive and communication skills for individuals with IDD can be restricted, making it difficult for individuals with IDD to be active members of their communities.

There has been research conducted about the positive aspects of using community-based interventions as an alternative in these areas (Njelesani, 2011). Community-based recreational therapy, a specific type of community-based intervention, may be an easily implemented solution to the obstacles of obtaining services for individuals with IDD. Using integration to promote inclusion and recreational therapy as a means of teaching social, emotional, physical, psychological, behavioral, cognitive, and communication skills could be a financially reasonable supplement or alternative to clinical and medical therapy. Promotion of this type of therapy in low resource countries and communities could increase the livelihood of individuals with IDD in these areas, and the community at large, in multiple ways.

Important Definitions

This research cites many specific definitions that are important to understanding the concepts outlined. Though many organizations define these terms in different ways, the definitions selected best align with the concepts presented in this thesis.

Disability

For the purpose of this thesis, the definition of disability supplied by the World Health Organization's (WHO, 2011) World Report on Disability and the Convention on the Rights of Persons with Disabilities will be used. In the preamble to the CRPD, disability is defined as resulting from "the interaction between persons with impairments and attitudinal and environmental barriers that hinder their full and effective participation in society on an equal basis with others" (pg. 4, WHO, 2011). In this definition, disability is not viewed as an attribute someone can possess, but more so a condition or situation a person must confront. A diagnosis of having a disability is not purely medical. Many other factors influence an individual with a disability, besides just their diagnosis. The environment in which an individual with a disability lives in has a major effect on their quality of life. This key point is especially important when considering the impacts of disability on a global scale.

In addition to the World Report on Disability, WHO created the International Classification of Functioning, Disability and Health (ICF), as a framework for measuring and classifying health for individuals and populations (ICF, n.d.). The ICF has three general models related to the views and how best to address disability; (1) the medical; (2) social; (3) and rehabilitation models of disability. These models are beneficial in understanding the reasoning

behind intervention strategies for individuals with disabilities. The first model, the medical model, emphasizes that disability is caused by a medically-based etiology. This model stresses the importance of medical care when supporting an individual with a disability. The second model is the social model, which emphasizes how having a disability is a natural aspect of life. For treatment and therapy, this model stresses the importance of the individual with the disability making decisions about their care for themselves. The third model, similar to the medical model, is the rehabilitation model, which is commonly used in low resource communities. The main goal of this model is to rehabilitate individuals with disabilities back into society, with not only the help of doctors, but also the help of social workers, educators, and the community (ICF, n.d.). For this thesis, the social model and rehabilitation model are the most emphasized, specifically the rehabilitation model's emphasis on community support.

Developmental Disabilities

According to the Center for Disease Control and Prevention (CDC), developmental disabilities are groups of conditions due to impairments in learning, language, physical, and/or behavioral areas (CDC, n.d.). These conditions, which occur during the developmental period, usually have an impact on daily functioning and last throughout an individual's lifetime. The term "developmental disabilities" is seen as an umbrella term that includes intellectual disability, but also includes other disabilities apparent in childhood such as cerebral palsy (AAIDD, n.d.). For example, an individual can have a developmental disability, but that does not mean they have an intellectual disability. In reverse, all individuals with intellectual disabilities have a developmental disability (AAIDD, n.d.).

Intellectual Disability

According to the American Association on Intellectual and Developmental Disabilities, to be considered to have an intellectual disability, three criteria must be met (AAIDD, n.d.). The first criterion is limitations in intellectual functioning, which refers to general mental capacity, like reasoning, learning, or problem solving. The most commonly used methods to measure impairments in intellectual functioning are IQ tests. A score of below 70 typically is considered to indicate a limitation in intellectual functioning. The next criterion of this definition refers to limitations in adaptive behavior. The AAIDD cites three domains of adaptive behavior, conceptual, social, and practical. Conceptual skills refer to skills such as language, literacy, time, self-direction, or number concepts. Social skills refer to skills like self-esteem, interpersonal skills, social responsibly, the ability to follow rules/obey laws and to avoid being victimized, and social problem solving. The last skill group, practical skills, refers to activities of daily living, healthcare, occupational skills, schedules, travel, safety, and use of money and the telephone. The final criterion used to determine intellectual disability is the age of onset. For intellectual disabilities, onset must occur during the developmental period, which in the United States, is before the age of 18 (AAIDD, n.d.).

Intellectual and Developmental Disorders (IDD)

Throughout this thesis, I will use the acronym "IDD," which stands for intellectual and developmental disabilities. According to the National Institute of Health Eunice Kennedy Shriver national Institute of Child Health and Human Development (NICHD), IDD is present when an individual has an intellectual disability that is developmental in nature (NIH, n.d.). For example,

disorders of the nervous system affect the brain, spinal cord, and nervous system functioning, which may affect learning and intelligence. These conditions can also include other problems, like seizures, movement issues, behavioral disorders, and/or speech and language disorders. Examples of IDDs affecting the nervous system are Down syndrome, Fragile X syndrome, cerebral palsy, and autism spectrum disorder (NIH, n.d.). However, not all individuals with cerebral palsy or autism spectrum disorder have an intellectual disability. As stated above, an individual can have a developmental disability, but that does not mean they have an intellectual disability, but all individuals with intellectual disabilities have a developmental disability (AAIDD, n.d.). The basis of my thesis is focused on individuals who have IDDs, meaning those that have both an intellectual and developmental disability, unless otherwise stated.

Communication Disorders

A communication disorder is "an impairment in the ability to receive, send, process, and comprehend concepts or verbal, nonverbal and graphic symbol systems" (ASHA, n.d.). Communication disorders affect speech, hearing, and/or language and can range from a mild to a more profound condition. A communication disorder can co-occur with another type of disability or occur on its own. There are four main types of communication disorders, hearing, speech, language, and auditory processing disorders. Examples of hearing disorders are deafness and hard-of-hearing. Examples of speech disorders are articulation, fluency, and voice disorders. Examples of language disorders include problems with phonology, morphology, syntax, semantics, and pragmatics. Auditory processing disorders are impairments in information processing of audible signals that cannot be attributed to an intellectual impairment or a peripheral hearing sensitivity. (ASHA, n.d.). Though communication disorders are not the sole

focus of my thesis, they play an integral role in the lives of individuals with IDD and can be benefited by recreational therapy.

Recreational Therapy

According to the American Therapeutic Recreation Association, recreational therapy is a type of intervention technique that uses recreation and activity-based interventions to address the needs of different clients, with the goal of recovery and well-being (ATRA, n.d.). Many individuals with disabilities use recreational therapy as a rehabilitation tool to decrease daily life restrictions and to promote independence. Recreational therapy focuses on individual's physical, psychological, behavioral, cognitive, social, emotional, and leisure development, in addition to increasing medical health. Recreation activities, like nature, music, art, dance and performance, and sports, are used to tailor therapy to specific clients in an engaging platform, while also teaching important concepts to improve an individual's development (ATRA, n.d.). This type of intervention will be the focus of my research and will be more thoroughly explained in Chapter 2.

Low Resource Countries and Communities

The focus for this thesis is in low resource countries and communities. The second chapter, about recreational therapy, has research from countries all over the world, not solely low resource countries and communities, to show in general the benefit these types of therapies can have for individuals with IDD. The third chapter of this thesis, however, focuses solely on low resource countries and communities. I compiled research for this section from various low resource countries and communities, rather than targeting just one country. I understand that

these communities and countries are naturally very different in many ways, culturally, linguistically, spiritually, and so forth. However, one of the key strengths of a recreational therapy approach is that the choice of the type of recreational therapy can be tailored specifically to the unique cultural characteristics of each community. Showing the breadth of how recreational therapies can benefit diverse low resource communities and countries illustrates that recreational therapies may have benefit across areas. In addition, available research is oftentimes limited for recreational therapies in low resource communities and countries, so there was overall less research to select from. These two points will be discussed in more detail in Chapter 3.

Methodology

Multiple research studies were collected and analyzed for common themes related to recreational therapy, individuals with IDD, low resource countries and communities, and the connections between all of them. A literature review was conducted to determine the benefits of recreational therapy for individuals with IDD and components that make recreational therapy successful. This information is outlined in Chapter 2 of my thesis. In Chapter 3, outside research, resources, and knowledge are used to discuss the barriers to medical care in low resource countries and communities. Then, using this information, the ways that community-based recreational therapies may mediate some of the barriers in low resource countries and communities for individuals with IDD are discussed. Community wide benefit of recreational therapy in low resource countries and communities will also be addressed. The final chapter of this thesis will serve as a discussion and conclusion of the information from this thesis.

Bracketing Statement

There are two main reasons why I chose this specific topic for my research. The first is because of the opportunities I have been given at the Pennsylvania State University to become an active member of the disability community. While at Penn State, I have had the opportunity to join many organizations with a focus on individuals with IDD inclusion and acceptance. The most impactful of all the clubs has been Harmony, a performing arts organization for children and adults with and without IDD. Each week, rehearsals are held and tailored with the goal of promoting social, emotional, physical, cognitive and communication skills to our one hundred students and volunteers. Harmony is open to all individuals with an IDD or not, in order to promote integration. As instructor for this organization, I have seen the benefits Harmony has had on our students and volunteers alike. I have seen student's social, emotional, physical, cognitive and communication skills blossom in an environment they love to be in every single week.

I also have had the opportunity while at Penn State to take the class CSD 497: Communication through Performance. The goal of this class is to teach how communication skills can be taught through performance techniques, like improvisation, singing, and dancing. This integrated classroom for individuals with IDD and without, teaches social, emotional, physical, cognitive and communication skills, while being engaging for all participants. Again, through this environment I could easily see the progress made not only in the individuals with IDD, but in the individuals without IDD.

The second main reason I chose this specific research topic is due to my interest in global health and education, which lead me to obtain a minor in Global Health. Throughout my time at

Penn State, I have been fortunate to have the opportunity to travel all over the world, to South America, Europe, Asia, and Africa, through different Penn State programs. The most recent trip I have taken was to Tanzania during the summer of 2019 for the Penn State Global Health minor fieldwork placement. I have witnessed over the past four years of travel the challenges faced by individuals with IDD all over the world. While in Tanzania, my Global Health minor cohort worked in two different rural villages outside of Dodoma shadowing nursing students giving mental health assessments to community members. Throughout the entire trip, we continued to learn more about the obstacles to accessing medical care and therapies for all in these low resource areas, especially for individuals with IDD.

Though witnessing these obstacles to therapy for these individuals with disabilities was difficult, it made me want to find some therapy that could benefit these individuals at low cost that was easy to implement. After reading and analyzing outside research and seeing how effective community-based recreational therapy can be through my own personal experiences, my research topic came into scope. I hope to use this thesis to inspire further research into the benefits of recreational therapy for individuals with IDD in low resource countries and communities. I also hope to use my thesis to promote the benefits of integration in therapy, and how these recreational therapies can not only benefit the individuals with disabilities, but the community as a whole.

Summary

This first chapter has a few key takeaways. The first is that the field of Communication Science Disorders relies on interdisciplinary and transdisciplinary teams in service delivery and interprofessional practice (ASHA, n.d.). Second, the definitions listed above will serve as the

definitions used throughout this thesis. The final takeaway is that this thesis is theoretical in nature. This thesis includes evidence base and research to validate the argument that recreational therapy is particularly suited to be successful in providing culturally-appropriate experiences for individuals with IDD in in low resource countries and communities. Research on how recreational therapy benefits individuals with IDD in the United States are considered alongside research of the barriers for care in low resource countries and communities and the benefits of community-based interventions in these areas.

CHAPTER 2: RECREATIONAL THERAPY

The Main Types of Recreational Therapy

Table 2 lists the main types of recreational therapy used for this thesis and the benefits they have for individuals with IDD. Though there are a plethora of other recreational therapy activities, the selected ones below have the best fit for the purpose of illustrating how recreational therapies can benefit individuals with IDD in low resource countries and communities. This table also emphasizes the evidence base for this type of therapy. Recreational therapy is not a "therapy alternative," it is a type of therapy with sound evidence and research backing its value, specifically for individuals with IDD.

Table 1: Main Types of Recreational Therapy

Type	Benefits	Evidence Base
Nature Assisted Therapy	• Receptive and expressive language • Teamwork • Understanding of verbal cues • Goal setting • Emotional well-being • Sociability • Cooperation • Self-control • Assertion • Self confidence • Responsibility • Self-determination • Self-advocacy	• Annerstedt et al, 2011 • Duvall et al, 2014 • Grenier et al, 2008 • Hajjar et al, 2019 • Kim et al, 2012 • McGuire et al, 2008 • Simson et al, 2006

Music Therapy	• Communication (articulation, prosody, intonation, breathing, vocalization, receptive language) • Vocabulary • Memory • Language comprehension • Self-expression • Interpersonal relationships • Sociability • Behavior regulation • Motivation • Perspective taking • Awareness of social cues • Nonverbal communication • Cognition	• Edgerton, 1994 • Corbett et al, 2014 • Geist et al, 2008 • Katagiri, 2009 • Kim et al, 2009 • Silverman, 2008 • Simpson et al, 2011 • Zoller et al, 1991
Art Therapy	• Acceptance of change • Self-expression • Interpersonal relationships • Sociability • Decreased internalizing and externalizing behaviors • Emotional expression and regulation • Empathy • Cognition	• Edwards, 2004 • Epp, 2008 • Freilich et al, 2010 • Gilrane-McGarry et al, 2007 • Got et al, 2008 • Martin, 2009 • Schlein et al, 1993
Dance and Performance Therapy	• Mind-body awareness • Physical fitness • Communication • Self-expression • Integration of sensory-motor systems • Sociability • Nonverbal communication • Creativity • Spatial awareness • Emotional well-being • Self-other distinction • Behavior regulation • Stress management skills • Adaptive skills • Purpose	• Balonen-Rosen, 2017 • Corbett et al, 2014 • Corbett et al, 2016 • Dickinson et al, 2018 • Edgerton et al, 1994 • Koch et al, 2015 • Nelson et al, 2017 • Scharoun et al, 2014 • Zoller, 1991

	• Achievement • Self-relating • Community connections	
Sports Recreation Therapy	• Physical fitness • Self esteem • Social competence • Social inclusion • Emotional well-being • Interpersonal skills • Friendship building • Cooperation • Communication • Creative expression • Development of self-identity • Life satisfaction • Reduction in maladaptive behaviors	• Dykens et al, 1998 • Murphy et al, 2008 • McConkey et al, 2013 • Dattilo et al, 2016 • Dismuke, 1981 • DePauw, 1986

Nature-Assisted Therapy

The first of the five main types of recreational therapy are nature-assisted therapies. As stated in Annerstedt & Wahrborg (2011), the overarching goal of nature-assisted therapy is to use the outdoor environment, natural materials, and/or plants to rehabilitate, promote recovery, or treat various types of illnesses, disorders, or disabilities. Nature-assisted therapy includes two subcategories: natural environment therapy and horticultural therapy. Natural environment therapy focuses on connecting patients with the outside world around them, while horticultural therapy, commonly referred to as "gardening therapy," is focused on the art and science of plant care (Annerstedt & Wahrborg, 2011).

Natural environment therapy focuses broadly on the use of wilderness and outdoor adventure to improve overall wellbeing of the participants (Annerstedt et al, 2011). According to Beringer and Martin (2003), wilderness activities have a goal of promoting connection with the

natural world and are held in calming environments, like a garden, beach, or forest. Adventure therapies are more challenge-based, with the goal of creating interactive opportunities for participants to step outside their comfort zones (Herbert, 1996). Some examples of adventure therapy are backpacking, canoeing, biking, caving, camping, hiking, community service trips, and group problem solving activities (Herbert, 1996). These programs can be performed in a group setting or individualized, depending on the preferences and needs of the patient (Herbert, 1996).

Natural environment therapy has been shown to have benefit on individuals with IDD (Annerstedt et al, 2011; Grenier, Rodgers, & Iarrusso 2008; Wilson & Christensen, 2012). One area this therapy helps to promote is communication skills (Grenier et al, 2008; Hajjar, McCarthy, Benigno, Montgomery, Chabot, & Boster, 2019). According to Greiner, Rodgers, and Iarrusso (2008), natural environment therapy can help improve receptive and expressive communication skills. For example, while working with a group of individuals to complete an adventure task, like moving people across an area without touching the ground, individuals have to use good receptive and expressive communication skills to be successful. Understanding of verbal cues can also be increased through adventure therapy (Greiner et al, 2008). When climbing a rock wall, an individual must respond to questions, as well as prompt ones themselves, to know if their belayer is ready to hold them safely. Similar findings were also seen in the study by Hajjar, McCarthy, Benigno, Montgomery, Chabot, and Boster (2019), who found that five participants with complex communication needs participating in kayaking lessons saw improvements in communication opportunities and skills.

Natural environment therapy also has impact on emotional wellbeing, quality of life, and social interactions (Greiner et al, 2008; Hajjar et al, 2019; McGuire & McDonnell, 2008; Wilson et al, 2012). In a study conducted by Wilson & Christensen (2012) to determine the relationship between outdoor recreation and depression rates in individuals with disabilities, rates of depression were lower in individuals who participated in some form of outdoor recreation. Even though these findings were the case, fewer individuals with disabilities participated in outdoor recreation compared to the general public, due to accessibility limitations (Wilson et al, 2012). Adventure therapy has also seen improvements in self-determination and self-advocacy, according to a study by McGuire and McDonnell (2018) on 47 individuals aged 15-21 with intellectual disabilities. Adventure therapy also helps individuals with disabilities learn to work on goal setting and achieving, which has benefit to overall quality of life (Greiner et al, 2008). One day, an individual may be ready to go on a zip line and another day may not be ready. It is the choice of the individual to set their goals and to take the necessary steps to achieve them. These skills were noticed at a high school in New Hampshire, which successfully implemented an integrated adventure curriculum for high school students with and without Down syndrome (Grenier et al, 2008). Further, in the study by Hajjar et al (2019), the five individuals who participated in the kayaking lessons also saw improvements in social interactions with family and friends.

Horticultural therapy focuses mainly on using plants for therapeutic benefit (Annerstedt et al, 2011). According to Annerstedt et al (2011), this type of therapy is mainly conducted in a specific therapy garden, commonly referred to as horticultural therapy gardens, therapeutic gardens, and rehabilitation gardens. Individuals have the opportunity to plant their own flowers,

vegetables, fruits, and trees. Then, these individuals must continuously take care of their plants and have the opportunity to watch them grow and flourish. These gardens are specifically designed for patient care. Other types of gardens, like healing, meditation and restoration gardens, are types of gardens are not specifically designed for therapeutic use, but can be used as a calming space for patients to go when feeling stressed or over stimulated. These activities can be individualized or in group settings, depending on the therapeutic needs of the patient or patients (Annerstedt et al, 2011).

Horticultural therapy also has been proven to have positive effects on individuals with IDD (Kim, Park, Song, & Son, 2012; Simson & Straus, 2016). One specific area that can be improved through the use of horticultural therapy is sociability. A study conducted by Kim, Park, Song, and Son (2012) on children with intellectual disabilities saw improvements in sociability for the individuals with disabilities compared to the control group. These findings were also seen in a prior study in South Korea on the effects of horticultural therapy on children with intellectual disabilities (Kim et al, 2012). As discussed in Kim et al (2012) during horticultural therapy, interaction with peers can be easily integrated through activities involving planting, arranging flowers, gardening, delivering materials, and cleaning up. Cooperation skills can also be improved by working together with peers to have successful gardens. Self-control, assertion, and responsibility skills can also be taught through horticultural therapy in an engaging way. This study by Kim et al (2012) saw an increase in overall self-confidence and feelings of achievement, due to the children seeing that the actions they made, like watering plants, caused their plants to flourish. Further, according to Simson and Straus (2006), self-esteem can be increased through horticultural therapy due to a sense of feeling like these individuals with IDD

are “fitting in.” Horticultural therapy is an easy activity to make integrated with typically developing peers because all are working towards a common goal of creating a successful garden. The sense of belonging in the community and with peers their age for the individuals with IDD has immense impacts on self confidence and worth (Simson et al, 2006).

According to research by Simson et al (2006), horticultural therapy also can benefit cognitive learning and vocational growth. Vocabulary around gardening can be taught and expanded while activities like planting, watering, and cultivating occur. More intricate and complex topics involving plant growth, like biology, ecosystems, plant reproduction, and seasonal changes can also be taught in a more engaging way than sitting in a classroom. Vocational skills are also a major benefit to horticultural therapy (Simson et al, 2006). The lessons learned during horticultural therapy can be applied in the real world for economic benefit. In addition, working in a therapeutic garden is a great way to learn skills in a safe and nonthreatening environment. Some skills can include staying on task, wearing appropriate work attire, being on time, accepting feedback, and following directions in addition to the agricultural skills learned on site. Once these skills are mastered, they can be taken and used in the real world to the benefit individuals with IDD and the community at large, through healthy eating options (Simson et al, 2006).

Recreational Music Therapy

According to Zoller (1991), music therapy uses song, music, and instruments to teach various communication, social, emotional, cognitive, and physical skills. Music can be incorporated into a structured, individualized therapy session or in a natural setting through a

performance class. Some ways music can be incorporated into the clinical setting is by using music and song individually with a client as a relaxation or guided imagery tool, a communication development tool, or using musical instruments. In a larger scale, naturalistic setting, music and song can also be used through singing and musical instrument play, but also with the incorporation of body movement and social engagement (Zoller, 1991). For the purpose of this thesis, emphasis will be placed on the naturalistic, group settings of music therapy.

One skill targeted through music therapy is communication, through the use of word and phrase rhythm (Stephenson, 2006; Zoller, 1991). According to Zoller (1991), different vocal warm-ups and songs can help teach individuals with disabilities the rhythmic pattern of speech, which can then be translated to natural speech. This rhythm often helps individuals subconsciously correct misarticulations in speech as well. Another skill developed through this therapy is vocabulary. Further, breathing and vocalization can be practiced through music therapy. The fundamentals of breathing techniques can be taught through song, by having the therapist emphasize a loose jaw, wide mouth, and open throat to the clients. Different vocal exercises can even help to strengthen the diaphragm. Articulation is another skill that can be improved through music therapy. Vocal exercises and warmups can target specific phonemes, which can be repeated multiple times throughout the song. Music therapy can also be used to teach and promote the use of nonverbal communication in individuals with IDD (Zoller, 1991). In general, according to Stephenson (2006), music therapy can be used as a tool to motivate individuals with communication delays or disorders to attempt communication.

Emotional and behavioral skills can also be targeted and improved through music therapy (Edgerton, 1994; Katagiri, 2009; Kim, Wigram, & Gold, 2009; Simpson & Keen, 2011, Zoller,

1991). Simpson and Keen (2011) reference a study by Katagiri (2009) how musical therapy can be used as a tool to teach emotions, happiness, sadness, anger, and fear, in individuals with IDD. Katagiri (2009) saw improvements in encoding and decoding emotion skills during music therapy intervention. According to Edgerton (1994), self-expression is one key area that has significant improvements through music therapy for individuals with IDD. Another study by Kim, Wigram, and Gold (2009) found that emotional skills were improved in individuals with IDD who participated in music versus play-based therapy. Behavior regulation is also promoted through this therapy technique (Edgerton, 1994; Zoller, 1991). Relaxation exercises through calming music can be used as a way of regulating behavior, specifically stress, by having the patient learn to breathe slowly and deeply with the music (Zoller, 1991). Challenging behaviors have been shown to decrease as well when music therapy is used as a therapeutic tool for individuals with ASD (Edgerton, 1994).

Social skills can also be learned and developed in new ways through music therapy (Corbett, Qualls, Valencia, Fecteau, & Swain, 2014; Edgerton, 1994; Geist, McCarthy, Rodgers-Smith, & Porter, 2008; Zoller, 1991). According to Geist, McCarthy, Rodgers-Smith, and Porter (2008) research has shown that music therapy can benefit children with speech-language disorders' social communication skills. Geist et al (2008) also found that music increased the likelihood of social interaction in a 1:1 therapy setting. Edgerton (1994) cites in his research that music therapy has positive effects in prosocial behavior for children with ASD. Zoller (1991) also cites the benefit of music therapy for socialization in his research. Social skills can improve even more in a group therapy setting, where individuals with IDD can work alongside peers to perform common actions, promoting social interactions (Corbett et al, 2014).

Cognitive skills have been shown to improve through the use of music therapy for individuals with IDD (Silverman, 2008; Zoller, 1991). According to Zoller (1991), music is a multisensory experience that can enhance many cognitive skills, including memory and vocabulary learning. Memory skills can be improved through memorization of different lyrics and patterns for different songs. Lyrics of songs can be geared towards difficult vocabulary concepts for the individuals targeted. These songs make vocabulary learning more engaging and fun. In addition, imagination and creativity have been shown to improve through the use of music in therapy sessions. Silverman (2008) also discusses how cognitive skills can be improved through music therapy, specifically language comprehension, through a case study of a woman with ASD.

Recreational Art Therapy

According to Edwards, Mustonen, and Rynders (2004), art therapy involves the use and production of different art mediums as a therapeutic modality to increase the overall well-being of a patient or patients. Art can be used as a means of expressing deep held, subconscious emotions, that are difficult to express in plain spoken words. Through creation of various art projects, patients can get a better understanding of their emotions or distresses, even if they found it difficult to place or understand previously. Art therapy can be used to teach a variety of skills, whether it be more geared towards expressing emotion or as simple as learning how to hold a crayon or pencil. Art Therapy can include a plethora of activities, like drawing, painting, sculpting, coloring, acting, improvisation, poetry, and creative story telling, in addition to many others at the creative liege of the patient and art therapist. It can be held in an individualized one-

on-one therapy session or in group art therapy classrooms. Art therapy can be beneficial to any age group and is engaging for all due to the vast varieties of it.

Emotional and psychological well-being and expression have been shown to greatly improve through the use of art therapy for individuals with IDD (Epp, 2008; Gilrane-McGarry & Taggart, 2007; Martin, 2011). According to Epp (2008), art therapy allows individuals to create visual narratives, through symbols, icons, and stories, to show challenges and goals. Then, individuals can integrate their own internal experiences into these visual narratives. Epp (2008) emphasizes how beneficial this can be for children with autism, saying "through the child's art, the therapist can gain insight into what the child is experiencing, which is information that is not readily available through verbal means" (pg. 30). Martin (2011) also addresses this topic, stating that the ability for art therapy to address psychological needs of individuals with ASD set it apart from any other profession. In another study by Gilrane-McGarry et al (2007) on how best to support individuals with intellectual disabilities going through bereavement, art therapy was beneficial for two of the participants at allowing emotional expression and allowed one participant to express herself in a visual way, since she could not read or spell.

Behavioral skills can also be improved through art therapy (Epp, 2008; Freilich & Shechtman, 2010). Internalizing and externalizing of behaviors have been shown to decrease through the use of art (Freilich et al, 2010). In a study on the affects of art as a therapeutic modality for 42 children with learning disabilities, significant decreases in internalizing and externalizing behavior were seen in the experimental group versus the 51 children in the control group (Freilich et al, 2010). This is due to the platform of art that allows free expression of emotions, without needing to verbally express them. Drawing, painting, sculpting, and more can

allow an individual to visualize their difficulties and distresses and process them, before needing to express them. Once this processing is complete, the individual has an actual representation of their problem, making it easier to verbalize (Freilich et al, 2010). According to Epp (2008), art therapy is a beneficial replacement for tantrums in children with ASD because it offers a chance to discharge aggression and enables the individual to self-soothe. In her study, all problem behaviors (externalizing, internalizing, and hyperactivity) decreased.

Another area of improvement through art therapy is social interaction (Epp, 2008; Got & Cheng, 2008; Schleien, Mustonen, & Rynders, 1993). During a study conducted by Schleien et al (1993) on 15 elementary aged children with ASD and 53 students without ASD participating in an integrated art therapy program, social interaction levels increased significantly from levels at baseline. Epp (2008) also showed through her research on art therapy for children with ASD that social skills can be significantly improved. One reason for this is due to the concrete, visual characteristics of art. This can help a child with ASD who may experience anxiety in social settings relax and have fun, while learning social skills through a controlled environment. In her study on art therapy and children with ASD, all social skills (cooperation, assertion, responsibility, and self-control) improved. Got and Cheng (2008) found, through a randomized control trial on the positive affects of art facilitation for 37 individuals with developmental disabilities (19 in treatment group and 18 in control group), that social relationship skills improved during posttest, as compared to the control group. This study has immense academic value, since it is a randomized control trial, the gold standard of research.

Cognitive abilities have also been shown to improve with the use of art therapy for individuals with IDD (Epp, 2008; Martin, 2011). According to Epp (2008), art therapy allows

individuals to solve problems visually, which can be very helpful for children with ASD, for example, who tend to be more critical, visual thinkers. Cognitively, art therapy can assist in memory learning, through the use of symbols, icons, and story telling. Martin (2011) also highlighted how art therapy can benefit individuals with ASD cognitively, stating that lack of imagination and abstract thinking are one of the major deficits of ASD, yet one of the least addressed. Art therapy helps promote these skill sets. Got et al (2008) found positive improvements in language comprehension in her study on individuals with developmental disabilities who participated in art therapy, as compared to the control group.

Dance and Performance Therapy

According to Koch and Fischman (2011), dance therapy involves using body movements as nonverbal expression, interaction and communication. The American Dance Therapy Association (ADTA) defines dance therapy as ‘‘the psychotherapeutic use of movement to further the emotional, cognitive, physical and social integration of the individual.” (ADTA, 2009). Dance therapy work best when with a group of people, who can be used as examples and a source of motivation (Corbett et al, 2014). When considering dance therapy, it is important to consider the BEST elements of dance: body, energy, space, and time (Nelson et al, 2017). These four elements co-interact with each other and can be manipulated to promote various skills (Nelson et al, 2017).

Performance therapy, sometimes referred to as ‘dramatherapy’, uses drama as a form of therapy (Jones, 2007). The British Association of Dramatherapists defines performance therapy as “the intentional use of healing aspects of drama and theatre as the therapeutic process. It is a method of working and playing that uses action methods to facilitate creativity, imagination,

learning, insight, and growth." (BAD, n.d.) Performance therapists use many techniques to create therapeutic benefit, one being improvisation, which involves quick thinking and teamwork to create a spontaneous action (Balonon-Rosen, 2017). One of the most important characteristics of performance therapy is its safe and engaging environment for learning. In an article about performance therapy and improvisation for children with ASD, Jim Ansaldo, a research scholar at Indiana University who runs an improve camp for teens with ASD, stated "what improv really does, is create a safe and fun and authentic environment in which to practice where mistakes really don't matter." (Balonon-Rosen, 2017). This type of environment is great for educating of various social, emotional, psychological, behavioral, cognitive, and communication skills.

One area dance and performance therapy, specifically dance therapy, help to promote is awareness of the body and body movements (Dykens, Rosner, & Butterbaugh, 1998; Koch, Mehl, Sobanski, Sieber & Fuchs, 2014; O' Shea, O' Shea, Gibson, Leo, & Carty, 2018; Scharoun, Reinders, Bryden, & Fletcher, 2014). Dance requires a person to know how to engage and move different body parts, so improvements in body awareness and spatial awareness are seen, especially in group therapy settings (Koch et al, 2014). This can help an individual with an IDD who may struggle to understand personal space and distance. Further, physical fitness has also been seen to improve through recreational dance and performance therapy. In general, individuals with IDD have lower levels of muscular endurance, cardiorespiratory fitness, and a higher incidence of obesity compared to normally developing peers (Dykens et al, 1998). Individuals with Down syndrome are one of the most affected, with a study of children by O' Shea et al (2018) showing 51% of boys and 40.6% of girls with Down syndrome were overweight/obese compared to 32% of boys and 14.8% of girls without Down syndrome. Dance

therapy allows for an engaging platform to promote physical exercise in individuals with IDD. Physical benefits can include, but are not limited to, flexibility, balance, muscular tone and strength, and endurance (Scharoun et al, 2014).

In addition, psychological and emotional skills can be improved through this type of therapy (Balonon-Rosen, 2017; Dickinson & Hutchinson, 2018; Koch et al, 2014; O'Leary, 2013; Scharoun et al, 2014). According to research by Koch et al (2014), dance allows individuals with disabilities room to express themselves and let go of previously held frustrations. This therapy also helps to promote the concept of self-other distinction, the ability to distinguish our own actions, emotions, and perfections from others. Through dance, individuals can experience, understand, and interpret other's emotions through their body language and movements (Koch et al, 2014). Also, dance therapy can promote an emotional, healthy connection between individuals through exercises like mirroring, where an individual will copy another's movements face-to-face (Scharoun et al, 2014). For performance therapy, improvisation techniques can be used to teach individuals how to read other's emotions (Balonon-Rosen, 2017). O'Leary (2013) found that emotional skills were improved for four individuals with ASD through acting exercises and games. In her drama therapy program for children with ASD, she implemented a game called "Emotion Party", which involved one child acting out an emotion and the other children having to guess the emotion. Further, Dickinson & Hutchinson (2018) found through interviews with a theatre company for individuals with intellectual disabilities that the program had positive effects of well-being, purpose, self-relating, and achievement for participants.

Social skills are also promoted during dance and performance therapy (Corbett et al, 2014; Corbett, Key, Qualls, Fecteau, Newsom, Coke, & Yoder, 2016; Dickinson et al, 2018; Scharoun et al, 2014). Acting overall is an interactive process that involves many aspects of socializing, like observing, perceiving, expressing, and interpreting various thoughts and ideas (Corbett et al, 2014). Corbett et al (2014) found social behaviors to be one of the most affected and improved. In this study, significant improvements in social responsiveness and social cognition were reported (Corbett et al, 2014). In another study by Corbett, Key, Qualls, Fecteau, Newsom, Coke, & Yoder (2016), improvements in social skills were also seen, through increases in theory of mind and perspective taking. This involves being able to understand what other individuals are thinking and how they may act. This study is exceptionally valuable since it was a randomized trial, the gold standard of research. The interview-based research study by Dickinson et al (2018) also found improvements in connections with community members, bonds with program participants, and friendship building.

Behavioral skills are another area that can improve through dance and performance recreational therapy (Corbett et al, 2014; Corbett et al, 2016). According to Corbett et al, 2014, behavior regulation tends to be strengthened during dance and improvisational therapy. Corbett also argues that stress tends to be reduced in individuals who participate in dance and improvisational therapy. Stress management skills can then be transferred to real world situations. Dance and performance therapy help promote adaptive skills as well. Especially through improvisation, learning to think quick on one's feet and adapt to different situations is learned (Corbett et al, 2014). In the recent study by Corbett et al (2016), behavior improved for individuals with ASD due to a better understanding of perspective taking and theory of mind.

Cognitive and communication skills can also be improved through dance and performance therapy (Balonon-Rosen, 2017; Corbett et al, 2014;). For cognitive skills, Corbett et al (2014) found improvements in memory for individuals with ASD through performance therapy. For communication skills, individuals with ASD who participated in improvisation through performance therapy gained a better understanding of facial expressions and body language (Balonon-Rosen, 2017).

Recreational Sports Therapy

Recreational sports therapy is another type of recreational therapy that has benefits for individuals with IDD. Sports are defined, according to the Oxford University Press as cited in Dattilo and McKenney (2016), as being competitive, physical activities performed for pleasure. Sports require physical effort and a specific set of rules to be run smoothly and effectively (Oxford University Press, n.d.). According to Pensgaard and Sorensen (2002) as cited in Dattilo (2016), sports have three different levels of activity, the first being recreational sports, sports performed for fun and health. According to Paciorek (2005) as cited in Dattilo (2016), individuals with disabilities have the same desire to participate in sports as individuals without disabilities.

Recreational sports therapy allows for individuals with disabilities, specifically individuals with IDD, to engage in mainstream sports, with or without modifications. To explain this, Dattilo and McKenney (2016), list some examples of sports participation for individuals with disabilities in three categories: physical limitations, sensory limitations, and cognitive limitations. Individuals with physical limitations, like individuals with cerebral palsy who require a wheelchair, can still participate in mainstream sports, like basketball, softball,

racquetball, and rugby, with slight rule modifications for that individual. For sensory limitations, like hearing and visual loss, only slight modifications must be made to allow individuals to participate. For example, an individual who is deaf who wants to participate in track only needs to be able to see the starting gun, since they can not hear it. For an individual who is blind, modifications can be made in a sport like track, which would allow the individual to participate. For an individual with cognitive limitations, unique modifications can be made to allow participation in virtually any mainstream sport. Inclusive sports are the most desirable, however other programs, like the Special Olympics, are available for individuals with IDD who want to participate solely with other individuals with IDD. Though not all individual with IDD have some of these limitations, like sensory limitations, some might. Also, these categories help to show that individuals can be integrated into mainstream sports with only slight modifications needed.

There are many benefits of recreational sports therapy for individuals with IDD. First, sports recreation allows for physical activity (McConkey, Dowling, Hassan, & Menke, 2013; Murphy & Carbone, 2008; Tomporowski & Ellis, 1984). Participation in sports recreational therapy programs allows for individuals with IDD to participate in physical fitness in a fun and engaging way with peers their own age (McConkey et al, 2013). In fact, Tomporowski and Ellis (1984) completed a study with 65 individuals with IDD and an aerobic-type exercise program. They found that these individuals improved their cardiorespiratory endurance and were able to learn the majority of the exercises and perform them on their own in a nine-month follow-up. This study, though 36 years old, shows that not only is sports recreational therapy beneficial to health, but also can be learned and taught to individuals with IDD. In addition, participants of the

Special Olympics have reported increased physical competence compared to nonparticipants with IDD (Murphy et al, 2008).

Another benefit of sports recreational therapy is through emotional, psychological, and social well-being (Dykens et al., 1998, McConkey et al., 2013, Murphy et al., 2008). Sports recreational therapy has been shown to improve self-esteem, social competence, interpersonal skills, social inclusion, and friendship building (Dykens et al., 1998, McConkey et al., 2013, Murphy et al., 2008). Sports recreation therapy has also shown to allow for expression of creativity, the development of self-identity, and for the fostering of purposeful meaning in life (Murphy at el., 2008). An example of this for individuals with IDD is through the Special Olympics. Participants in the Special Olympics have reported increased self-esteem and peer acceptance compared to other nonparticipants with IDD (Murphy et al., 2008). Parents of participants have also reported increased social adjustment, community involvement, life satisfaction, and peer support after having their child participate in the Special Olympics (Murphy et al., 2008). The strenuous activity associated with physical exercise is also beneficial at decreasing maladaptive behaviors in individuals with IDD (Murphy et al., 2008). Another study, by McConkey (2013), interviewed participants of a Youth Unified Sports, a program through the Special Olympics that pairs an individual without an intellectual disability with an individual with an intellectual disability who participate in the same sport. One interviewee with an intellectual disability spoke on behalf of his self-esteem after participating in this program, stating, “I am a more confident person now. I am not shy to talk to people. I will hold my head up and speak out loud. I got more used to people in playing on my team and I am not afraid of people that I don’t know.” (pg. 928).

Communication skills are also improved through sports recreational therapy for individuals with IDD (DePauw, 1986; Dismuke, 1981; United Nations, n.d.). Skills like teamwork and cooperation can also be improved through sports recreational therapy for individuals with IDD (United Nations, n.d.). For example, in literature review conducted by DePauw (1986) on the effects of horseback riding for individuals with disabilities, she found language skills improved through this form of recreational sports therapy in children with disabilities. More specifically, a study conducted by Dismuke (1981) found that a horseback riding program for 15 individuals with communication disorders helped to improve phrase and clause combinations, as compared to a non-riding control group. Though these studies are older, they still help to show the benefits sports recreation can have on communication skills for individuals with IDD.

The Components to Successful Recreational Therapy

Recreational therapy has been shown through evidence-based research to have many benefits for individuals with IDD. These benefits can be even more numerous when different components are applied to recreational therapy: integration and community acceptance and involvement (Miller, Schlein, & Lausier, 2009; Carter & Andel, 2019). Though these components are not necessarily needed to make recreational therapy beneficial, they have a tendency to increase the likelihood of benefits for all individuals partaking in them (Miller et al, 2009; Carter et al, 2019). These components serve as a major driving point for my argument in this thesis, that when implemented in a certain manner, recreational therapies can be applied with benefit to low resource countries and communities for individuals with IDD.

The first component of successful recreational therapy is inclusivity. According to Miller, Schlein, and Lausier (2009), in the past many recreational therapy activities have been segregated, meaning that individuals with IDD are separated from their peers without disabilities. New trends of recreational therapy have been to a more inclusive therapy that allow individuals with IDD to participate in a typical leisure lifestyle with their normally developing peers (Miller et al, 2009). The second component of successful recreational therapy is community acceptance and involvement. According to Carter and Andel (2019), in the early history of recreational therapy, services were usually restricted to hospitals and institutions. Over time, professionals and society as a whole started to realize the benefits of returning individuals with disabilities to their homes and communities. Because of this, recreational programs and therapies started to be held in the community setting. Today, there has been an increased demand for community-based services for recreational therapy (Carter et al, 2019).

Summary

In summary, recreational therapy has many benefits to individuals with IDD. There is a few main take away points from this chapter. The first concerns the evidence base of each type of recreational therapy: nature-assisted therapy, music therapy, art therapy, dance and performance therapy, and sports recreational therapy. As shown throughout this chapter and in Table 2: Main Types of Recreational Therapy, there is a substantial evidence base for recreational therapies. Recreational therapy is not a therapy alternative, but a clinically tested and research method of therapy with benefits to individuals with IDD.

The second takeaway from this chapter is the overall environment of most of these recreational therapies. Recreational therapy allows for a safe space for individuals to learn and

grow various social, emotional, psychological, behavioral, cognitive, and communication skills. In addition, though having a professional who is equipped in these types of therapies is valuable, it is not necessarily needed. The main point is that recreational therapies teach skills just through the activities and interactions with other participants. Many important developmental skills can be learned solely through engaging. This is not to say that medical care and therapy are not important as well, however recreational therapy might be a beneficial supplement to these forms of therapy.

The third and final takeaway is about the successful components of recreational therapy: integration and community participation and acceptance. Though segregated type programs, like the Special Olympics, have had success at creating opportunities for individuals with IDD to develop various skills, integration is the future of recreational therapy because it allows individuals with IDD to interact with peers with typical development (Miller et al, 2009). Community participation and acceptance have also become more prevalent in recreational therapies (Carter et al, 2019). Keeping individuals with IDD in and participating in their communities has immense benefit (Carter et al, 2019). Further, community acceptance of recreational therapy activities lends itself to community acceptance of individuals with IDD. Both integration and community acceptance are extremely important when it comes to implementation of recreational therapies in low resource countries and communities and will be discussed in greater detail Chapter 3.

CHAPTER 3: THE BARRIERS TO MEDICAL CARE IN LOW RESOURCE COUNTRIES AND COMMUNITIES AND HOW COMMUNITY-BASED RECREATIONAL THERAPY ADDRESSES THEM

Barriers to Service Provision

Jacobs, Bigdeli, Annear, and Damme (2011) identified four categories of barriers for individuals in accessing health care and related services in low resource communities and countries; geographic accessibility, availability, affordability, and acceptability. Though these four barriers are not exhaustive, they give a thorough overview for the benefit of this thesis. It also helps to categorize the barriers in a way that makes this thesis flow in a logical, organized sense.

When selecting references for this chapter, I selected studies from various low resource communities and countries around the world rather than targeting just one country. I did this for two reasons. First, these communities and countries are naturally very different in many ways, culturally, linguistically, spiritually, and so forth. One of the key strengths of a recreational therapy approach is that the choice of the type of recreational therapy can be tailored specifically to the unique cultural characteristics of each community. For instance, a community with a strong tradition of dance might be well suited to recreational dance therapy, whereas a community with a strong agrarian foundation could clearly integrate nature-assisted or horticultural therapy. Showing the breadth of how recreational therapies can benefit diverse low resource communities and countries illustrates that recreational therapies may have benefit across areas. Second, available research is oftentimes limited for recreational therapies in low resource communities and countries. Due to the shortage of research on this specific topic, I used

studies from wide ranging low resource communities and countries. The purpose of this thesis is to demonstrate the potential benefits of recreational therapies in various low resource communities and countries for individuals with IDD, understanding that the specific type of recreational therapy will depend on the culture of different countries and communities.

Geographic Access

Access to health services is essential to their utilization (Gulliford & Morgan, 2003; Higgs, 2009; Joseph & Phillips, 1984; Meade & Emch, 2010). This is especially true in rural areas of low resource communities and countries, which are characterized by overall poorer health outcomes (Stock, 1983; Tanser, Gijsbertsen, & Herbst, 2006). Access to health services can be defined in two categories, according to Yao, Murray, and Agadjanian (2013). The first category is geographic access, which focuses on the spatial separation between individuals and health facilities, like distance, infrastructure, terrain, and indirect costs. Non-spatial access refers to demographic, socioeconomic, and organizational factors, like age, sex, education, income, and religion. This second category will be explained under the later section that discusses barriers of affordability and acceptability. In the current section, I focus on the geographic barriers for individuals in rural and urban settings in low resource communities and countries. A study by the World Health Organization about intellectual disabilities from 147 various countries found that 53.9% cited geographical location as playing a significant barrier to services for this population and 56.4% citing urban/rural milieu as a significant barrier (Mercier, Saxena, Lecomte, Cumbrera, & Harnois, 2008). In addition, this factor had the greater impact on countries in low and lower-middle income groups (Mercier et al, 2008).

In general, major hospitals are located in cities with larger populations than small rural communities. For example, a Google search reveals that the national hospital of Tanzania, Muhimbili National Hospital, is located in their capital city of Dar es Salaam and the National Hospital of Sri Lanka is located in their capital city of Colombo. Though there are other hospitals, clinics, and dispensaries available in these areas, they many times do not offer therapy services. This can be problematic to residents of rural communities, where access to health facilities is more limited. For example, in a comprehensive analysis of intellectual disability in South Africa by Adnams (2010), services for individuals with intellectual disabilities tend to be concentrated in larger health centres and many individuals with intellectual disabilities in rural areas had no meaningful access to services at all. Allotey, Reidpath, Kouamé & Cummins (2003) also showed this disparity in a study examining health outcomes for individuals with paraplegia in a high income, urban area in Australia and a low income, rural area in Cameroon (Allotey et al, 2003). This study noted that only one rural hospital in Cameroon provided Occupational Therapy, but no participants from Cameroon were supported through any means of care, whether it be a hospital, dispensary, rehabilitation center, or home care. In contrast in the urban setting in Australia there were numerous facilitations and medical services for individuals with paraplegia. Stone-MacDonald (2016) reported similar findings at a school for individuals with intellectual disabilities in rural Tanzania, finding that community members interviewed stated there were no medical services for their children with IDD nearby.

Travel to hospitals from rural contexts poses another problem for individuals with IDD. According to Strasser, Kam, and Regalado (2016), public transportation is uncommon in some rural areas and lack of infrastructure can pose a challenge for motorized vehicle access. In those

communities, individuals have to walk multiple miles on foot to the closest town with public transportation to access public transportation. This can cause another barrier for individuals with mobility issues related to IDD. In addition, oftentimes handicap seats or stops are not readily available on public transportation. Maunder, Venter, Rickert, and Sentinella (2004) interviewed with individuals in South Africa, India, Malawi, Mozambique and Mexico. They found that many transportation services do not have handicap seats or stops long enough for individuals with physical disabilities. Some countries, like India, Mozambique, and Malawi, have policies requiring reserved seating for individuals with disabilities, but Maunder et al (2004) note that they are rarely followed by the rest of the population. Due to these and financial barriers, many choose to use walking as their main mode of transportation. Having personal transportation is even less common, with Allotey (2003)'s study only having one patient from Cameroon who had a car to access medical facilities in the city closest to him.

All of these factors result in very long travel time to get to a hospital or clinic, which deters individuals from accessing care unless for dire health needs (Tanser et al, 2006). A study by Tanser et al (2006) illustrates this phenomenon. In this study, 250 homesteads in rural South Africa were interviewed to assess the travel time needed to reach a clinic and a hospital. They found that 60.8% of individuals interviewed traveled by foot, 38.8% used a mix of public transportation and walking, and only one homestead used a personal vehicle. The median travel time to the nearest clinic was 81 minutes, compared to the median travel time to a district hospital of 170 minutes, with the median being the better measure of central tendency. Further, individuals who live in peri-urban/rural parts of the study had an estimated ¾ times longer travel time to clinic than urban counterparts.

Infrastructure also plays a role in making access to care for individuals with IDD in low resource countries and communities difficult. Dirt roads or pathways, which exist in both rural and urban communities, are extremely difficult to maneuver for individuals in wheelchairs (Allotey et al, 2003). Even for individuals with IDD who do not use a wheelchair, mobility can still be challenging. For example, according to the American Academy of Orthopedic Surgeons, individuals with Down syndrome may have hip, knee, and other joint instability (AAOS, n.d.). This can increase the likelihood of joints to slip out of place or become dislocated. Flat feet, bunions, and other feet conditions can also occur in individuals with Down syndrome, causing foot pain and impacting balance and gait (AAOS, n.d.). This difficulty maneuvering through a community can make it much more difficult for individuals with IDD to access even a small local dispensary (Allotey et al, 2003).

Indirect costs associated with obtaining care located far away can prevent individuals from seeking it (Strasser et al, 2016), particularly for individuals living below the poverty line who may be living on as little as $1 a day (Parnes, Cameron, Christie, Cockburn, Hashemi, & Yoshida, 2009). As Strasser et al (2016) note, financing a bus ticket can be costly, particularly for those who need to make consistent visits, and bus as a means of transportation is complicated by the issues of infrastructure already mentioned. They also note that in addition to transportation costs, the indirect cost of missing days of work to travel to a medical facility can impose financial burden. Finally, the need for child care to travel may also be an indirect cost and unavailable to individuals in low resource areas.

Service Availability

Many low resource countries lack services for individuals with IDD, as more emphasis is placed on communicative diseases (Cameron, Nixon, Parnes, & Pidsadny, 2005). Having an IDD is not life threatening, like fatal health crises, which tends to be the focus of hospital services (Cameron et al, 2005). This claim is supported in a study on intellectual disability in Africa by Mckenzie, McConkey, and Adnams (2013), stating that investments into interventions in Africa tend to be for interventions that target prevention of primary health concerns, rather than ongoing management therapies for individuals with intellectual disabilities. In addition, some countries have policies in place by the government for services for individuals with IDD, but they are rarely followed (Adnams, 2010). For example, in Adnams' (2010) comprehensive study of intellectual disabilities in South Africa, a range of services for individuals with intellectual disabilities are outlined by the government sectors, however a comprehensive and integrated approach to these services is often hampered due to a lack of intersectoral coordination and lack of prioritization of resources.

Because of these challenges, services for individuals with IDD is uncommon. According to a study of disability in Tanzania, only 2-10% of individuals had access to rehabilitation and therapy related services (Cameron et al, 2005). According to the World Health Organization study on intellectual disabilities, low resource communities and countries had less services for individuals with intellectual disabilities than any other income group (Mercier et al, 2008). Services for adolescents and adults with IDD are even more lacking; as Adnams (2010) discussed in her study that in South Africa, major service gaps are seen for these age groups with intellectual disabilities. Educational services are also lacking for children with IDD in low

resource countries and communities. Fewer than 10% of children with disabilities attend school and according to research by the African Child Policy Forum (ACPF), children with intellectual and multiple disabilities are the most likely of all children with disabilities to be out of school (ACPF, 2011; Mckenzie et al, 2013). For example, in the ACPF study, 86.5% of children with intellectual disabilities were not in school in Senegal (ACPF, 2011; Mckenzie et al, 2013). In addition, "special schools", which involve segregation of individuals with IDD from their peers with typical development, are provided in many African countries as the only response to IDD (Chataika, Mckenzie, Swart, & Lyner-Cleophas, 2012; Mckenzie et al, 2013). Maulik and Darmstadt (2007) conducted a comprehensive literature review of childhood disability on childhood disability in low resource communities and countries. They emphasized that research shows a need for community-based intervention services related to screening or rehabilitation for individuals with IDD.

Rehabilitation and therapeutic related professionals can also be scarce (Maulik et al, 2007). For example, there are only two licensed Speech Language Pathologists in the entire country of Tanzania (Cameron et al, 2005). Further, in sub-Sahara Africa, there is a ratio of around 1 Speech Language Pathologist per 2-4 million people, compared to the ratio in high income countries around 1 SLP per 2,500-4,700 people (Wylie, McAllister, Davidson, & Marshall, 2013). There is also a limited number of Occupational Therapists in low resource countries. In Zambia, there are only two Occupational Therapists in the entire country, with only one of those therapists working full time (Njelesani, Stevens, Cleaver, Mwambwa, & Nixon, 2013). In addition, intersectoral collaboration is lacking in services for individuals with IDD,

with Maulik et al (2007) emphasizing the need for intersectoral collaboration through community-based intervention.

Evidence also suggests that the demand and wait time for rehabilitation services in low resource communities and countries outweighs the supply of these services (Gupta et al, 2011; WHO, n.d.). In the study on the school for individuals with IDD in Tanzania, community members interviewed stated that schools nearby for their children with IDD were too overcrowded, causing the children not to be able to attend and receive education (Stone-MacDonald, 2016). The wait for services affects the likelihood of treatment for individuals with IDD (Sherry, 2014). Buor (2003) found wait time for health treatment to be an average of 150-160 minutes for individuals in Ghana.

In addition, there are limited opportunities to train to become health care providers for individuals with IDD in low resource communities and countries. In Zambia, training to become an Occupational Therapist is scarce and require most to obtain outside training (Njelesani et al, 2013). This makes it more challenging for individuals to become Occupational Therapists, making it less likely for new Occupational Therapists to work in Zambia. Training for professionals specifically related to disability studies is also lacking. A study on special education teachers found these individuals to have a lack of knowledge about disability due to lack of trainings in special need and disability issues (Njelesani et al, 2013). Little research has been conducted about how trainings for staff for individuals with IDD are conducted and why they tend to be poor, however research does show that it is not as successful as trainings in high income countries (Maulik et al, 2007). In the study by Maulik et al (2007), emphasis is placed on the need for additional adequately trained staff.

Service Affordability

There is a significant association between the prevalence of IDD and poverty (Emerson, 2007). In fact, according to Durkin (2002), low socioeconomic status is the strongest and most consistent predictor of mild intellectual disabilities throughout the world. Moreover, 82% of individuals with disabilities who live in low lower-middle income countries live below the poverty line (Parnes et al, 2009). This limits the ability to pay high medical expenses and therapy for individuals with IDD, with the study by the World Health Organization showing that 51.8% of the 147 responding countries stating that socioeconomic status played a significant role in barriers to services for individuals with intellectual disabilities (Mercier et al, 2008).

According to the World Health Organization's World Disability Report, costs associated with treatment are the number one reason for lack of care for individuals with disabilities (WHO, 2011). These findings are also stated in four other research studies related to barriers of care for individuals with disabilities, one in India and three in South Africa (Eide, Mannan, Khogali, Rooy, Swartz, Munthali, & Dyrstad, 2015). Costs of visits are found to be more of a barrier for individuals with disabilities, than individuals without disabilities (WHO, 2011). In addition, in the World Health Organization study, the importance of out-of-pocket money was the highest in low and lower-middle income countries (Mercier et al, 2008). This means that services have to more often be funded by the individual themselves, which can be difficult or impossible for an individual with IDD below the poverty line (Mercier et al, 2008).

In addition, though there are some governmental benefits to individuals with disabilities in countries around the world, many low resource communities and countries do not. In the study of intellectual disability by the World Health Organization, 87.4% of the 147 countries surveyed

had some type of financial governmental benefits for individuals with intellectual disabilities (Mercier et al, 2008). Of the 22.6% that did not provide financial support, half belonged to low-income countries, with 21.4% from low-middle income countries. Further, this study showed a large discrepancy between individuals who were entitled to financial governmental support and those who actually received that support. In 72.4% of low income countries, less than 10% of individuals with IDD obtained the benefits they were entitled to receive.

Acceptability

Maulik et al (2007) argue that individuals with IDD can be stigmatized in low resource communities and countries. According the the World Health Organization's World Disability Report, individuals with disabilities experience more direct exclusion and denied care than individuals without disabilities (WHO, 2011). This stigmatization can lead to isolation, segregation, and a lack of support (Macha, 2007). In communities where stigmatization is more common, individuals with IDD tend to hide in shame in their homes (Mckenzie et al, 2013). This leads to a lack of exposure to IDD within the community, which in turn lends to the ongoing stigma and discrimination of these individuals.

According to Rohwerder (2018), there are many potential reasons that drive the stigma behind individuals with IDD, specifically in low resource countries and communities. Some major reasons cited in her research are due to a lack of understanding of what a disability is, what causes a disability, and how a disability is managed. In a study by Samadi and McConkey (2011) on individuals with autism in Iran, 43 parents with individuals with autism were interviewed. When asked about the causes of autism, 37% said pregnancy complications, 23% said environmental factors, 23% said damage to the child's brain and body, 21% had no idea,

16% said spiritual and religious factors, 7% said genetics, and 1 parent said due to a lack of relationships with others. In the study by Mckenzie et al (2013) on intellectual disability in Africa, traditional beliefs of intellectual disabilities caused by divine retribution or witchcraft have been described in South Africa, Tanzania, Ethiopia, Uganda, and Zambia. Age and education tend to play a role in these beliefs, with younger and more educated individuals being less likely to believe traditional claims about disability.

Lack of community education about individuals with IDD tends to increase the likelihood of misinformation and stigma (Samadi et al, 2011; Stone-MacDonald, 2016). Samadi et al (2011) interviewed parents and reported that the most common source of information about ASD was through other parents who had children with ASD. It is important to note the importance of oral tradition in low resource countries and communities. Parents in many low resource communities and countries rely on informal sources for education. It is also important to note that in this study, 95% of parents wanted to get more information on ASD and its features. In Stone-MacDonald's (2016) study on the rural school for individuals with intellectual disabilities in Tanzania, the local community lacked knowledge of IDD, an understanding of what causes IDD, and how a IDD should be treated. Consequently, some families did not seek out medical care or therapy for their family members with IDD.

Benefits of Community-Based Recreational Therapies

As discussed in Chapter 2, integration and community inclusion and acceptance help increase the likelihood of success for recreational therapies. These principles are well suited for low resource countries and communities, where community-based interventions have been shown to benefit in these areas for individuals with IDD (Bennett, Marcus, Abbott, & Hugo,

2020; Maulik et al, 2007; Mckenzie et al, 2013). According to Wandersman and Florin (2003), community-based interventions are defined as "multicomponent interventions that generally combine individual and environmental change strategies across multiple settings aiming to prevent dysfunction and to promote well-being among population groups in a defined local community" (pg. 441).

For this thesis, community-based interventions can fall into three models for project implementation: setting, resource, and/or agent (Mcleroy, Norton, Kegler, Burdine, & Sumaya, 2003). These categories tend to overlap. For setting, the community is defined geographically as the location in which interventions are implemented. Resource relies on the notion that a high degree of community participation and ownership is necessary for sustained success. Agent involves reinforcing and respecting the natural supportive, adaptive, and developmental capacities of the community. In other words, this model emphasizes the necessity to work with community structures that are already in place and strengthening them to benefit a certain population group. These models of implementation help to explain the benefits of recreational therapies in low resource countries and communities.

Listed in the table below are the barriers to medical care (described earlier) and examples of how community-based recreational therapies can respond to some of those burdens. This table shows the benefit that recreational therapies could have for individuals with IDD in low resource communities and countries. It is important to note that this part of the thesis is theoretical in nature. Though there is not specific research to show how recreational therapy will benefit individuals with IDD in low resource countries and communities specifically, there is promise to

its benefit, which is listed in this table and the sections below. The analysis I have done may offer some avenues for future research to evaluate these arguments.

Table 2: Service Barriers and Improvements with Community-Based Intervention

Dimension	Barrier	Community-Based Recreational Therapies
Geographic Access	• Distance • Transportation • Infrastructure • Indirect Costs	• Because the activity is within the community, it reduces distance and transportation costs • Indirect costs are also diminished since individuals do not need to spend extended time away from their home to attend recreational therapy activities
Service Availability	• Lack of services • Lack of professionals • Demand of services • Wait time of services	• Because recreational therapies are easy to implement, the amount of services can increase • Due to the nature of recreational activities prompting developmental skills solely through participation, extensive outside training is not always necessary • Services for individuals in the community can also increase, like promotion of exercise, which can serve benefit to typically developing community members as well
Service Affordability	• Poverty • Costs of services • Healthcare • Governmental Funding	• Recreational therapy is very cost effective, due to the elimination of indirect costs, no required medical equipment, and no required health insurance when held in the community setting
Acceptability	• Community attitudes • Individual attitudes • Education and understanding of IDD	• Recreational therapy addresses community cultural preferences in ways other therapies can not • More community education on IDD and involvement with individuals with IDD can bring about improvements in community acceptance and attitudes towards IDD

Benefits for Geographic Access

Community-based recreational therapy can be located and utilized almost anywhere. For example, nature assisted therapy, music therapy, art therapy, dance and performance therapy, and sports recreation therapy can occur in all various types of locations in both urban and rural settings, as long as there is enough room for participants. In the setting model of community-based intervention, the goal of community-based interventions is to be held directly in the target community (Mcleroy et al, 2003). According to Haines, Sanders, and Lehmann (2007) it is very important to have the location of services within the community to increase treatment options for individuals with IDD. Placing the services within the community reduces the barriers of distance, transportation, infrastructure, and indirect costs for individuals with IDD. Holding therapy directly in the community of the target population, in this case individual with IDD, makes services more accessible, since individuals do not have to travel far distances to obtain them. Also, having therapy within the community decreases the amount of time individuals with IDD need to navigate poor infrastructure, like dirt roads and paths, since therapy is closer to home.

As examples of this principle, nature-assisted therapy only requires a safe environment in the outdoors. For wilderness therapy, a designated amount of space is not necessary, since participants can wonder around in the environment to explore various elements of nature. A community farm or garden can be planted in any location that has the ability to grow plants, with the permission of community leaders. Even in urban settings, adventure recreation activities can be performed with games like “Don’t Touch the Lava,” where individuals have to find ways of getting from one area to another without touching the floor. Though these types of games fall

under the category of “nature-assisted therapy,” adventure recreation actually places more emphasis on teamwork type of games and activities. Because of this, even individuals with IDD in urban settings can participate. Depending on the environment, activities can be tailored so there are still developmental benefits.

Music and art therapy require a small amount of space, just an area where participants can gather to engage in the activities. For music therapy, activities can be held out in the open or indoors, depending on what is available in the community. For example, an activity involving song for music therapy activity can be held anywhere, whether in an urban or rural setting. The only thing to avoid would be a noisy area, if possible. Art therapy can also be held indoors or outdoors, depending on the space availability. For example, individuals with IDD can sit anywhere to draw a picture or to sculpt a sculpture. These types of activities are especially useful to solve geographic accessibility barriers, due to the fact that they require very little room and specialized equipment.

Dance and performance therapy and sports recreation therapy need a bit more room, to do the various dance, performance, and sports exercises. It is likely best to have these types of therapies on flat ground outdoors. For example, futbol can be played in a rural setting in a flat field. Dance and performance therapy can also be held either in a grass field or indoors, if that option is available. Modifications can be also made to these therapies if necessary if space is limited or can not be flat. For example, dance therapy can still occur in a small space, with individuals taking turns performing different exercises. If a flat space is not available for sports recreational therapy, hills can be used for hill sprints. Recreational therapies are very adaptive, which allows them to occur in almost any setting within a given community.

Community-based recreational therapy also helps to eliminate indirect costs of travel, since these services can be in walking distance for the individuals with IDD. Since therapies held within the community can be in walking distance for individuals with IDD, financing of transportation, like bus tickets, are no longer necessary. The need to miss days of work at a time to receive care are reduced for this type of activity as well. Because of this, the indirect cost of obtaining prolonged child care when traveling is also reduced. Extensive visits and travel are not necessary, decreasing this barrier to service.

Benefits for Service Availability

All three models of community-based interventions play a role in increasing benefits for service availability. Using the setting model, community-based recreational therapy can be held directly in the community, as stated in the section above. Because of this, services can be more available for individuals with IDD. For resource, involvement of the community helps increase the likelihood of success to recreational therapy, and in turn, service outcomes (Carter et al, 2019). Recreational therapies can be taught to individuals in the community, so it can be self-sustained without outside help. Extensive medical training or background is not needed. The agent model also plays a role when considering how best to benefit the barrier of service availability. The most crucial element of this model is using resources and programs already in place in a community, instead of implementing something new. With recreational therapy, individuals with IDD can be integrated into preexisting recreational activities, without the necessity to create a brand new program, with still the same increase in developmental benefits. According to Miller et al (2009), this has benefit to the rates of success for recreational therapies.

In addition, though it is beneficial to have an expert in the field of the specific type of recreational therapy, once someone in the community is taught the basics of each type of therapy, those community members can begin implementing them. Many of the skills listed in Chapter 2 can be learned just through basic activities in each area. For example, playing a game of futbol can prompt increases in self-esteem and cooperation (Murphy et al., 2008; United Nations, n.d.). Dance and performance therapy can help teach emotional and spatial awareness (Koch et al, 2014). Art therapy can help alleviate aggression and teach visual problem solving (Epp, 2008). Intensive training is not necessary for this type of therapy, which is beneficial since intensive health staff trainings tend to be limited (Njelesani et al, 2013). The main takeaway is that many leisure activities are associated with benefits to developmental skills, without the needed for intensive medical-based care and therapy.

Benefits for Service Affordability

One of the largest benefits of community-based recreational therapy is that these therapies serves as a cost effective means to enhance other services that individuals with IDD may not be able to afford (ATRA, n.d.). Using the models of community-based intervention, the setting and resource model come into play for alleviating these barriers. Using the setting model, community-based recreational therapies are held within the community, reducing costs associated with travel for the individuals with IDD. The resource model also play a role, due to the fact that community-based recreational therapies use elements already within the community to make them feasible, which in turn reduces cost.

There are many reasons for this reduction in cost. The location of these services can be anywhere, specifically right in the community, limiting costs associated with traveling to receive

care. Also, community-based recreational therapy does not require a clinical space with medical equipment, which saves funds. It can be hosted anywhere, the only limitation being enough space to participate. Further, because these types of therapies do not need to be conducted in a medical facility, they do not require any form of health insurance. Many individuals with IDD in low resource countries and communities do not have health insurance and must pay for services out-of-pocket, which is an extreme financial burden (Mercier et al, 2008). For example, according to research by Sherry (2014), people with disabilities in South Africa are less likely to have health insurance. Community-based recreational therapy can be beneficial in avoiding this barrier, since health insurance does not need to be used.

In addition, recreational therapies do not require much material or require easily attainable material. For example, nature-assisted therapy requires materials from the outside world, which can be found within the location of the community, whether rural or urban. This can include, but is not limited to, various local plants, trees, rocks, or any source of naturally flowing water, for wilderness therapy. Observation of various local wildlife can also be used for this type of therapy. For horticultural therapy, individuals can use a locally grown garden or start their own with materials around the community. In a rural community, for example, where agriculture plays a large role, individuals with IDD can help tend to the various plants. This not only helps the community, by increasing help in the gardens and promoting understanding of the field of agriculture, but also can promote various developmental skills for individuals with IDD while being cost effective. For adventure therapy, no additional materials need to be used, just a vivid imagination to create various team building games and activities.

Dance and performance therapy and music therapy also do not require many outside resources. Clapping of hands, stomping of feet, and singing can add the musical element needed for these types of therapy, without the use of music equipment. If local community instruments are available, those can be used as well to increase cultural understanding of community elements for individuals with IDD. Specifically, for performance therapy, no props are required. Actually, in most situations, props are "created" by the individuals through pantomiming various actions. For example, for one performance therapy activity, an individual may pretend to "walk a dog", then pass it off to another participant. That participant then may decide to act out a different object, like "eating a mango". These activities require no outside resources, making them more cost effective for the community and participants.

Art therapy also does not necessarily require expensive outside equipment to be successful. Many elements around nature can be used to create pieces of artwork. For example, mud, rocks, or clay can be used to make sculptures. In addition, cultural pieces of art can be made. If the community is known for the creation of a certain cultural piece of art, like beadwork or wooden sculptures, those skills can be taught and carried on independently for the participants. This will not only increase cultural awareness of community traditions for the participants, but will also give work for the individuals with IDD that they can use in the future for income.

For sports recreation therapy, many communities will have some type of sports equipment, since sports are a very cultural element. For example, some communities may have some sort of futbol, even if it is not directly a sports equipped futbol. If not or these resources are unavailable, sports equipment can be fashioned from outdoor elements or items in the

community. For example, strips of wooden bark can be used for cricket or sticks can be used for stickball. A rolled up cloth with string can be used as a futbol or baseball. Many elements of sports can be created from items around a community. If these elements are unavailable, sports like running and team relay races still can serve benefit, without the need for outside equipment. Swimming also does not require outside resources, if access to a body of water is available. In summation, there are many ways to make recreational therapies cost effective.

Benefits for Acceptability

Rates of acceptability may also increase through the use of community-based recreational therapies. One main reason for an increase may be due to community-based recreational therapy being able to be directly tailored to the cultural preferences of a community, making it more culturally appropriate and less intrusive. By incorporating cultural elements into these therapies, community members may be more willing to participate and in turn, learn about IDD. Through a fun, engaging, and informative platform, community members will learn about IDD while engaging with individuals with IDD. This may help to promote better views and beliefs about this population.

For example, music and dance and performance therapy can integrate cultural songs and dances of the community. Art therapy can incorporate artistic traditions or rituals of the community, whether that be painting, basket weaving, or wood carvings to name a few examples. For nature-assisted therapy, different beliefs of the value of natural elements can be more emphasized, depending on cultural ideologies and beliefs of the importance of nature. Horticultural therapy can also promote understanding of agriculture, which may be important to the culture of various rural low resource communities and countries. Recreational sports therapy

can focus on sports that have a strong basis in the country already, making it easier to integrate within the community. For example, African or South American countries may choose to practice futbol during recreational sports therapy, since it is very common to that area. Communities in India may choose to implement cricket into their sports recreation therapy program.

Community education can also be improved through the implementation of community-based recreational therapy. Having these therapies within the community helps to educate individuals on what IDD is and the many contributions of individuals with disabilities in society. For example, at the school for individuals with IDD in Tanzania, understanding and acceptance of individuals with IDD improved when the school was built within the community (Stone-MacDonald, 2016). In the study by Samadi et al (2011) interviewing parents of children with ASD, the most common common source of information about ASD was through other parents who had children with ASD. Oral tradition is important in many countries and communities, including low resource ones. Community-based recreational therapies rely on oral education to complete various tasks, so it may have more success than other programs. In addition, 95% of parents wanted to get more information on ASD and its features, it just was not available to them (Samadi et al, 2011). Because of this interest, giving community members a resource to learn about IDD through an integration program may have success. Community members can learn about IDD directly from someone with IDD through interactions during recreational activities.

Other Benefits

In addition to responding to the barriers of geographic accessibility, service availability, service affordability, and acceptability, community-based recreational therapies have benefits

that suggest it might be a successful intervention program in low resource countries and communities. Not only do community-based interventions bring benefits to individuals with IDD, but they also benefit the community at large. Many of the activities associated with community-based recreational therapy promote healthy behaviors not only in individuals with IDD, but also in the community when integration and community participation are included in recreational therapy. Individuals within the community can benefit from the skills learned through all of the types of community-based recreational therapies. In a study on dance and music therapy benefits, not only did the participants with IDD benefit from the therapy, but the volunteers as well (Corbett et al., 2016). These findings were also seen in the interview-based research study on a theatre program for individuals with intellectual disabilities by Dickinson et al (2018). This can be especially helpful for things like physical exercise. This healthy behavior can benefit all community members, especially with the rise of diabetes in low resource communities and countries (Levitt, Steyn, Dave, & Bradshaw, 2011). All of the skills listed in Chapter 2 can benefit individuals within the community without IDD as well, while bringing the community closer together through a common activity.

In addition, community-based recreational therapies may help to reduce financial burdens in low resource countries and communities, through increased knowledge of professions in the community and increased workforce. For example, individuals who participate in horticultural therapy can learn the skills of agriculture, specific to the community. These skills can then be transferred to work, for the individuals with IDD and the typically developing peers that also participate in the program. More crops can be grown, through increased workers, which can bring income to the participants of the program and the community. Learning agricultural skills

can also increase healthy food sources for the community. These vocational skills can also be increased through art therapy, through the creation of cultural pieces of art specific to the community. These pieces of art can be sold for income or used for their purpose to benefit the community, like a woven basket to carry crops. Music and performance therapy can be used in to teach cultural songs and dances to individuals with IDD and participating normally developing peers. This could potentially also bring about profit, if the community has the means to perform dances for visiting tourists. The potential benefits to the community are very widespread with community-based recreational therapies and can be determined by the community how best they can be utilized.

As a whole, community-based recreational therapy plays a role in empowering, engaging, and promoting comradery within community at large. Working together towards a common activity or goal allows for meaningful relationships to form between all community members, including individuals with IDD. When stereotypes dismantle through engagement with individuals with IDD, the community may grow stronger as a whole unit.

Successful Examples of Community-Based Recreational Therapies

Though specific research on community-based recreational therapies in low resource communities and countries is scarce, there are examples of programs that have had success in these areas for individuals with IDD. These examples help to show the promise of recreational therapies in low resource communities and countries. The first example is the Creative Movement Therapy Association of India (CMTAI). According to their website, the purpose of CMTAI is to strengthen the ecosystem of creative movement therapy in India by building

awareness of the field, serving as a resource for practitioners, and instilling professional and ethical standards of practice (CMTAI, n.d.). CMTAI offers a certification course for individuals to train in dance therapy, as well as programs for community members to learn dance and movement therapy. The programs cater to all community members, but many individuals who participate have an IDD. The organization has published numerous research articles from their programs, showing the benefit they have had for individuals with IDD and other community members. These articles touch on the benefits of psychological awareness, self esteem, social skills, reductions in anxiety, and creative body expression for individuals with IDD and community members in their most recent edition of the Indian Magazine of Dane and Creative Arts Therapy (Dua, 2018; Kadam, 2018; Kashyap, 2018).

Another example of a successful community-based recreational therapy program in low resource countries and communities is the Special Olympics. According to Haas' (2012) report on the Special Olympics, Special Olympics is an international organization that utilizes sports in two ways to benefit individuals with IDD. First, the Special Olympics opens doors to sporting opportunities for individuals with IDD. Second, the Special Olympics uses sports as to promote inclusion, equality, and dignity for individuals with IDD on the playing field and beyond. Special Olympics uses sports to empower individuals with IDD to claim their basic human right to education, health care, and community life. Special Olympics has proven to have success in low resource countries and communities for individuals with IDD by promoting physical activity and health education. In addition, Special Olympics also puts major emphasis on community integration, by creating an arena where people with and without IDD can interact and break down stigmas and misperceptions. Further, many Special Olympic chapters have committees that

solely try and promote families to allow their children with IDD to engage in society and become involved in sports.

An example of the benefits of art therapy in low resource countries and communities comes from work by The Red Pencil Humanitarian Mission. The mission of The Red Pencil is to use the power of art therapy to help individuals who have been through overwhelming life circumstances in various locations around the world. According to their website, the Red Pencil is a volunteer-focused organization with over 1,300 certified art therapists who work collaboratively with community members to train and implement art therapy programs (Red Pencil, n.d.). The programs are designed to be sustainable, culturally appropriate, and long-lasting, so the community can carry on the art therapy programs after volunteers leave the community. Data collected by The Red Pencil on their program shows that 75% of participants who underwent art therapy sessions improved their ability to verbalize emotions, 79% improved their social competency, and 83% improved their emotional well-being (Red Pencil, n.d.). Though not specifically geared towards individuals with IDD, the program still caters to and benefits these individuals.

Summary

In summary, community-based recreational therapies may have benefit for individuals with IDD in low resource countries and communities. This chapter has a few main takeaways. The first is that individuals with IDD have many barriers associated with receiving medical care in low resource countries and communities. These barriers, geographic accessibility, service availability, service affordability, and acceptability, all play a role in limiting the likelihood for individuals with IDD in these areas from receiving care. Research points toward community-

based interventions as a way to alleviate some of these barriers for individuals with IDD (Maulik et al, 2007).

The next main takeaway is that community-based recreational therapies may play a role in alleviating some of these barriers. Community-based interventions are "multicomponent interventions that generally combine individual and environmental change strategies across multiple settings aiming to prevent dysfunction and to promote well-being among population groups in a defined local community" (Wandersman et al, 2003, pg. 441). When recreational therapies are combined with community-based interventions in low resource countries, benefits may be seen for individuals with IDD. However, this aspect of the thesis requires direct empirical study, since no trials were run in low resource countries or communities. Examples of successful programs given in this chapter do help give validity to the statements made about the benefits of community-based recreational therapies in low resource communities and countries.

The third takeaway is the adaptability of community-based recreational therapies, which might make it easier to implement in low resource countries and communities. For example, as long as the environment is safe and has enough room for all the participants, community-based recreational therapies can be held almost anywhere, in rural and urban settings. These types of therapies can be adapted to accommodate what is available in the community. Also, since integration and community involvement are beneficial in increasing the likelihood of benefits for recreational therapy, individuals with IDD can be integrated into pre-existing programs, so implementation of new programs is not always necessary. Further, recreational therapies as easily adaptable to resources. Many of these therapies require no outside resources and the ones that due can be utilized from resources already available to the community. Additionally,

community-based recreational therapies can be adapted to training level of the individuals leading programs. Though it is always better to have a trained professional leading community-based recreational therapies, it is not completely necessary, since participation in these activities bring about developmental skills on its own. Finally, and most importantly, community-based recreational therapies are adaptable to the culture of any given low resource country or community, since they use cultural elements like dance, music, art, and sports to bring about developmental change.

The final takeaway that community-based recreational therapy benefits not just individuals with IDD, but also the community as well. Many of the developmental skills that can benefit individuals with IDD can also benefit individuals without IDD. For example, diabetes has been on the rise in low resource communities and countries, so participation in physical exercise can bring about health benefits (Levitt, 2011). In addition, various elements of community-based recreational therapies can bring about financial benefits to low resource countries and communities, through increased understanding of community professions and increased workforce. Further, community-based recreational therapies empower and engage a community through the participation in one common goal. This can be important in low resource countries and communities, where a sense of community and comradery is of the upmost importance.

CHAPTER 4: DISCUSSION

The first goal of this thesis was to determine the benefits of recreational therapy for individuals with intellectual and developmental disabilities (IDD). These benefits were discussed in detail in Chapter 2. This chapter also discussed two components of recreational therapy that make it more successful: integration and community acceptance and involvement. New trends of recreational therapy have been to a more inclusive therapy that allow individuals with IDD to participate in a typical leisure lifestyle with their normally developing peers (Miller et al, 2009). Recreational therapies have also started to place more of an emphasis on community involvement and acceptance, with increased demand for community-based services (Carter et al, 2019). These two components, combined with the activities associated with recreational therapy, bring about increased benefits for individuals with IDD.

The second goal of this thesis was to discuss how community-based recreational therapy can be applied specifically to low resource countries and communities, with benefits to individuals with IDD and the community at large. This claim was discussed in detail in Chapter 3. The four barriers to medical care in low resource income countries are geographic access, service availability, service affordability, and acceptability. Geographic access focuses on barriers associated with distance, infrastructure, terrain, and indirect costs (Yao et al, 2013). Service availability refers to barriers associated the lack of services, staff, and resources for individuals with IDD in low resource communities and countries. Demand and wait time for services also play a role in this barrier to medical care. Service affordability refers to barriers associated with the cost of receiving care and the lack of government financial benefits, as well as the rates of poverty for individuals with IDD. Finally, acceptability refers to the beliefs held

by community members of individuals with IDD and the need for community education about IDD.

Community-based recreational therapies are a potential solution for these barriers. For geographic accessibility, community-based recreational therapies can be held directly in the target community for individuals with IDD. For service availability, with recreational therapy, individuals with IDD can be integrated into preexisting recreational activities, without the necessity to create a brand new program, with still the same increase in developmental benefits. For service affordability, community-based recreational therapy serve as a cost effective means to enhance other services that individuals with IDD may not be able to afford, without the need for many outside resources (ATRA, n.d.). Rates of acceptability may also increase through the use of community-based recreational therapies, due to recreational therapies being able to be tailored to cultural preferences of communites and countries. In addition, community-based recreational therapies benefit the community at large and can reduce financial burdens of a community or country.

Though limited research exists on the benefits of community-based recreational therapies for individuals with IDD in low resource communities and countries, the few that do help give validity to the assertion that these types of therapies could be beneficial in low resource countries and communities for individuals with IDD. The first example is from the Creative Movement Therapy Association of India (CMTAI), which is an organization that brings awareness to the field of dance therapy, provides resources for practitioners, and instills professional and ethical standards of practice (CMTAI, n.d.). This organization has seen improvements in psychological awareness, self esteem, social skills, creative body expression, and reductions in anxiety for

individuals with IDD who participate in their community dance therapy programs (CMTAI, n.d.). Special Olympics is another example of a program that provides benefits to individuals with IDD in low resource countries and communities, through empowering individuals with IDD through the use of sports (Haas, 2012). Special Olympics prides itself on promoting physical activity and health education to participants with IDD, while breaking down stigma and misperceptions of this population through community integration. The final example comes from The Red Pencil Humanitarian Mission. The mission of The Red Pencil is to use the power of art therapy to help individuals who have been through overwhelming life circumstances in various locations around the world (Red Pencil, n.d.). This organization has also seen improvements in self-confidence, social competency, and emotional-well being for participants (Red Pencil, n.d.). All of these programs help to give some validity to the assertion that community-based recreational therapies might have benefit for individuals with IDD in low resource countries and communities.

Future Directions

This literature synthesis identifies the potential for community-based therapies as methods for promoting positive perceptions of individual with IDD. Clearly, the proposals outlined here require direct study to determine their potential. For instance, recreational therapy is a western concept, so it is necessary to determine how it will translate over to low resource countries and communities. However, some examples, listed in Chapter 3, show promise to the practical implications of it in low resource countries and communities.

Further, there are few research studies that have been conducted showing the benefits of recreational therapy in low resource countries and communities. Research of recreational therapy benefiting individuals with IDD in the United States are interspersed amongst research of the barriers for care in low resource countries and communities and the benefits of community-based interventions in these areas. It will be important to determine if these types of therapies can be tailored to the culture of communities, to help alleviate barriers associated to care for individuals with IDD in low resource countries and communities.

Conclusion

This literature synthesis shows the benefits of recreational therapy and the benefits community-based recreational therapy can have on individuals with IDD in low resource countries and communities. I believe the original hypothesis, "if community-based recreational therapies are incorporated into low resource countries and communities, then accessibility, availability, affordability, and acceptability for individuals with IDD in these areas will increase and social, emotional, physical, psychological, behavioral, cognitive, and communication skills will improve", was supported through this thesis, in the theoretical sense. Future research that involves the implementation of a community-based recreational therapy program in a low resource community or country is needed. This research must involve directly working with the community at hand and discussing with the community their thoughts on community-based recreational therapy and how to successfully implement it. Though further research needs to be conducted with the actual implementation of one of these programs, this thesis helps to show the practical implications and promise of this type of intervention in the future for the benefit of individuals with IDD in low resource communities and countries.

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ACADEMIC VITA

Allyson Stump

Education

The Pennsylvania State University | Schreyer Honors College
University Park, PA
College of Health and Human Development | B.S. Communication Science Disorders
Minor in Global Health

Global Health Minor Fieldwork Placement
Tanzania
May 2019 – Jun 2019
Shadowed nurses in urban clinics, shadowed at the Dodoma School for the Deaf, presented a community outreach program, shadowed rural village mental health assessments

Council on International Educational Exchange (CIEE) Global Institute
England and Spain
Jan 2018 – Apr 2018
Global Health Track

Honors Research Study Abroad Program
New Delhi, India
Jun 2017 – Jul 2017

Languages: Intermediate American Sign Language, Intermediate Spanish

Research Experience

Laboratory for the Study of Visual Supports in Communication and Education
University Park, PA
Jan 2019 – May 2020
Undergraduate Student Thesis Researcher

- Conduct and write undergraduate thesis research (The Cause and Effect of Perceptions of Intellectual and Developmental Disabilities in Low Income Countries: The Benefits of Community-Based Recreational Therapy)
- Review and analyze research articles
- Attend weekly thesis research meetings and consultation meetings with professors from various fields
- Present thesis research at conferences

Augmentative and Alternative Communications Laboratory
University Park, PA

Sept 2017 – Sept 2018
Undergraduate Student Researcher
- Assist in two different research projects (Visual Scene Displays and Young Adults with Autism Communication Preferences)
- Code responses from recorded research sessions
- Attend weekly meetings with research supervisor

Conference Presentations

American Speech Language Hearing Association (ASHA) Convention
Orlando, FL
Nov 20-23, 2019
Undergraduate Poster Presenter, NSSLHA Member
- The Cause and Effect of Perceptions of Intellectual and Developmental Disabilities in Low Income
  Countries: The Benefits of Community-Based Recreational Therapy
- PROmoting the next GENeration of Researchers: Undergraduate First Author Recipient

Penn State University Student Research Symposium
University Park, PA
Dec 5, 2019
Undergraduate Poster Presenter
- The Cause and Effect of Perceptions of Intellectual and Developmental Disabilities in Low Income Countries: The Benefits of Community-Based Recreational Therapy

Employment

State College Area School District Job Coach
State College, PA
Aug 2019 – July 2020
- Give one-on-one support to students and adults with disabilities at their place of employment
- Establish and promote a safe environment for students to learn and grow vocational skills
- Lead conversations that develop students' emotional, communication, and social growth
- Attend monthly staff training sessions and complete weekly progress reports on individual students

ASL I Teaching Assistant
University Park, PA
Jan 2019 – May 2019
Graded assignments, held office hours, assisted students in ASL learning and understanding

Centre Region Parks and Recreation
State College, PA

Jun 2018 – Aug 2018
Summer Camp Leader
Planned and led camp activities, monitored children, organized field trips

Leadership Experience

Harmony
University Park, PA
Aug 2018 – May 2020
Instructor and Show Director, Executive Board Member
Theater Organization for Individuals (ages 3-45) with and without Disabilities

- Lead over 100 volunteers and students
- Plan showcases (large scale Disney productions, provided by Music Theatre International)
- Plan and run rehearsals
- Incorporate promotion of emotional, social, physical, and communicative skills into each rehearsal
- Assist with any medical and emotional needs of students
- Obtain sponsors and members

Penn State THON Dance Marathon
University Park, PA
Aug 2016 – May 2020
Family Relations Teen and Adult Coordinator, Adopt-A-Family Captain
Largest Student Run Philanthropy in the World Fighting Against Pediatric Cancer

- Provide emotional support for teenagers, adults, and families affected by childhood cancer
- Plan events and programs for teenagers and adults
- Facilitate interactions between families and 16,500 volunteers

Springfield THON Organization
University Park, PA
Aug 2016 – Feb 2019
Special Events Captain
Organized fundraisers for organization, attended weekly meetings, solicited sponsors

Extracurricular and Volunteer

Centre Region Down Syndrome Society Buddy Walk
University Park, PA
Oct 2019
Buddy Walk Team Captain
Created, promoted, and organized team, led fundraising initiatives, showed support for the rights, abilities, and potential of individuals with Down syndrome

National Student Speech Language Hearing Association (NSSLHA)
University Park, PA
Aug 2019 – May 2020
Member of the National and PSU Chapter
Attend monthly meetings, participate in community service hours, attend educational lectures on relevant topics to the field of Communication Science Disorders

Night to Shine Buddy Volunteer
State College, PA
Feb 2019 – May 2020
Prom for Individuals with Disabilities
Paired with individual with disability, promote a safe environment for social and emotional well-being and growth, assist with any medical and emotional needs of the individual

LifeLink PSU Mentor
University Park, PA
Aug 2018 – May 2020
Mentor Group for Special Needs Students 18-21 at Penn State University
Take assigned student to class, support student in learning, provide emotional support

Camp Can Do Volunteer Counselor
Hershey, PA
Aug 2018 – May 2020
Summer Overnight Camp for Children with Cancer
Monitor campers, plan and lead activities, provide emotional support, assist with medical needs

Schreyer Honors College Orientation Mentor
University Park, PA
Jan 2017 – Sept 2017
Attend monthly meetings, lead a group of Freshman Schreyer Scholars**,** encourage and promote future generations of the Schreyer Honors College, serve as a resource to mentees

Awards

- John W. Oswald Award for Social Services, Religious Activities and Student Government
- PROmoting the next GENeration of Researchers ASHA Convention Recipient
- Marie Radomsky and Vernon W. Ellzey Honors Scholarship
- Schreyer Academic Excellence Scholarship
- Penn State University Golden Key International Honour Society Invitee
- CIEE Education Abroad Scholarship
- Weaver and Sutherland HHD Scholarship
- Barbara Shannon Honors HHD Scholarship
- Penn State University President's Freshman Award