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Spring 2014

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Stuttering Therapy Via Telepractice in Kenya: An Overview

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Stuttering Therapy Via Telepractice in Kenya: An Overview

Kiama couldn't speak without stuttering. Some thought he was just stupid or attracting attention, but no matter how hard he tried, he couldn't stop. His biggest worry, however, was getting into secondary school. If he didn't do that, he was destined to become unemployed like many in his village; it wasn't uncommon for someone to end up on the streets drug-addicted, violent, and despicable. If he couldn't speak, he couldn't go to school, and if he couldn't go to school, he couldn't build a successful life for himself. He had heard about places in the big cities where there were people who could help him, but they were far away and much too expensive. The future looked bleak.

Although Kiama is a fictional character, his story parallels that of many people living in developing countries. In these countries, people have little access to services that people in developed countries take for granted. Speech-Language Pathology (SLP) services are no exception. In East Africa, for example, speech and language services are based out of only a few large hospitals found in the capitals of Kenya, Tanzania, and Uganda. Additionally, many or most of these SLP services are private and too expensive for the average client. To be more specific, Kenya's SLP services are all private and based out of Aga Khan, Nairobi, and Mombasa hospitals (Jochmann, 2006). To receive services, a client must be able to afford them and must have access to reliable transportation. Unfortunately, this is not viable for the overwhelming majority of Kenyan people who live below the poverty line in extremely remote areas.

For this project, I decided to look into the possibility of using telepractice as a method for providing speech and language services to people in remote areas of Kenya. For information and experience regarding working in Kenya with Kenyan people, I partnered with Dr. Debra Akre, the founder of Tembo Trading Education Project (TTEP). TTEP is a non-profit organization

based in Bellingham, WA that has founded self-sustaining schools and businesses in Kenya. TTEP also promotes critical-thinking based education and actively works to improve critical-thinking skills in the children they interact with.

For information and experience regarding speech and language services, I asked Dr. Barbara Mathers-Schmidt to be my advisor for this project. Dr. Mathers-Schmidt is the Chair of the Communication Sciences and Disorders Department at Western Washington University, and she specializes in therapy for those who stutter. Together with Dr. Akre and Dr. Mathers-Schmidt, the project has evolved and narrowed to focus on providing treatment that is developed-country quality via telepractice for those in remote areas of Kenya who stutter. This paper will discuss stuttering, the viability of telepractice as a method for provision of speech and language services, and the logistics of working internationally in a country like Kenya.

Stuttering is one of the more obvious speech impediments and is one of the most easily recognized. The Stuttering Foundation (2014) defines stuttering as “A communication disorder in which the flow of speech is broken by repetitions (li-li-like this), prolongations (lllllike this), or abnormal stoppages (no sound) of sounds and syllables” (para. 1). These interruptions in the fluency of speech cause conversations, and speaking in general, to require a lot of focus and can be exhausting for the person who stutters. Statistically, 5% of children will have a period of time during childhood where they exhibit stuttering and disfluency of speech (The Stuttering Foundation, 2014). However, the majority will recover and only 1% will continue on with a long-term problem. Additionally, stuttering occurs in four times as many males as females. Along with the disfluencies in normal speech, a person who stutters may exhibit unusual facial expressions or body movements (The Stuttering Foundation, 2014). These expressions are commonly associated with the increased effort needed for a person who stutters to speak clearly

and fluently and add to stuttering's obviousness.

The conspicuousness associated with stuttering is known to have a significant emotional effect on people who stutter. According to Farnsworth (2011), people who stutter may not be as outgoing as they would be without stuttering. Additionally, they may avoid situations where they are required to speak in an effort to keep from being laughed at or to keep from having to clarify any misunderstandings. Another common trait found in people who stutter is guilt and the feeling that if they only tried harder or were stronger, they wouldn't stutter (Farnsworth, 2011). This feeling can also come from thinking that they are taking up too much of a communication partner's time due to their slow and disfluent speech. Anxiety and depression are also associated with people who stutter, but are both thought to stem from another characteristic, the feeling that speech is out of their voluntary control. Farnsworth (2011) states that:

People who stutter may feel as if they cannot control what their mouths do and have no control over when and where they are fluent. They often ascribe their stuttering to external factors in a situation: the location, the listener's reaction, the presence of people in the vicinity who may overhear them stuttering, or how much sleep they got the night before. (para. 7)

This way of thinking may be detrimental to the therapy process because a client isn't well equipped to fix something they think happens by chance. These attributes of unpredictability and unacceptability associated with stuttering may cause many emotional changes in a person who stutters, changes that should be taken as seriously as the speech impediment itself.

Multiple explanations have been proposed regarding the cause of stuttering. The Stuttering Foundation (2014) states that the biggest factor is genetics, with 60% of people who stutter having a family member who also stutters. Second, Onslow and O'Brian (2013) note that

“brain imaging data suggest that [stuttering] involves a problem with neural processing of speech, linked to structural and functional anomalies at brain sites responsible for spoken language” (p. 112). Finally, lifestyle dynamics can contribute to or worsen stuttering. The Stuttering Foundation (2014) reports that high stress situations, high expectations, and/or fast-paced situations are more likely to cause a person who stutters to tense and stutter more, as well as create a problem in someone who does not originally stutter. The previously mentioned list is not all-inclusive, as other causes and combinations of causes may also result in stuttering or make existing stuttering worse.

Fortunately, there are many helpful tools and questionnaires used by SLPs to assess clients who stutter, regardless of etiology. For example, a questionnaire used to assess an adult or adolescent’s perspective on their deficiency is the Erickson S24 scale (The Fluency Center, 2010). Another valuable assessment and evaluation tool is the CALMS Assessment for School-Age Children Who Stutter. CALMS stands for cognitive, affective, linguistic, motor, and social, which are the five areas addressed within the assessment (The Fluency Center, 2010). Other recognized assessment batteries for stuttering are, but not limited to, the Stuttering Severity Instrument 4th Edition, The Behavior Assessment Battery for School-Age Children Who Stutter, the Test of Childhood Stuttering, and the OASES, or the Overall Assessment of the Speaker’s Experience of Stuttering (Healey, 2012). Assessments vary in their specific objectives; some may focus on the severity of the client’s stuttering while others are used to assess aspects such as emotional, social, and/or educational impacts. The goal of stuttering assessment, however, is to assist clinicians as they design a holistic therapy approach for their client.

After a potential client has been assessed, an SLP may begin therapy sessions. According to the Stuttering Foundation (2010), the length of therapy sessions varies based upon the severity

of the client's stuttering and their availability for scheduling. Some programs have a set amount of time; Western Washington University, for example, has 45-minute sessions that rotate around the university's quarterly schedule. Additionally, the number of sessions each week is dependent upon the client's severity, availability, and ability to pay. There are also some intensive programs that run for a shorter amount of time with more sessions per week, 40 hours across 3 weeks, for example (The Stuttering Foundation, 2010). These logistical decisions, however, are made after the client's assessment has been completed and interpreted.

In addition to logistics, an SLP must decide between various treatment methods encompassing different methods and strategies, a decision that must be made with the client's specific needs in mind. The forms of therapy for stuttering have evolved dramatically over time. According to Saltuklaroglu and Kalinowski (2005), "one of the first documented attempts to remove stuttering behaviours was by Demosthenes (384–322 BC), the Greek orator who blamed his stuttering on a weakened system. To remove the overt stuttering events from his speech, he spoke with pebbles in his mouth" (p. 362). Another early treatment attempt was cutting a wedge-shaped piece out of the client's tongue, a practice that stemmed from the belief that stuttering was caused by an enlarged tongue. Self-induced rhythmic speaking strategies were implemented, garnering positive results for stuttering reduction, but not eliminating unnatural sounding speech. Even completely ignoring the presence of a problem was used, although the recovery rates were obviously equal to those of spontaneous recovery rates, and therefore no more effective. Over time, many therapy techniques have been implemented and tailored to clients' requirements, with various degrees of success.

It is important to note that therapy will have a higher likelihood of being successful if it is implemented as early as possible. Fortunately, according to Onslow and O'Brian (2013),

diagnosis of stuttering in early childhood is not very difficult due to the distinctive speech interruptions and effort demonstrated by people who stutter. This push for early intervention is also supported by the data showing that stuttering is less “tractable” and more likely to relapse during school-age life than pre-school age. Additionally, if a child begins to show emotional distress or use strategies to avoid talking or interactions, early and immediate intervention is recommended. There is a quandary for therapists, however, stemming from the fact that many children who stutter in early childhood will recover without the need for clinical treatment. If treatment is initiated at an early age and the client eventually stops stuttering, there may be no way to tell if the therapy caused the change, or if the client simply outgrew the issue; there is a chance that therapy and the costs associated will be rendered unnecessary. A generally accepted practice to account for this issue is for “speech pathologists to monitor children for signs of natural recovery for up to 1 year before beginning treatment.” (Onslow & O’Brian, 2013, p. 114). Early intervention, when possible, is an invaluable part of the therapy process and can assist in meeting therapy goals.

Each client garners an individualized set of objectives and goals, but there are also general, overarching goals for stuttering therapy. According to the Stuttering Foundation (2010), goals for therapy should include:

Reducing the frequency of stuttering; decreasing the tension and struggle of stuttering moments; working to decrease word or situation avoidances; learning more about stuttering; using effective communication skills such as eye contact or phrasing; and determining whether goals relate to long-term change or to meet a specific short-term need, such as a job interview. (section 5)

Ideally, after therapy a client will be able to speak more clearly and fluently and will also be

more able to combat social and emotional distress caused by the stigma of stuttering. The potential efficaciousness of stuttering therapy goals is exemplified in the transformation seen in King George VI. With the help of a brilliant therapist, the British monarch overcame a severe stuttering problem and gave many influential and important speeches. His success can be attributed to the advantage of having a therapist who knew how to help him acquire the skills needed to achieve his goals, both therapeutic and personal.

People living in rural areas often encounter problems in getting access to this advantage, problems that may be solved with a new therapy provision method called ‘telemedicine.’ According to Mashima et al. (2003), “Telemedicine is defined as the use of telecommunications technologies to provide medical information and services” (p. 433). Telemedicine is not limited to speech-language pathology, however. Mashima et al. (2003) notes that, “Telemedicine evolved into telehealth with the passing of the 1997 Comprehensive Telehealth Act, which expanded the focus from physician-only services to services provided by other health professionals including speech-language pathologists” (p. 433). This relatively new technology can be used by medical professionals within any field to link clinicians and clients who would otherwise not be able to meet.

In regards to speech-language pathology specifically, use of technology for therapy purposes is now referred to as ‘telepractice’. Edwards, Stredler-Brown, and Houston (2012) support this by citing the American Speech-Language-Hearing Association’s (ASHA) position statement, which says:

Telepractice is an appropriate model of service delivery for the profession of speech-language pathology. Telepractice may be used to overcome barriers of access to services caused by distance, unavailability of specialists and/or subspecialists, and impaired

mobility. Telepractice offers the potential to extend clinical services to remote, rural, and underserved populations and to culturally and linguistically diverse populations. (p. 228)

This ability to connect people from different areas may be a promising step towards rectifying the imbalance of service provision that is found between developed and developing countries. Telepractice may be used for both the assessment and treatment of speech and language deficits, and may also include “supervision, mentoring, and pre-service and continuing education” (Professional, 2014). The former activities, however, are not technically included under ASHA’s official definition of telepractice, but are classified under telesupervision or distance education to prevent misunderstandings. The lack of physical boundaries inherent in telepractice does not mean that professional regulations and policies do not apply, however. According to ASHA, “there are no inherent limits to where telepractice can be implemented, as long as the services comply with national, state, institutional, and professional regulations and policies” (Professional, 2014).

There are two basic types of telepractice that an SLP can utilize, depending on the needs of a specific client or caseload. Synchronous telepractice services, or “client/patient interactive” services are “conducted with interactive audio and video connection in real time to create an in-person experience similar to that achieved in a traditional encounter” (Professional, 2014). This would typically be accomplished using videoconferencing software on a computer or potentially a telephone conference. This type of telepractice could also facilitate multiple clients meeting with one clinician at a given point in time or consultation meetings between professionals. The second type of telepractice is asynchronous, where “images or data are captured and transmitted (i.e., stored and forwarded) for viewing or interpretation by a professional” (Professional, 2014). Those files could include testing results, audio clips from a treatment session, or clinician notes.

Synchronous telepractice is a direct connection between a clinician and a client, whereas asynchronous telepractice involves the sharing of client information between professionals. Of course, there can be combinations of these two kinds of services, as well as combinations including telepractice and traditional face-to-face therapy sessions.

When conducting a therapy session using a chosen telepractice method, certain regulations and privacy policies are still actively in place. The law currently in place in the United States that regulates the privacy of medical records and information is the Health Insurance Portability and Accountability Act (HIPAA). This act requires certain privacy measures be taken into account, but isn't always explicit on how this is to be accomplished. In regards to the security of videoconferencing software, ASHA states that "there are no absolute standards that dictate which software programs meet all requirements...Security of treatment rooms and remote access to electronic documentation must be considered to protect client/patient privacy and confidentiality at both sites" (Professional, 2014). There are many different software applications that may be used, Microsoft Office Live Meeting or Adobe Connect for example. These applications, as well as the location of the client or clinician, may vary in security and privacy and require a clinician to obtain informed consent forms from the client or client's parent/guardian.

Other regulations pertaining to telepractice involve clinician certification. As telepractice within the United States becomes an increasingly viable and efficient therapy method, more states are beginning to enforce legal requirements. Currently, "telepractitioners must be licensed in both their home states and in the states in which the clients/patients reside" (Professional, 2014). Each state's regulations may be slightly different, requiring a clinician interested in using telepractice to verify licensing information prior to beginning therapy. Schools, if they are the

chosen setting for telepractice, may also vary in regards to requiring a teaching certification or specific certification in addition to ASHA certification. This sensitivity to regional legislation also extends to telepractice on an international scope. According to ASHA “it is important to confirm requirements, if they exist, for the practice of audiology or speech-language pathology in the specific countries [and] consult additional resources on providing services with cultural and linguistic sensitivity” (Professional, 2014). The addition of foreign dialects/languages and cultural practices to a client’s diagnosis will have a significant impact on a clinician’s therapy strategy, and therefore must also be taken into consideration before therapy services can be provided.

As with anything, there is a cost associated with receiving professional services or therapy. Typically, therapy in a face-to-face setting is covered by medical insurance, whether private or federally provided. Therapy via telepractice, however, relies upon state legislature regarding reimbursement. According to ASHA, “there is a trend for states to pass legislation mandating coverage of telepractice. Generally, the mandates require health insurers, subscription plans, and health maintenance organizations to cover the cost of health care services provided through telepractice on the same basis as those provided through in-person visits” (Professional, 2014). Each state, as mentioned, has specific regulations for telepractice licensing and certification, as well as the process for payment and reimbursement. Medicaid is a federally provided insurance carrier for low-income clients and may authorize the use of telepractice as a therapy method. Like with private health insurance, however, the ultimate decision is up to state legislature; specific services or delivery methods may not be covered by Medicaid. Payment for telepractice does not differ much from other medical services with regards to payment, but it does require finding out if the client’s specific insurance provider will cover it. If services via

telepractice are not covered, the client will need to pay “out-of-pocket” if they wish to continue therapy.

When all the administrative duties needed to “enroll” a client and verify clinician licensing, client privacy, and insurance coverage are completed, another aspect of telepractice needing attention is the client’s side of the connection. Someone needs to be with the client to set up the technology and connection device, inform them about protocols, and facilitate throughout the therapy session. ASHA states that, “although only certified and/or licensed audiologists and speech-language pathologists can provide professional services via telepractice, appropriately trained individuals may be present at the remote site to assist the client/patient” (Professional, 2014). These “eHelpers” can be a family member of the client, a medical professional, or a friend; as long as privacy and licensing regulations are being followed and as long as the facilitator is properly trained and informed, it does not matter who they are. However, the type of helper needed varies depending on the type of services being provided, and it is the responsibility of the audiologist or SLP to make sure that all details are taken care of (Professional, 2014). The use of an “eHelper” is designed to make therapy provision and initiation run as smoothly as possible, and to decrease the distance and potential misunderstandings between the client and their clinician.

Therapy via telepractice has many advantages, especially in regards to eliminated geographical boundaries, but has not shown a significant advantage over face-to-face therapy sessions in regards to client progress. According to a literature review by Axani, Flottesch, Morrill, and Nickel (n.d.), studies suggest that:

VC is as reliable as FTF for conducting assessments with adults. In addition, the researchers reported no significant effect of age, education, technology experience and

gender on performance in either of those settings. This suggests that videoconferencing methods of assessment and intervention can be made accessible to a variety of people with varying technical abilities. (p. 4)

In the article, VC stands for videoconferencing and FTF stands for face-to-face, and each service delivery method has been shown to produce approximately equal results. Grogan-Johnson, et al. (2013) also supports the comparable results between telepractice and traditional therapy outcomes in a study that found that “the results indicated that children aged 6 to 10 years with speech sound disorders improved their speech sound production during the 5-week summer intervention program and the amount of progress was similar whether services were delivered by telepractice or in a side-by-side model” (p. 217). In another study aimed at comparing telepractice and traditional outcomes, the Clinical Evaluation of Language Fundamentals – 4th Edition (CELF-4) was administered to children ages 5-9 via online assessment as well as traditional face-to-face assessment simultaneously. After all variables were controlled and taken into account, “no significant differences were found between online (VC) and FTF raw scores; thus, their findings have demonstrated the validity and reliability of online assessment using the CELF-4” (Axani et al., n.d., p. 6). These studies are encouraging, however, because they show that telepractice is comparable to face-to-face therapy and can be used to provide quality services from a distance.

The selection of assessments and testing procedures must be done very carefully, however. In ASHA’s list of guidelines for telepractice, testing is addressed and they state:

Clinicians who deliver telepractice services must possess specialized knowledge and skills in selecting assessments and interventions that are appropriate to the technology and that take into consideration client/patient and disorder variables. Hence, assessment

and therapy procedures and materials may need to be modified and adapted to accommodate the lack of physical contact with the client/patient. These modifications should be reflected in the interpretation and documentation of the service. (Professional, 2014)

When selecting tests and assessment materials, it is best to find a test that has already been modified specifically for an online proctoring situation, as opposed to simply modifying a test protocol manually. If a test protocol is not designed for a telepractice setting, but is modified to use, the normative data is likely to become inaccurate and unreliable. Some test providers have taken this into consideration and have created telepractice-friendly protocols, the PLS-5, CELF-4, and Test of Narrative Language for example. These tests will have normative data that will already include variables associated with telepractice, and will therefore be more accurate for use in an online format. In the United States, these variables, regulations, and standards are outlined in detail by ASHA and various other organizations, and serve to organize and standardize provision of sophisticated and necessary therapy.

A country whose therapy infrastructure is in great contrast to the organized, regulated therapy sessions seen in the United States and other developed countries is Kenya. In a book about his country, former president and prime minister Jomo Kenyatta (1965) summarizes his country by writing, “The key to this culture is the tribal system, and the bases of the tribal system are the family group and the age-grades, which between them shape the character and determine the outlook of every man, woman, and child in Gikuyu society” (p. 297). Kenya, although working towards becoming more modern and unified as a nation, still organizes around tribal outlines and customs. The two official languages of Kenya are English and Swahili, which exemplifies the middle ground Kenya holds between the modern world and tribalism. Some of

Kenya's better known tribes are the Kikuyu, Swahili, and Kamba people, Bantu in origin, as well as the Maasai and Luo people, Nilotic in origin (Sobania, 2003, p. 4). These different tribes are spread out across the Kenyan land and uphold Kenya's economy, which is based mainly on agriculture. According to Sobania (2003), "almost 65 percent of all export earnings are from agriculture, with tea, coffee, and horticultural products – including cut flowers, fruit, especially pineapples, and nuts such as cashews – the major sources" (p. 6). This country is rich in culture and trade, yet is still working to join the ranks of developed nations.

People in Kenya struggle to get even basic medical services, yet most live in abject poverty and would be unable to pay for adequate services even if they were made available. Stevenson (2013) aptly paints a picture of the situation when she writes, "Sub-Saharan Africa, of which Kenya is a part, rides on a fine line of subsistence...half of the world's poor live in this area" (p. 150). To compound the inaccessibility of services, speech therapy in Kenya is private and therefore has a fee, effectively ruling out the half of Kenya that is unable to pay. Yet even if speech therapy services were free and implemented in schools, provision would still be lacking. Stevenson (2013) notes:

The numbers of primacy-age students enrolled in school jumped dramatically...because the government offered free primary education. Nursery school, however, is still not free, even though students have to complete one or two years of nursery school before they are accepted into primary school. This means that those who are from extremely poor areas may not even enter the educational process at all. (p. 120)

The conditions and options for someone needing speech and language attention in Kenya is a very different scenario than those that are expected in a developed country.

In addition to less than ideal infrastructure, Kenyan people also hold specific views in

regards to medical disorders and their treatment, views that often hinder Western medicinal advances. According to Miller (1984), “traditional healers are still the first line of defense against illness for an estimated 75 percent of the population, and a great many Kenyans have no access to Western medicine” (p. 82). For the large majority of people who live in rural areas, the easiest and most efficient medical treatment comes from local healers. This also eliminates the intimidation factor associated with traveling to a large city. Miller (1984) points out that “local healers are readily accessible, may have knowledge of the patient’s family, are culturally comfortable, usually inexpensive, and are particularly useful in problems of anxiety, stress, and mental anguish” (p. 82). In other African countries, like Tanzania, traditional healers have worked alongside Western-trained doctors, but because very little is known about traditional Kenyan medicine it had not been pursued in the 1980s when Miller published his book. Western medical practices are more prevalent in Kenya now, and hospitals have been built in the large metropolitan areas, but its effects are still combatted by the convenience of local traditional healers.

A non-profit organization called Yellow House Children’s Services reports that “Kenya alone has an estimated 1.8 million individuals with disabilities under the age of 19, only 27,000 who are currently in school. Whilst there is a referral, assessment and school placement system in place, the reality and the quality of services within the system vary widely” (Speech Therapy, 2008). The amount of need for SLP services is staggering and is not adequately covered by the few SLPs that work in the major cities: Nairobi and Mombasa. Yet there is no program within Kenya that trains students to fill these positions. The closest option is a three-year Bachelor of Science in Speech Language Therapy program that was started at Makerere University in Uganda in 2008 (Speech Therapy, 2008). This program has successfully graduated a couple

“cohorts” of students and these students are now working throughout East Africa, but the number of SLPs can still be humorously described as “6500 giraffes per clinician” (August, 2009, para. 1). Current statistics regarding the numbers of Kenyan children in school, the number of people needing SLP services, or the number of PWS in Kenya are not readily available, along with many other facts about Kenya, making the task of identifying the extent and specificity of need difficult. However, the Kenya National Bureau of Statistics estimated in 2012 that approximately 1.8 million children were enrolled in secondary school during 2011 (Secondary, 2012). These statistics don’t match well with the numbers posited by Yellow House, but the message is still the same: there are multitudes of Kenyan children with disabilities who desperately need speech and language services.

Fortunately, there is some infrastructure already in place within Kenya for provision of services. The previously mentioned Yellow House Children’s Services was founded in September of 2010 and provides free or affordable services in four locations across Kenya. Additionally, there is a relatively new body of SLPs and people specializing in speech and language services known as the Association of Speech and Language Therapists Kenya (ASLTK) (Speech-Language, 2014). They have had five conferences so far, each one increasing in attendance and collaboration, and according to their website they currently have approximately 20 members. They also meet monthly to assess and discuss goals and strategies. Finally, there is a Centre for Child Development and Education based in Nairobi that works to increase awareness about speech therapy and come up with sustainable ways to provide SLP services, especially in more rural areas. Due to the small number of SLPs, however, they work mostly with speech therapist assistants (Speech-Language, 2014). Of course there are many humanitarian organizations, such as Operation Smile, that travel to Kenya, but these are not

permanent, and, again, are usually based in the large cities. Additionally, Dr. Akre reports that a legislative act was recently passed called the Kenya Basic Education Act of 2012, which requires that all students with disabilities be integrated into the classroom. However, the instructors are provided no instruction on how to make this happen (personal communication, May 2, 2014). Despite the good work that these organizations do, they do not begin to address the needs of people who live outside these large cities.

Ngomano is a perfect example of a rural, unserved village in the heart of Kenya, although it has many more positive attributes than most other villages. It lies just off the road between Nairobi and Mombasa, on the East Coast, but the journey to get there takes an extremely long time due to the conditions of the “roads.” Stevenson (2013) writes, “Ngomano used to be like most rural Kenyan villages, and possibly even most rural African villages. Almost 100 percent unemployment, crops drying up from drought, diseases like AIDS and malaria unchecked, education available for only the wealthy few, hope gone” (p. 26). The difference came when Dr. Debra Akre, along with Tembo Trading Education Project and the Clay family founded Clay International Secondary School there in 2005. Even with the boost from adding a school, however, basic medical attention is available only once a week, provided by a traveling nun named Sister Frederica who drives around in a Land Rover dispensing medicine and giving shots. What aren’t provided are speech and language services. A child in Ngomano who stutters, for example, would have to find a way to be taken to one of the big cities where therapy services are provided. If they or their family were unable to pay for the transportation or the services, the child would most likely be pulled out of school and become unemployed with no future. In Kenya, education is the key to building a life and competition is intense. A person who stutters will not be able to start or complete that education without therapy services.

With the previously mentioned information regarding stuttering, telepractice, and Kenya, the idea for a sustainable way to provide therapy to people who stutter in rural areas of Kenya began. It is not a new idea, but is one that isn't currently being tried in Kenya. My advisor for this proposal, Dr. Barbara Mathers-Schmidt, has had direct experience working in Kenya with people who stutter. One boy in particular, Joe (this name has been changed for privacy purposes), stuttered so severely that he rarely joined in or spoke. In an article about the experience, Dr. Mathers-Schmidt (2004) writes, "[Joe] spoke in English and Swahili during our time together and stuttered in both languages...He explained that he had been stammering since he was about four years old. He had no idea what caused his stammering, although he did recall that one of his uncles also stammered" (para. 4). When asked what he thinks when he stutters, Joe explained that "he doesn't know exactly where or how the sound stops, but he is aware of working hard and then getting tired" (2004, para. 5). Joe's stuttering had barred him from entering the education system and he had fallen onto extremely hard times before meeting with Dr. Mathers-Schmidt.

During their interactions, Dr. Mathers-Schmidt discussed the numbers of people who stutter worldwide, the causes of stuttering, and the neural pathways involved in speech, giving Joe an idea that he wasn't alone in his struggles and an idea of what was going on when he stuttered. To help Joe overcome some of these difficulties, Dr. Mather-Schmidt helped him practice some "easy speech" strategies, as well as reviewing the *Self-Therapy for the Stutterer* book. Additionally, Dr. Mathers-Schmidt used video-recordings for Joe to demo his practice and his progress (Mathers-Schmidt, 2004). Dr. Akre's story intersects with Joe and Dr. Mathers-Schmidt's story because she transported the video-recordings back and forth during her various trips to Kenya. This experience involving Joe, Dr. Akre, and Dr. Mathers-Schmidt happened

before online video conferencing capabilities were readily available, making physically transporting the videos a necessity. It is here that this project comes in.

The premise for my proposal is very similar to the experience had by Dr. Mathers-Schmidt, with the addition of technological advances and Internet connection. This proposal, however, contains a large number of variables that can greatly influence the viability of the project. Advantages and disadvantages to each piece of the project are addressed, but are by no means an exhaustive list. This proposal is not a formal research project that involved interviewing subjects or going to Kenya to physically test the possibilities and confirm them. It is designed to be an overview or a starting point for anyone interested in pursuing telepractice in Kenya. It is designed to discuss the many questions and variables raised by this project and account for them as best as possible.

To begin, the question of where this project could be implemented must be answered. A logical conclusion could be a village like Ngomano. According to Dr. Akre, spread throughout Kenya are groups of four or five villages that all share a common secondary school. If equipment and staffing were accounted for, the school could incorporate a clinic, like many schools in developed nations do. This is advantageous for multiple reasons. First, it takes advantage of existing infrastructure and doesn't require building new facilities. Second, it is a local alternative to making the long trip to one of the big cities for the same services. People needing services are much more able and willing to travel to a nearby school than to a distant metropolitan area. There are also disadvantages, however, including lack of formally trained professionals and questionable Internet access.

Another possible option for a location would be to take advantage of a traveling health provider like Sister Frederica, a medical doctor, who drives around dispensing medicine and

providing medical care. She works on a weekly cycle, traveling to Ngomano and the surrounding area with her Land Rover that has been converted into a mobile clinic. If equipment and training or an eHelper were provided, regular therapy sessions could be performed during Sister Frederica's stops. Advantages to this are, again, use of existing infrastructure and a local alternative for people highly unlikely to be able to make it to the bigger cities. Disadvantages might be technological breakdowns due to the elements, lack of a well-lit, acoustically optimal therapy area, and reliance upon Sister Frederica's, or a similar person's, schedule. The "clinic" location would need to take advantage of existing local resources and be easily accessible to the people it would be serving.

Finding a site leads to the next question, the identification of clients. As mentioned earlier, it is fairly easy to identify stuttering in a potential client due to the obvious disruptions in fluency of speech. Also, a potential client will most likely already be aware of his or her problem. If an eHelper is present at the school where the "clinic" is set up, or is part of a mobile clinic setting, they may be able to interact with potential clients and assess their need. Additionally, telepractice assessments may be done by the SLP to determine the severity and type of stuttering, as well as the type of treatment that would be most beneficial for the client. Advantages to using an eHelper are the personal element of having a clinician there in person, as well as their potential knowledge of the client's surroundings and situation. A disadvantage may be the lack of professional training or expertise in the field of stuttering or a lack of assessment resources. Advantages to assessing potential clients via telepractice could be the increased amount of knowledge held by the SLP, an increased amount of assessment materials readily available to the clinician, and connecting the client and clinician at an earlier point in the therapy process. Potential disadvantages include the differences in norms when using modified

assessment tools, an impersonal feel when first building rapport with a client, and a variable Internet connection.

Finally, an SLP may decide to travel to the location where telepractice will be provided to meet and identify clients in person. Possible advantages to this method are the personal feel that comes with meeting a client face-to-face, more detailed communication with the client's parents/guardians, and less ambiguity for both parties. Some disadvantages could be the time between meeting the clients and returning to the United States to begin therapy, or potential confusion about why the clinician can't just stay to continue with therapy. Identifying potential clients must be done efficiently, but also in a way that reduces the stigma attached to therapy services and encourages the client and their family to become proactive and informed.

This proposal relies heavily on the presence of a knowledgeable person on site with the client. This person, however, does not need to be an SLP, although that is an option. SLPs who are interested in spending some time working internationally or in a humanitarian capacity may be a valuable asset to starting and running a telepractice program in a rural area. They would be advantageous because they would be able to more efficiently identify and assess clients. Another option is a Speech-Language Pathology Aid (SLPA), a graduate student, or an undergraduate student in Speech and Hearing Sciences. If they have been instructed as to how to proctor various tests and select clients, they may be able to lessen the strain on the SLP working from the United States. These two options, however, are not sustainable due to the short periods of time that people, especially students, would be able to dedicate away from their lives in the United States. The most sustainable option would be to train someone already working at the school or someone related to and familiar with the area and customs. The advantages to this are their cultural sensitivity, lack of potential language barriers, and extended period of availability.

Disadvantages are potential lack of adequate training and lack of experience with technology.

The eHelper position carries a large part of the viability of this project and could certainly cause the success or failure of the entire thing.

Another one of the biggest components to this project is technology and the logistics of connecting two very distant countries. Dr. Akre has been in contact with a group called Hackers for Charity (HFC), a group that, “employ[s] volunteer hackers and technologists through [their] Volunteer Network and engage[s] their skills in short projects designed to help charities that can not afford traditional technical resources” (Who We Are, n.d., para. 3). They specialize in all things technological and they have a significant interest in providing education resources to people in remote areas. One of their contributions could work with this project and is called “RuggedPi.” The RuggedPi is a plastic, hand-sized briefcase that houses hardware, wireless Internet capabilities, solar charging panels, and other intricate technological advances. In the tests Hackers for Charity has conducted, they loaded it up with free educational resources that can be accessed online, resources such as Khan Academy, GCFLearnFree, and RACHEL materials. It is meant to work in conjunction with anything that has wireless Internet capabilities, including smart phones, tablets, and computers (Education, n.d.). The professionals at HFC recommend an Acer C7 Chromebook as the “client” to the RuggedPi because of its durable nature, but that is not the only compatible arrangement. Using this technology for the purposes of providing therapy services for stuttering could entail downloading various stuttering materials and assessment protocols onto the RuggedPi system for use by the facilitator. Use of the RuggedPi in conjunction with a tablet or laptop could provide a client with stuttering resources, as well as connect them with an SLP who can help them implement and practice with those resources.

The question of connection to the Internet while out in rural Kenya seems to have a deceptively simple answer. According to Dr. Akre, all that is needed is a smartphone or device that can connect to the Internet via data coverage and can create a hotspot. This may seem ridiculous, but despite the abject poverty that is found in Kenya, there are cellphone towers everywhere and everyone has some sort of cellphone. This juxtaposition found in Kenya is described by Stevenson (2013) when she writes:

Some things seemed as familiar as a favorite slipper...the cut and color of people's faces, an explosion of Goodwill clothing, the lilt of the accent. But other things were surprising; electronic fingerprinting at passport control, glass-clad artistic office buildings, huge billboards advertising wireless service, cell phones in everyone's hands" (p. 9).

In the village of Ngomano, Dr. Akre has consistently been able to access Internet coverage on her phone during her many visits. If a smartphone were included with the RuggedPi and tablet, or just with the tablet, a wireless hotspot for the purposes of a telepractice therapy session could be created just about anywhere. Another future Internet option lies in Microsoft's 4Afrika Initiative, a push to increase connection access across Africa. Specifically in regards to Internet connection, they have announced the White Space Project, which aims at taking advantage of unused broadband frequencies in television signals as a mean to broadcast Internet access into Kenya (White Spaces, 2014). In various trial runs, the project has proved to be successful in Kenya's Rift Valley, a university in Tanzania, and another trial in South Africa (Kermeliotis, 2013). A significant disadvantage, however, is that this technology is very likely to get hung up in legislative processes, and therefore probably won't be available in the near future. The initiative is still there, however, and as time goes on, Internet availability will increase throughout Kenya.

All of the previously details that go along with this proposal have a cost to the client and their family, as well as the service providers. For the clients, Dr. Akre advised that the services not be provided free of charge, even for clients from extremely impoverished families. She recommended this because when something is given away freely, the recipients are more likely to value it less. Giving the services a small fee instills a sense of value. This fee, however, doesn't need to be monetary. Dr. Akre suggested that the fee be based on what the family can provide, like a chicken or homemade ware that has value for the family. Corbett and Fikkert (2012) underscore this by saying, "acting as though they are destitute does more harm than good, both to them and to ourselves" (p. 104). A situation where everything is free creates a community with very little buy-in and increases the likelihood that the community will not value the project, and take it for granted.

The cost to the service providers is much more than what the client will pay, especially at the onset, and will require some creative fundraising strategies. A few possibilities are a fundraising push by NSSLHA chapters, especially if a university were to adopt this project. Other more traditional fundraising methods may also be used; the people organizing the fundraisers are free to raise funds how they deem most appropriate. Donations, obviously, are always accepted, and various aspects of the project may rely upon donated materials. These items could be, but are not limited to, assessment materials, technological equipment, paper and laminating services, and assistance with regards to Internet or cellular connection. The fees and costs must be on a sliding fee scale, according to Dr. Akre, and can't be perfectly tabulated unless the project is physically started. Many of the items needed for the project are much cheaper if purchased in Kenya, and therefore would need to be loosely added to the list of costs. Additionally, with changing exchange rates between Kenyan shillings and American dollars, the

estimated prices could fluctuate daily. The bulk of the cost for this project lies on the shoulders of whoever decides to take it on and must be tabulated loosely with Kenyan variables taken into consideration.

Once there are adequate resources and finances to begin, the potential clients and their parents need to be made aware of the services available to them. This could be accomplished by the eHelper traveling to various villages spreading the news and/or handing out brochures. Once a family and client are interested and ready to begin the process, intake questionnaires assessing ability to pay, client information, and family history must be filled out. Along with these questionnaires, it would be good to have some brochures for the parents to look at. These brochures would outline the therapy process and what they can expect, as well as discuss details about stuttering. It seems logical to conclude that the more informed a client and their family are, the less nervous and wary they may be. The stigma around disorders and treatment will most likely be a huge stress factor for the family, and a calm, informative environment would be a great way to start.

Finding a clinician requires looking for someone willing to add another client to their caseload, a client with an odd schedule for whom they would not be paid. The ten hour time difference between Kenya and the West Coast of the United States would need to be taken into consideration; depending on the client's school or work schedule, the clinician may have to be willing to have a therapy session once a week at 6 am or late in the evening. This inconvenience is tempered, however, by the ability of the clinician to potentially connect via the Internet from the comfort of his or her own bed or house. Also, depending on the client's accessibility to the device that connects to the Internet or cellular company, the therapy sessions may be on an irregular schedule. The stereotypes about "African time" are not just stereotypes but realities,

and sessions will most likely not be as timely as a therapy session in a developed country. The clinician must also be informed about the cultural differences prevalent in Kenya, as well as be aware of the client's specific differences, especially since Kenya has such a diverse population. In conclusion, the clinician willing to try this project would need to be very willing to deal with the inconsistencies of Africa, the uncertainties of a trial project, and the joy of working hard for no pay.

To bring it all together, I propose a theoretical best-case scenario of what I think could result from this project:

- Two clinicians from Western Washington University volunteer to provide stuttering therapy to two children, one child each. These children live near Ngomano and attend the elementary school there.
- The school will be provided with a tablet and the means to connect to the Internet, as well as administrative paperwork templates, therapy materials, and handouts for the client and their family.
- The clinicians will be scheduled to do therapy with their respective client twice a week for a quarter, or 8 weeks, just like the system at Western. The students' specific schedule will need to be accounted for.
- The sessions will be 45 minutes long, but will total approximately one hour with all the connection time involved.
- The teachers at Ngomano elementary school will be informed about the new services, and one or two will be trained to assist as facilitators. These facilitators will help proctor assessments, as well as forward any client information to the SLP.
- The clients pay by donating time, money, or goods.

- After a full cycle of 8 weeks, the SLP will determine if the client needs to continue therapy or if they have progressed enough to stop receiving therapy.

With time, patience, and tweaking, this project could be extremely beneficial to students in places like Ngomano, especially if a best-case scenario like this became a reality for a child who stutters and needs therapy services.

This project is very big and very detailed and very variable. It is not, however, an impossible goal. With what we know about stuttering and how to treat it, with current technology, and with first-hand accounts of how life works in Kenya, this idea has the potential to do a lot of good. There are two things to keep in mind, however. First, the people come before the program. If this project becomes a burden on the people and makes life worse instead of better, it is not worthwhile. Second, there are many details that can't be worked out until someone in Kenya actually tries it out. Dr. Akre has stressed to me the importance of understanding and respecting the fact that things work differently in Kenya and even the best-laid plans can flop. With these two things in mind, however, I believe that this project has great potential to fill a niche and help Kenyan children and adults who stutter to speak more fluently and live happier lives.

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