

ATTITUDES OF RURAL KENYANS TOWARD SPEECH AND LANGUAGE DISORDERS
AND THERAPY

By

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A THESIS PRESENTED TO THE GRADUATE SCHOOL
OF THE UNIVERSITY OF FLORIDA IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF ARTS

UNIVERSITY OF FLORIDA

2009

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To Thomas Gill, my husband, who endured so much with me during this process

ACKNOWLEDGMENTS

I thank Bramwel Esiromo Juma of the Amukura, Kenya, Christian Community Services and his son, Harrison Esiromo, for their untiring assistance in mobilizing participants for this study and also for translating education sessions. I thank Dr. Lisa Edmonds of the University of Florida Department of Communication Sciences and Disorders for her assistance in the editing and writing of this manuscript. I thank Dr. Cyndi Garvan of the University of Florida College of Education for her assistance in creating the questionnaire and performing the statistical analyses. I thank Dr. Charles Bwenge of the University of Florida Center for African Studies for translating the questionnaire into Swahili. I also thank Thomas Gill for his assistance both in the field with conducting the study and back in the States with compiling the data.

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Abstract of Thesis Presented to the Graduate School
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May 2009

Chair: Lisa A. Edmonds

Major: Communication Sciences and Disorders

Communication disorders occur in populations worldwide, though they are not always recognized as such. The lack of recognition of and the attitudes toward speech and language disorders as well as the beliefs about the causes of speech and language problems affect people's attitudes toward treatment of the disorders. Although much research on speech and language deficits and the therapy involved has been done in minority world countries such as the U.S., the U.K. and Australia, relatively little research has been conducted in majority world countries, such as Kenya, East Africa (Carter et al., 2005; Ineichen, 2000; Mwihaki, 2002-2003). Before therapy can be planned and implemented in a culture, attitudes toward treatment must be analyzed in order to know how best to proceed. Given these assumptions, the current study asks if providing education to rural Kenyans about communication disorders and the benefits of therapy results in changed attitudes regarding communication disorders and an increased receptivity toward therapy. The methods in this experiment included administering a pre- and post-education session questionnaire for adults in rural Kenyan villages. It was predicted that education about communication disorders and the treatment of the disorders would significantly change the responses of the participants on the questionnaire. Results showed that receptivity to treatment did change with education.

CHAPTER 1 INTRODUCTION

A culture's attitudes toward communication disorders are extremely important to a speech-language pathologist's (SLP's) work (Bebout & Arthur, 1992). Without investigating attitudes prior to implementing treatment, the treatment may be in vain. Communication disorders occur in every population, but not all cultures are aware of what they are or how they can be treated. Kenya is one country where little research has been conducted on speech and language disorders, yet there is a high prevalence of these disorders due to cerebral malaria and cleft palate as well as cerebral palsy, Down Syndrome, and many other causes. An ethnolinguistic group (people with the same culture and language) may at first be wary of speech-language pathologists and treatment if they are uninformed as to the purpose and possible results of treatment, but education has been shown to change people's perceptions (U.K. Department for International Development, 2003).

Literature Review

Communication is a unique, dynamic and complex way for people to express their thoughts and emotions and to respond to and manage their environment, which greatly contributes to a person's quality of life (Duffy, 2005). Communication is necessary for learning, developing and being a social part of a community (Morley, 1965). Mwihaki (2002-2003) states that the idea of normal speech is referred to as "what is expected depending on the background, climate of usage and the age of the speaker" (p. 240). Therefore, any speech which deviates from the characteristics that are expected will be considered abnormal. Such abnormalities include partially or wholly unintelligible utterances which may be a source of embarrassment to the speaker, the listener or both. If speech deviates sufficiently from what is normal so that it

fails in its ability to communicate, the speaker has a speech or language disorder (Mwihaki, 2002-2003).

In the International Covenants on Human Rights and the Universal Declaration of Human Rights, the United Nations proclaimed and agreed on a code that “everyone is entitled to all the rights and freedoms . . . without distinction of any kind, such as race, colour, sex, language, religion, political or other opinion, national or social origin . . . “ (U.N. General Assembly, 1989, Preamble). Further, in the Convention on the Rights of the Child, the U.N. claimed that “assistance . . . shall be designed to ensure that the disabled child has effective access to and receives education, training, health care services, rehabilitation services, preparation for employment . . . in a manner conducive to the child’s achieving the fullest possible social integration and individual development (Article 23 section 3). Communication is an essential and accepted part of these human rights (Stow & Dodd, 2003), and help for disorders of communication must be made available to all who desire it.

Speech-language pathology is a discipline in which professionals are taught to investigate the causes, manifestations, treatments and preventative strategies of speech and language disorders (Mwihaki, 2002-2003). Speech-language therapy is necessary to eliminate or prevent communication disorders and to help people learn how to communicate effectively. In most minority world countries (current United Nations terminology for the term “developed countries” or “First World countries”), such as the U.S.A., the U.K. and Australia, speech-language pathology services are available for people of all ages. However, in many majority world countries (current United Nations terminology for the term “developing countries” or “Third World countries”), such as Kenya, East Africa, speech-language pathology either does not exist at all or it is in its beginning stages (D’Antonio & Nagarajan, 2003; U.K. Department for

International Development, 2003; Munyere, 2004; Mwiwaki, 2002-2003), and speech-language pathologists beginning to work in Kenya must learn to accommodate to the culture of the country.

According to Semela (2001), language and culture are interconnected in an intricate and inseparable manner. He reports that culture itself is anchored within the beliefs, traditions, values and attitudes of an ethnolinguistic group and that language and culture cannot be taken out of the equation when studying communication disorders. With respect to African culture, Semela (2001) reports that the birth of a disabled child usually causes various types of conflicts in families, including guilt, regret, grief and anxiety. In addition to the emotional and psychological stress of a disabled child (including a child with communication disorders), there is the added strain of increased financial burden on the family. Moreover, the lack of literacy in many areas makes it difficult to provide written materials to families to aid education about a particular communication disorder.

Disabilities create psychological and emotional stress for the individual and family, and the response of society can interfere with educational achievement, personality development, and professional advancement (Mwiwaki, 2002-2003). Even without community misunderstanding, people with communication disorders are at risk for social functioning and social withdrawal problems due to increased difficulty in communication with others (Morley, 1965; Stow & Dodd, 2003; Westby, 1990). Traditionally in African society, children and adults with disabilities have been seen by their communities as being bad omens to the society, as being *oloibe enkai*, meaning “one hated by God” (Munyere, 2004, p. 31). They have been hit or beaten in response to speech that is dysfluent and have had their lingual frenulum cut as a treatment for not speaking (Marshall, 2003). They have been teased, insulted, laughed at, ostracized, and even

killed for their disabilities (Munyere, 2004). According to Mwihaki (2002-2003), many families consider speech and language disorders to be a curse or unbearable reflection on them, so they will hide the afflicted person somewhere or pretend he or she does not exist. It is likely that families probably behave this way because of ignorance and a feeling of helplessness.

Research indicates that half a million disabled children in Kenya have a communication disorder (U.K. Department for International Development, 2003), but Mwihaki (2002-2003) reports that until 1998, the Kenyan Ministry of Education did not acknowledge that people with speech-language disorders had special learning needs of their own. Instead, documents cited four different disabilities, including mental handicap, physical handicap, visual impairment and hearing impairment. Therefore, people with speech and/or language impairments were labeled as having one of these four disabilities, depending on how the characteristics of the disorder were manifested, with a disproportionately high level of people labeled as mentally handicapped Mwihaki (2002-2003). Being categorized as mentally handicapped or incompetent can have major consequences on a learner's performance (Ridge, Makoni, & Ridge, 2003) and limit his or her opportunities for remediation.

In addition to the causes of communication disorders in minority world countries, majority world countries such as Kenya have additional risk factors such as higher rates of malaria and cleft palate. According to Carter, Murira, Ross, Mung'ala-Odera and Newton (2003), malaria affects 40% of the global population in more than 90 countries, is connected with 0.5-2.5 million deaths every year, predominantly in young people in sub-Saharan Africa (including Kenya), and may be a primary cause of acquired neurological impairments in children living in the tropics. Most malaria-related deaths are due to severe forms of one type of malaria, falciparum malaria, which can cause cerebral malaria (CM), a severe neurological problem

(Bangirana, Idro, John & Boivin, 2006). Bangirana et al. (2006) report that the neuropsychological effects have been assessed in Ghana, Kenya and Senegal, resulting in conclusions that CM affects many areas of cognitive functioning, including memory, information processing, information sharing between the hemispheres of the brain, syntax, articulation and attention. These researchers predict that more than 65,000 sub-Saharan African children will develop cognitive deficits due to CM, and they suggest a multidisciplinary approach to intervention, including speech therapy, as do Carter et al. (2003, 2005). However, sub-Saharan Africa lacks skilled professionals in speech-language pathology (Bangirana et al., 2006), so many Kenyans are not able to easily access speech-language therapy.

D'Antonio & Nagarajan (2003) report that surgery for cleft palate in developing countries is increasing, but speech-language therapy has not been readily available for the patients. They say part of this is due to the patients' and families' misconception about the cause of cleft palate and the possibility of treatment. In addition, families are frequently uneducated, poor and living in remote areas with little or no access to therapy.

Education and careful management of communication disorders would benefit not only the individual with the disorder and that person's family, but also the community at large. However, what can and should be done depends on the culture of the community (Mwihaki, 2002-2003). It is essential that attitude change come from within the community. The people of the community need to know about the upcoming change and take personal responsibility for the change, participating in all processes that relate to the change for it to be successful and lasting (D'Antonio & Nagarajan, 2003).

Speech-language pathologists from minority world countries are now being asked to help create educational programs and services for assessment and intervention in majority world

countries for people with communication disorders (Westby and Hwa-Froelich, 2003). However, these services and training programs cannot simply be transported directly from minority world countries to majority world countries and be effective. They must be tailored to the needs of the local people (Robinson, Afako, Wickenden, & Hartley, 2003; Westby & Hwa-Froelich, 2003).

Pillay (2003) reports that historically-speaking, speech-language pathologists have primarily focused their research and practice on Caucasians who are usually of European ancestry and Judeo-Christian religious background. Therefore, these are the linguistic populations from which SLP's have derived their knowledge of communication disorders. Unfortunately, Pillay says this knowledge has been applied to *all* people, whether they fit into these categories or not. In the past few decades, however, he reports that researchers have begun to realize that the knowledge is not universal and has been inappropriately generalized. Therefore, research needs to be conducted on the attitudes of rural Kenyans toward communication disorders and speech-language therapy before attempting to implement successful speech and language services in rural Kenya.

Since attitudes regarding communication disorders vary according to culture, it is necessary to ask the local people to what extent they feel speech-language therapy services would be of value to them (Screen & Anderson, 1994). Rural Kenya is hierarchical in social structure and collectivistic in nature. Males typically have the power to control decision-making for the entire group (Dodoo & Tempenis, 2002; Marshall, 2003). However, females typically are the primary caregivers in a family (Aspaas, 1998). Therefore, the attitudes and opinions of both men and women in a community need to be assessed in order to come to a conclusion regarding the likelihood for the success of a new program in the community.

The current study examines the attitudes and knowledge of rural Kenyans about communication disorders, speech-language therapy services, and SLP's. In rural villages in Western Kenya, men and women attended meetings established for the purpose of the study. A questionnaire (available in both English and Swahili, the two national languages of Kenya) was handed out to each participant and time was given for each of them to complete it. Then, the researcher (with the help of a local translator (Westby & Hwa-Froelich, 2003)) educated the participants about various communication disorders and how they can be treated with the help of a speech-language pathologist. Following the information session, the same questionnaire was given again to determine whether or not responses changed with education.

Predictions and Implications

The questions and predictions for the study are as follows:

- QUESTION 1. Will the attitudes of rural Kenyans regarding communication disorders and their consequences within their community change with education?
- PREDICTION 1. It is predicted that the attitudes of rural Kenyans regarding the consequences of communication disorders in their community will not change with education because the difficulties the communication disorders present within the current social structure were not discussed in the education session nor are they readily changeable within the social structure of the villages (U.K. Department for International Development, 2003).
- QUESTION 2. Will rural Kenyans' receptivity to speech-language therapy change with education?
- PREDICTION 2. It is predicted that rural Kenyans' receptivity to speech-language therapy will change with education since the education session directly addresses communication problems, what a speech-language therapist is and how speech-language therapy can help people with communication problems. If this prediction proves true, it would suggest that the participants would support and welcome speech-language therapy in their community (U.K. Department for International Development, 2003).
- QUESTION 3. If there is a change in receptivity, which factors influence receptivity of speech and language treatment?
- PREDICTION 3. Based on the lack of research in this population, there was not a strong predictor for which factors would influence receptivity.

CHAPTER 2 METHOD

Participants

Twenty-six male and twenty female adults from rural villages in the Teso District of Western Kenya participated in this study (see Table 2-1 for demographics of participants). Two men and three women did not complete the questionnaires and/or did not stay for the entire training session. Thus, a total of twenty-four men and seventeen women, or forty-one participants, are included in this study.

Participants were recruited by word of mouth. The researcher and local organizer/ translator invited three different groups of people (groups are generally able to effect change easier than individuals) to participate, and all three groups accepted. Each of these three groups of people is instrumental in their communities for various reasons: one is a volunteer organization which aids orphans and vulnerable children in becoming valuable assets in the community; one is a volunteer organization which researches and implements new ideas in the community to help reduce poverty; one is a group of teachers who work at a primary school which contains a special needs unit. One information session was held for each group, totaling three different sessions altogether. Each participant received lunch as a small gift of appreciation for their time.

Table 2-1. Demographics of participants

Demographic Factor	Range	Overall Mean (SD)	Male (N=24) Mean (SD)	Female (N=17) Mean (SD)
Age (years)	20-70	35.2 (10.4)	38.5 (9.9)	30.4 (9.2)
Education (years)	4-14	10.3 (2.9)	10.7 (2.6)	9.8 (3.3)
Monthly Income (\$)	0-333	48.0 (89.2)	67.0 (110.8)	22.7 (38.3)
Number of children	0-15	5.5 (4.2)	6.5 (4.7)	3.9 (3.0)

Materials

Materials consisted of an existing questionnaire (Bebout and Arthur (1992)) that was adapted and added to for the purpose of this study (see Appendix A) using a Likert scale (Trochim, 2006). The questionnaire was given before and after the education session and was designed to determine whether education is effective in changing attitudes about communication disorders and receptivity to treatment.

The questionnaire contains a section with thirty questions composed of 22 multiple choice Likert questions, 8 open-ended questions, and is followed by a section for demographic information. The multiple choice questions examined attitudes about communication problems (e.g., *“Do people with communication problems have trouble getting a job?”*), treatment receptivity (e.g., *“Would you send an adult in your family to a clinic to be treated for communication problems?”*), and logistics related to travel to therapy (e.g., *“How far away would you be willing and able to take a child/an adult in your family for speech therapy?”*). The open-ended questions inquire about issues related to treatment, including questions about barriers to treatment (e.g., *“What do you think would be barriers of getting speech-language therapy to work well in your community?”*).

The demographic section appears at the end of the questionnaire, as is culturally appropriate (Obeng-Quaidoo, 1991), and targets information such as age, gender and monthly income. Questionnaires were available in both English and Swahili, which were prepared by native speakers of each language. A local translator was present to translate the spoken information session into Swahili. The translator was also available to record responses for those unable to write, though none of the participants requested his services.

Procedure

The experiment was conducted within rural Kenyan villages in the Teso District of Western Kenya either in rooms available and large enough to accommodate the group (a church for one group, the staff room of a school for another) or outside under a tree for the other group. These villages were chosen due to a sufficient population and the presence of local teachers and workers who work with people with special needs and communication problems. Additionally, adults in these villages had not been provided previously with information on communication problems.

After being introduced to the group by the organizer, as per local custom, and welcoming the group, numbers were assigned to each participant and the questionnaire was administered (76% chose to complete the English version of the questionnaire; 24% chose the Swahili). When all the participants had completed the questionnaire, the researcher gave a thirty-minute educational presentation to the participants while the translator translated the information into Swahili (see Appendix B for information session materials). The information included discussing the importance of communication in everyday life, explaining different types of communication disorders (focusing on the more severe problems such as those having to do with cleft palate and brain damage, including malarial effects, traumatic brain injury and stroke), and explaining the speech-language profession and how speech-language pathologists can help retrain people's brains in order for them to communicate more effectively. After the information session, participants were asked to fill out the questionnaire again.

Treatment of Quantitative Data

As a preliminary step, factor analysis was conducted on questionnaire questions using the VARCLUS procedure in SAS (version 9.1; Cary, NC). Evidence was found for two factors, which were named Attitudes toward communication disorders and Receptivity toward treatment.

The questions on the Attitude Scale address Research Question 1 (e.g., “Will the attitudes of rural Kenyans regarding communication disorders and their consequences within their community change with education?”). The Receptivity Scale addresses Research Question 2 (e.g., “Will rural Kenyans’ receptivity to speech-language therapy change with education?”).

Questions 13, 15, 24, and 25 were not grouped in either the Attitude or Receptivity Scale; Q13 was omitted from analysis due to inaccurate translation of “emotionally disturbed”; Q15, 24, and 25 were treated separately for reasons explained below.

Creation of Attitude Scale

Nine of the multiple choice Likert questions (Q4, Q5, Q6, Q7, Q8, Q9, Q11, Q12, and Q16) were combined to create an Attitude Scale, where attitude in this context is defined as ways of thinking and opinions regarding communication disorders, people with communication disorders, how these people are perceived in the community and their role in society. Thus, all questions included in this scale are related to attitude about communication disorders and people who have them. The questions from the questionnaire related to attitude were grouped and then tested for internal consistency using Cronbach coefficient alpha. See Appendix C for a listing of the Attitude Scale questions.

Creation of Receptivity Scale

Nine of the multiple choice Likert questions (Q10, Q14, Q17, Q18, Q19, Q20, Q21, Q22, and Q23) were combined to create a Receptivity Scale, where receptivity in this context is defined as willingness to accept new ideas related to speech-language therapy in the community. Thus, all questions included in this scale were related to receptivity toward speech-language therapy. The Receptivity Scale was developed by grouping questions related to receptivity and testing them for internal consistency using Cronbach coefficient alpha. See Appendix C for a listing of the Receptivity Scale questions.

Other Quantitative Questions

Questions 15, 24, and 25 were treated separately from the other quantitative data as they are multiple choice Likert questions but are not part of either the Attitude or the Receptivity Scales. Question 15 (*“Have you heard of a speech-language therapist?”*) was used to determine whether or not the participants had any previous knowledge of an SLP. Questions 24 (*“How far away would you be willing and able to take a child in your family for speech-language therapy?”*) and 25 (*“How far away would you be willing and able to take an adult in your family for speech-language therapy?”*) were used to determine how best to make speech-language treatment available to the community if the community were receptive toward treatment.

Design and Statistical Treatment of Data

It was important to determine both the attitudes toward communication disorders and receptivity to treatment in the community if the community members were not given an education session, since a new program like speech-language therapy is usually implemented in a community without much (if any) education. Therefore, pre-education responses were utilized for testing. Separate statistical analyses were conducted for the Attitude and Receptivity Scales. However, the responses in both scales were scored and analyzed in similar fashions.

Most multiple choice Likert questions on the questionnaire had five possible responses. These questions had two positive, two negative and one “neutral” response. To prepare the data for statistical analysis, the responses were coded -2 to +2, with -2 being the least favorable response and +2 being the most favorable response.

Internal consistency of items in the Attitude Scale, measured using Cronbach coefficient alpha, was 0.3964. Internal consistency of items in the Receptivity Scale, measured using Cronbach coefficient alpha, was 0.7110. Data were checked for outliers and distributional forms. Relationships of Attitude and Receptivity prior to intervention and demographic factors were

examined using t-tests (for binary variables) and Spearman correlation coefficient (for numeric variables).

Cronbach coefficient alpha measures how well variables measure a single construct. It is a coefficient of consistency or reliability. If the correlation between the variables is low, the alpha will also be low. As the correlation between items increases, the alpha also increases. The higher the alpha, the more likely the variables are measuring the same construct (Brennan, 2006). Therefore, the internal consistency of items in the Attitude Scale (0.3964) was fairly low while the internal consistency of items in the Receptivity Scale (0.7110) was high with good reliability.

To test for the effect of intervention (Research Questions 1 and 3), difference scores were formed between pre- and post-intervention scores and tested using the Wilcoxon signed rank test. An ANOVA was conducted to simultaneously examine the effect of factors on post intervention scores. SAS software (version 9.1; Cary, NC) was used for all analyses. A p-value less than 0.05 was considered significant for all statistical testing.

Questions 15, 24 and 25 had different response possibilities than the other quantitative questions on the questionnaire and were not part of either the Attitude or the Receptivity Scale. Therefore, they were treated differently. Question 15 could be answered either “yes” or “no” and responses were simply tallied on the pre-education questionnaire to arrive at a total of how many participants had heard of an SLP and how many had not. Questions 24 and 25 had five possible responses each with names of villages at various distances from the community where the study took place and responses were tallied for pre- and post-education to determine how far participants would be willing to take loved ones for therapy.

CHAPTER 3
RESULTS - QUANTITATIVE

Attitude Scale Analysis

To test for the effect of intervention on questions in the Attitude Scale, difference scores were formed between pre- and post-intervention scores and tested using the Wilcoxon signed rank test (see Table 3-1). The mean for attitudes on the pre-education questionnaire was .26 with a standard deviation of .55, while the mean on the post-education questionnaire was .19 with a standard deviation of .56. This means the difference between the two means was 0.07 with a standard deviation of .52 and a p-value of .2809 (see Table 3-1), which is not significant and shows that the education session did not produce a significant change in the participants' attitudes toward communication disorders.

However, the Attitude Scale has a fairly low Cronbach coefficient alpha (the questions included in the Attitude Scale did not necessarily reliably measure the same construct). This is probably due to the fact that the questions on the questionnaire were not divided up into attitude questions and receptivity questions before the study was conducted, as the original focus of the study was to investigate receptivity.

Table 3-1. Difference in attitudes and receptivity between pre- and post-education session

	Pre- education Mean (SD)	Post-education Mean (SD)	Difference Post-pre Mean (SD)	p-Value
Attitudes	0.26 (0.55)	0.19 (0.56)	-0.07 (0.52)	0.2809
Receptivity	1.55 (0.60)	1.71 (0.52)	0.17 (0.47)	0.0231

Receptivity Scale Analysis

To test for the effect of intervention on Receptivity to speech-language therapy intervention, difference scores were formed between pre- and post-intervention scores and tested using the Wilcoxon signed rank test (see Table 3-1). The mean for receptivity on the pre-education questionnaire was 1.55 with a standard deviation of .60, while the mean on the post-

education questionnaire was 1.71 with a standard deviation of .52. This means the difference between the two means was .17 with a standard deviation of .47 and a p-value of .0231, which is significant and shows that the education session produced a change in the participants' receptivity to treatment.

Pre-education Factors Related to Attitude

In order to determine what pre-education factors (e.g., gender, income, number of children, level of education, age, language chosen for questionnaire) predicted attitudes amongst the participants, a Spearman correlation coefficient analysis was conducted using the nine multiple choice Likert questions which composed the Attitude Scale. Table 3-2 shows that no demographic factor assessed is statistically significant for predicting attitudes in the community.

Table 3-2. Pre-educational session attitudes regarding communication disorders and relationships with demographic factors

Factors	Attitude Scale	p-Value
Gender		
Male [Mean (SD)]	0.27 (0.63)	0.8381
Female [Mean (SD)]	0.24 (0.43)	
Language of questionnaire		
English [Mean (SD)]	0.30 (0.60)	0.2628
Swahili [Mean (SD)]	0.13 (0.34)	
Age (years) (Spearman correlation coefficient)	0.13	0.4255
Education (years) (Spearman correlation coefficient)	0.20	0.2830
Monthly Income (\$) (Spearman correlation coefficient)	-0.04	0.8377
Number of children (Spearman correlation coefficient)	-0.03	0.8558

Pre-education Factors Related to Receptivity

In order to determine which pre-education factors (e.g., gender, income, number of children, level of education, age, language chosen for questionnaire) contributed to change in receptivity, a Spearman correlation coefficient analysis was conducted using the nine multiple choice Likert questions which composed the Receptivity Scale. Table 3-3 shows that the

participants' monthly income is a statistically significant factor for predicting receptivity toward treatment for the community (p-value = 0.0300).

Table 3-3. Pre-educational session receptivity toward communication therapy and relationships with demographic factors

Factors	Receptivity Scale	p-Value
Gender		
Male [Mean (SD)]	1.52 (.67)	.7422
Female [Mean (SD)]	1.58 (.50)	
Language of questionnaire		
English [Mean (SD)]	1.55 (.56)	.9404
Swahili [Mean (SD)]	1.53 (.74)	
Age (years) (Spearman correlation coefficient)	-0.18	0.2528
Education (years) (Spearman correlation coefficient)	0.14	0.4392
Monthly Income (\$) (Spearman correlation coefficient)	0.37	0.0300
Number of children (Spearman correlation coefficient)	-0.07	0.6517

Pre-education Factors Related to Post-education Receptivity

Pre-education receptivity was the only factor significantly correlated to post-receptivity changes as the p-value is 0.0027. This shows that there is no evidence of any factor besides the participants' receptivity to treatment before education which predicted the participants' receptivity to treatment after education.

Other Quantitative Questions Analysis

To test for how many participants had heard of an SLP before the education (Question 15), "yes" and "no" responses were tallied from the pre-education questionnaires. Results show that 21 participants had heard of an SLP, 18 had not heard of an SLP and 2 did not respond to the question. Therefore, about half of the participants had heard of an SLP before the education session while the other half had not.

To test for how far the participants would be willing to take loved ones for therapy intervention, pre- and post-education responses were tallied for each of the five choices. Question 24 (“*How far away would you be willing and able to take a child in your family for speech-language therapy?*”), pre-education results showed that 35 of 41 (85.4%) participants answered this question. Thirty-one would travel within 9 km (88.6%), 1 participant would travel 21-40 km (2.9%), 1 would travel 41-75 km (2.9%), and 2 would travel 76-100 km (5.7%). The post-education results showed that 37 of 41 (90.2%) participants answered the question. Thirty participants would travel within 9 km (81.1%), 1 participant would travel 21-40 km (2.7%), 5 would travel 41-75 km (13.5%), and 1 would travel 76-100 km (2.7%). See Table 3-4 for details.

Question 25 (“*How far away would you be willing and able to take an adult in your family for speech-language therapy?*”) pre-education results showed that 36 of 41 (87.8%) participants responded to this question. Thirty would travel within 9 km (83.3%), 1 participant would travel 10-20 km (2.8%), 1 would travel 21-40 km (2.8%), and 4 would travel 76-100 km (11.1%). The post-education results showed that 37 of 41 (90.2%) participants answered the question. Twenty-six participants would travel within 9 km (70.3%), 1 participant would travel 10-20 km (2.7%), 2 would travel 21-40 km (5.4%), 5 would travel 41-75 km (13.5%), and 3 would travel 76-100 km (8.1%). See Table 3-5 for details.

Therefore, for Questions 24 and 25, there was a slight increase post-education in the distance the participants would travel to take a loved one for speech-language therapy.

Table 3-4. Responses for distance willing and able to take a child for therapy

Response	Number of responses (pre-education)	Percent of total responses (pre-education)	Number of responses (post-education)	Percent of total responses (post-education)
Amukura: 0-9 km	31	88.6	30	81.1

Nambale: 10-20 km	0	0	0	0
Busia: 21-40 km	1	2.9	1	2.7
Mumias: 41-75 km	1	2.9	5	13.5
Kakamega: 76-100 km	2	5.7	1	2.7

Question 24: (How far away would you be willing and able to take a child in your family for speech-language therapy?)

Table 3-5. Responses for distance willing and able to take an adult for therapy

Response	Number of responses (pre-education)	Percent of total responses (pre-education)	Number of responses (post-education)	Percent of total responses (post-education)
Amukura: 0-9 km	30	83.3	26	70.3
Nambale: 10-20 km	1	2.8	1	2.7
Busia: 21-40 km	1	2.8	2	5.4
Mumias: 41-75 km	0	0	5	13.5
Kakamega: 76-100 km	4	11.1	3	8.1

Question 25: (How far away would you be willing and able to take an adult in your family for speech-language therapy?)

Qualitative Data

Given that there has been little research related to views and knowledge with respect to communication disorders conducted in this population, the qualitative questions in this study were used to gather more open-ended information about participants and their opinions than the quantitative data. The initial goal of analysis was to examine changes in responses after the educational session. However, since some participants responded on the pre-education questionnaire and not on the post-education questionnaire, and there was no clear pattern for pre- and post-education responses, responses were collapsed into one table. Thus, in most cases only one data set was formed (i.e., not a pre- and post-educational set). This data set was primarily from the pre-educational responses, although if participants completed the information post-treatment rather than pre-treatment or if the information in the post-treatment was more specific than that in the pre-treatment, those data were used in the analysis. In other cases, pre- and post-treatment data appeared more reliable. Thus, both sets of information are provided below with indications related to whether pre- and post-education data were available.

For each qualitative question (Q's 1, 3, 26, 27, 29 and 30), response categories for each question were created based on participant responses (i.e., not pre-determined) in order to analyze the trends in the data. Questions 2 and 28 were not analyzed due to problems with the participants' understanding the meaning of these questions.

Question 1: "Describe your understanding of a communication problem." Only one set of data is reported (i.e., not pre- and post-treatment). Twenty-nine out of forty-one participants (70.7%) responded/responded appropriately (that is, they answered the question with a response that made sense) to this question and were thus included in the data analysis. Each participant may have given more than one response for this question.

The forty-eight responses fell into the following seven categories: speech problem (15/48 = 31.3%), unable to communicate effectively (14/48 = 29.2%), stammer/fluency problem (6/48 = 12.5%), language problem, hearing problem and problem with the brain (4/48 = 8.3% each) and structural problem (1/48 = 2.1%). Therefore, speech problem was the most frequent answer followed closely by unable to communicate effectively as the response to the participants' understanding of a communication problem. See Table 3-6 for details.

Question 3: "How many people do you know outside your family with communication problems? How many adults? How many children?" Forty-one participants (100%) responded appropriately to this question and were thus included in the data analysis. The first part of the question (*"How many people do you know outside your family with communication problems?"*) was not always the sum of the two follow-up questions, so the first part of the question was not used since responses to how many adults and how many children would likely be more specific and accurate than how many people in general. The mean number of people with communication problems outside of the participants' families identified by the participants

increased slightly from the pre- to the post-education questionnaire from 2.3 adults and 3.3 children on the pre-education questionnaire to 2.5 adults and 4.2 children on the post-education session questionnaire. This increase may be due to an increase in the participants' awareness of what a communication problem is. See Table 3-7 for details.

Table 3-6. Response categories for perception of a communication problem

Response category	Number of responses	Percent of total responses
Speech problem	15	31.3
Unable to communicate effectively	14	29.2
Stammer/fluency problem	6	12.5
Language problem	4	8.3
Hearing problem	4	8.3
Problem with brain	4	8.3
Structural problem	1	2.1

Question 1: (Describe your understanding of a communication problem.)

Table 3-7. People with communication problems known to participants

People known	Pre-education mean (SD)	Post-education mean (SD)
Adults	2.3 (1.8)	2.5 (3.8)
Children	3.3 (3.1)	4.2 (6.5)

Question 3: (How many people do you know outside your family with communication problems? How many adults? How many children?)

Question 26: "Who makes decisions about the care of the children in your household?"

Thirty-nine participants (95.1%) responded appropriately to this question and were thus included in the data analysis. Since this question was not addressed in the information session and should not change with education, the first response was used in the analysis unless the first response was unclear. In that case, the second response was used for clarification.

Most participants (20/39 = 51.3%) answered that both parents (the father and the mother) make decisions about the care of the children in the household, followed by the father alone (11/39 = 28.2%), then the mother alone (8/39 = 20.5%). Interestingly, there was no pattern of response according to gender, that is both men and women responded with each of the three answers. See Table 3-8 for details.

Table 3-8. Who makes decisions about children in the house

Who makes decisions	Number of responses	Percent of total responses
Both	20	51.3
Father only	11	28.2
Mother only	8	20.5

Question 26: (Who makes decisions about the care of the children in your household?)

Question 27: “What do you think would be benefits of speech-language therapy in your community?” Thirty-two participants (78.0%) responded appropriately to this question and were thus included in the data analysis. Some participants may have given more than one response for this question.

The fifty-three responses fell into the following six categories: decreased communication problems and increased understanding (28/54 = 51.9%), social benefits (13/54 = 24.1%), increased education/decreased ignorance (5/54 = 9.3 %), increased employment (4/54 = 7.4%), reduced stress on people with the disorders and on their families (3/54 = 5.6%) and reduced medical costs (1/54 = 1.9%). Therefore, decreased communication problems and increased understanding was the majority response followed by social benefits. See Table 3-9 for details.

Table 3-9. Response categories for Question 27

Response category	Number of responses	Percent of total responses
Decreased communication problems & increased understanding	28	51.9
Social benefits	13	24.1
Increased education/ decreased ignorance	5	9.3
Increased employment	4	7.4
Reduced stress on people and family	3	5.6
Reduced medical costs	1	1.9

Question 27: (What do you think would be benefits of speech-language therapy in your community?)

Question 29: “What do you think would be barriers of getting speech-language therapy to work well in your community?” Thirty-seven participants (90.2%) responded appropriately to

this question and were thus included in the data analysis. Participants may have given more than one response for this question.

Some participants responded on the pre-education questionnaire and not on the post-education questionnaire, so responses were collapsed into one table. However, it was noted that pre- to post-education responses indicating cost as a barrier tripled (from 6 to 18 responses), while the number of people responding that travel distance and transportation difficulties would be a barrier doubled (from 6 to 12 responses). There was no pattern of response according to gender.

The seventy-nine responses given fell into the following eight categories: cost (22/79 = 27.8%), travel distance/transportation difficulties (13/79 = 16.5%), communication difficulties (language barrier if the therapist speaks a different language as well as poor communication infrastructure with few phones/ air time available in the community) (10/79 = 12.7%), lack of cooperation by the community (not showing up for appointments) (10/79 = 12.7%), lack of speech-language pathologists (SLP's) available (9/79 = 11.4%), illiteracy and ignorance in the community regarding communication problems and therapy (9/79 = 11.4%), poor health facilities & medical infrastructure (4/79 = 5.1%), and tribalism or nepotism (1/79 = 1.3%). Therefore, cost was by far the most frequent answer to the participants' thoughts about the barriers of getting speech-language therapy to work well in their community. See Table 3-10 for details.

Table 3-10 Response categories for Question 29

Response category	Number of responses	Percent of total responses
Cost	22	27.8
Travel distance/transportation difficulties	13	16.5
Communication (language barrier & infrastructure)	10	12.7
Lack of cooperation by community	10	12.7

Table 3-10. Continued

Response category	Number of responses	Percent of total responses
Lack of SLP's	9	11.4
Illiteracy & ignorance in community	9	11.4
Poor health/medical infrastructure & facilities	4	5.1
Tribalism/nepotism	1	1.3

Question 29: (What do you think would be barriers of getting speech-language therapy to work well in your community?); SLP: speech-language pathologist

Question 30: Additional comments. Twenty-five participants (61.0%) responded to this question and were thus included in the data analysis. Some participants may have given more than one response for this question.

Since some participants responded on the pre-education questionnaire and not on the post-education questionnaire, responses were collapsed into one table. However, on the post-education questionnaire there were fewer “no responses” and more participants said that speech-language therapy (SLT) is needed in the community (increased from 11 to 15). There was no pattern of response according to gender.

The thirty-three responses fell into the following six categories: speech-language therapy needed in the community (18/33 = 54.5%), education needed on speech-language therapy in the community (5/33 = 15.2%), schools or institutions should be opened to help people with their communication problems (4/33 = 12.1%), people with communication problems can still benefit society (3/33 = 9.1%), members of the community should be trained to be speech-language pathologists (SLP's) (2/33 = 6.1%) and education is needed regarding communication problems in the community (1/33 = 3.0%). Therefore, speech-language therapy being needed in the community was by far the most frequent answer in the additional comments section of the questionnaire.

Since the participants were able to write more than one response, examination of the data showed that twenty-five participants responded to this question, and eighteen of the twenty-five (72%) answered that SLT is needed in the community. This means that nearly three-fourths of the participants who responded to this question felt that therapy would be beneficial to the community. See Table 3-11 for details.

Table 3-11. Response categories for additional comments

Response category	Number of responses	Percent of total responses	Percent of total respondents
SLT needed in community	18	54.5	72
Education needed on SLT in community	5	15.2	20
Schools/institutions should be opened to help people with communication problems	4	12.1	16
People with communication problems can benefit society	3	9.1	12
Should train members of community to be SLP's	2	6.1	8
Education needed on communication problems in community	1	3.0	4

Question 30: (Additional comments); SLT: speech-language therapy; SLP: speech-language pathologist

Question 2 (a fill-in-the-blank chart asking, “*Do you or anyone in your family have communication problems?*”) and Question 28 (“*What do you think would be drawbacks of speech-language therapy in your community?*”) were not analyzed due to the participants having trouble understanding these questions. In Question 2, the participants did not seem to understand how to fill out the chart. For future studies, this question would be asked in a more open-ended manner which would not require filling in a chart. For Question 28, the problem occurred in English vocabulary usage. The researcher received many inquiries regarding the term “drawbacks” and was asked if she meant “feedback.” Many respondents answered the question as though “feedback” was the term used in the question and thus did not answer the question

appropriately. For future studies, the question would be worded differently so as not to include the term “drawbacks” and instead would use the term “problems” so that the question may be better understood.

CHAPTER 4 DISCUSSION

The purpose of this study was to examine the attitudes and knowledge of rural Kenyans regarding communication disorders, speech-language therapy (SLT) services, and speech-language pathologists (SLP's) as well as the participants' receptivity toward speech-language treatment. The first Research Question asked whether the attitudes of rural Kenyans regarding communication disorders and their consequences within their community change with education. The results support the prediction that there is no evidence of change with education in the attitudes of rural Kenyans regarding the consequences of communication disorders in their community. Changes were not expected to occur because the difficulties communication disorders present within the current social structure were not discussed in the education session nor were they readily changeable within the social structure of the community. For example, whether or not people with communication problems have trouble getting a job or getting married would not be expected to change with one educational session. Additionally, the lack of change on the questions related to attitude indicate that participants did not change their responses on the questionnaire simply because they received education and perhaps felt generally more positive or obligated. This is encouraging with respect to the voracity and reliability of the responses overall.

However, participants did become more receptive toward therapy after listening to the education session. Research Question 2 (*“Will rural Kenyans’ receptivity to speech-language therapy change with education?”*) was found to reject the null hypothesis as was predicted (U.K. Department for International Development, 2003) since rural Kenyans’ receptivity to speech-language therapy did change with education. Change was expected since the education session directly addressed communication problems, what a speech-language therapist is and how

speech-language therapy can help people with communication problems. Therefore, since the prediction was supported, it would suggest that the participants would support and welcome speech-language therapy in their community.

However, it is also important to note that the receptivity to therapy before the education session was a mean of 1.55 (standard deviation of 0.60) with 2 being the highest, which shows that the participants were already receptive to treatment before they were educated. This is encouraging, because most programs implemented in a community will be implemented without education for the community members. Thus, the pre-education receptivity of these participants seems to indicate that the participants would be receptive to a communication therapy program with or without education. However, it should be noted that the participants of this study may be particularly receptive since they were community volunteers and primary school teachers at a school which included a special needs unit. Thus, it might be advantageous for any organizations coming from outside of the community offering services to make initial contacts with community representatives who can be educated and assist in educating others in the community about the services being provided.

Clearly participants understood the potential benefits of speech-language services. For example, open-ended responses to Question 27 on the questionnaire (“*What do you think would be benefits of speech-language therapy in your community?*”) show that the participants thought of many benefits of therapy, with the most popular response being decreased communication problems and increased understanding. In addition, social benefits were cited as a strong benefit to therapy. These sentiments are consistent with Duffy (2005) who states that communication is a way for people to express their thoughts and emotions and to respond to and manage their environment, which greatly contributes to a person’s quality of life and with Morley (1965) that

communication is necessary for learning, developing and being a social part of a community. The participants realize the importance of clear communication and how it could affect their community, and they value being able to understand all members of the community. They see a person's social role in the community as being at least partially reliant on the person's ability to communicate.

In addition, the result from the responses to Question 8 of the questionnaire (*"Are people with communication problems being punished (by fate or God, for example)?"*) contradicts previously held beliefs about rural Kenyan society (Munyere, 2004). On the pre-education questionnaire, fifteen of the forty-one participants responded "very unlikely" that people with communication problems are being punished while only two participants responded "very likely" and the overall mean was -0.68 (slightly more unlikely than neutral). Therefore, ideas that rural Kenyans are very superstitious with regards to the causes of disabilities are not necessarily true.

It is very important to target both men and women in a community when implementing a new program such as speech-language therapy as both are responsible for decision-making in their households. Traditionally, the men in rural Kenyan villages are thought to make most decisions regarding family and community (Dodoo & Tempenis, 2002; Marshall, 2003). However, it was clear from slightly more than half of the respondents that both the mother *and* the father make decisions about the children's care in the household, with less than a third responding that the father alone makes the decision and one fifth indicating the mother alone makes the decision. Thus, both males and females in the household make the decisions about the care of the children in the house, and each household may be different in the way the mother and father choose who will make these decisions. No effect of gender was found on this question since a combination of male and female participants answered both father and mother or father

only or mother only as decision-makers regarding child care. In the study's quantitative data, an effect of gender was also not seen on pre-treatment attitudes or receptivity, which indicates that gender in itself does not appear to be a factor related to views on communication disorders in these communities.

Based on the lack of research in this population, there was not a strong predictor for which factors would influence receptivity before the study was conducted. However, the results show that if the participant was already somewhat receptive to treatment, their receptivity increased with education about the benefits of therapy. In addition, the only significant factor which was a predictor of pre-education receptivity was monthly income. As monthly income increased, so also did receptivity toward treatment. Monthly income is very important with regard to treatment since the participants expect that they will likely have to pay for treatment and may be concerned with whether or not they would be able to afford it. In addition, families of people with disorders of any kind, including communication disorders, will already have added financial burdens due to increased medical costs and other repercussions from the disorder (Semela, 2001). Payments and the problem of paying for speech-language therapy is a real, valid concern for the people in this community as the average income of participants in this study was only \$48 per month (with median and mode at \$0 per month). This concern was also demonstrated in the participants' responses related to barriers to speech-language therapy in their community. Cost was the number one barrier cited. These responses indicate that the community would welcome speech-language therapy as long as the cost is not too expensive for them.

One of the most poignant parts of the study was the responses received on the last question on the questionnaire, which asked for any additional comments the participants might

have. This question is extremely important in that the majority of participants (18 of the 25 who answered this question) responded that speech-language therapy is needed in the community. For example, one participant wrote, “It is good to bring such like treatments to enable people to communicate and become successful in life,” while another wrote, “I need a speech therapist quickly.” These responses indicate that the participants are eager for therapy, not only as a luxury but as a definite need and requirement. Appendix D contains quotations from some of the participants which express their desire for communication therapy in their community. In addition, many people and programs target only children with disabilities. As can be seen from the results to Questions 24 & 25 (how far would the participants be willing to travel to take a loved one for therapy), distances were equal, if not greater, for adults than for children. Therefore, services need to be made available for adults as well as for children since the participants see the value in therapy for adults in addition to children.

A couple of limitations to this study are that the participant number was small and the research was conducted in only one location in Kenya. Therefore, the degree of power of the data is not as strong as it could be. Additionally, it is also not possible to generalize the findings to other rural communities in Kenya. Thus, additional research in other areas of Kenya is warranted.

With respect to the questionnaire, there were a few limitations with wording and translation. For example, the way in which Questions 2, 13, and 28 were worded/ translated made these questions misunderstood in one or both languages. If this questionnaire were to be used again, Question 2 should not be in chart format but rather should be asked in a similar fashion to Question 3. Question 13 would have “emotionally disturbed” translated in such a way that both the English and Swahili versions ask the same question. In Question 28, the term

“drawbacks”, which was misunderstood, would be changed to the word “problems” so that the question could be well understood. In addition, the Cronbach coefficient alpha for the Attitude Scale was fairly low. Therefore, if the questionnaire were to be given again, different questions targeting attitude toward disorders and therapy would be added to the questionnaire.

Another possible limitation to the study is that the education session was too short. Perhaps it might be better if the education session were longer or were split into two or three sessions in order to increase the participants’ understanding of the various aspects of communication disorders, what a speech-language therapist is and how speech-language therapy can help people with communication disorders. It would also be beneficial to have pre- and post-therapy videos of Kenyans who have been enrolled in speech-language therapy in order to show live examples of success stories to the participants. Further research would also be beneficial in testing how to tailor and adapt speech-language therapy to the rural Kenyan culture.

Even though there are limitations to the study, the participants clearly indicated that they are ready and eager for speech-language therapy to be available in their community. Therefore, the next step would be to investigate implementation of therapy in the community. At the present moment, the nearest speech-language therapy available is in Mumias, a town approximately 50 kilometers away from the community where the study took place. For many people, this distance would be too great to travel and the cost of travelling too great to pay. As the responses to Questions 24 and 25 on the questionnaire (how far would the participant be willing to take somebody for therapy) indicate, less than 20% of participants would travel as far as Mumias even after being educated about the benefits of therapy and being extremely receptive to therapy. Therefore, taking loved ones to Mumias is not a feasible option for most people in the Teso community where the study was conducted.

A problem occurs in that it would take a lot of time and resources to get trained SLP's to or near all rural communities in Kenya. However, a different approach could be taken. On Question 17 of the questionnaire (*"Would you recommend sending someone in your village to a 1-2 week training session to become a speech-language therapist?"*), thirty-seven of the forty-one participants responded "very likely" on both the pre- and post-education questionnaire. Therefore, setting up training sessions to train members of rural communities to conduct SLT in their own communities could be a very viable option for quickly increasing the availability of speech-language therapy in rural settings. One such method includes community-based rehabilitation (CBR) programs, as is recommended by the World Health Organization (D'Antonio & Nagarajan, 2003) and is being tested in the Kilifi District of Kenya by the U.K. Department for International Development (2003). In this way, local people trained in speech-language therapy could be disseminated to many rural communities in a short amount of time with very few resources needed. In addition, these people would have the benefit of already knowing and understanding the local language and community, whereas a trained SLP from a different country would have to take time to overcome the cultural and language barriers of a new environment.

The participants of this study seem eager to have speech-language therapy available for the members of their community. The U.K. Department for International Development (2003) cites that 500,000 Kenyan children have communication disorders. In addition, according to the United Nations' Convention on the Rights of the Child (U.N. General Assembly, 1989), health care and rehabilitation services should be available for all disabled children so that the child may achieve "the fullest possible social integration and individual development" (Article 23 section 3). Therefore, speech-language therapy services should be made available to people in rural

Kenya. The results of this study indicate that the Amukura community would be a desirable and receptive location to establish speech-language therapy.

APPENDIX A
KENYAN QUESTIONNAIRE

1. Describe your understanding of a communication problem.

2. Do you or anyone in your family have communication problems? Please fill in the following chart with all of the members of your family who live in your household.

Adult or Child (child = less than 18 years old)	Name/ initial of Family Member	Relationship to you	Does the person have a communication problem?	What kind of communication problem does he/she have?
Adult	participant	self		

3. How many people do you know outside of your family with communication problems? _____
How many adults? _____
How many children? _____
4. Would it help this village if people with communication problems could communicate better (circle one)?
- very likely
 - somewhat likely
 - neutral
 - unlikely
 - very unlikely
5. Do people with communication problems have trouble getting a job (circle one)?
- very likely
 - somewhat likely
 - neutral
 - unlikely
 - very unlikely
6. Do people with communication problems have trouble making friends (circle one)?
- very likely
 - somewhat likely
 - neutral
 - unlikely
 - very unlikely
7. Do people with communication problems have trouble getting married (circle one)?
- very likely
 - somewhat likely
 - neutral
 - unlikely
 - very unlikely
8. Are people with communication problems being punished (by fate or God, for example) (circle one)?
- very likely
 - somewhat likely
 - neutral
 - unlikely
 - very unlikely

9. Are people with communication problems less intelligent than other people (circle one)?
- very likely
 - somewhat likely
 - neutral
 - unlikely
 - very unlikely
10. Should people with communication problems go to a person who cures or helps people with their speech (circle one)?
- very likely
 - somewhat likely
 - neutral
 - unlikely
 - very unlikely
11. Would people with communication problems have fewer communication problems if they tried harder (circle one)?
- very likely
 - somewhat likely
 - neutral
 - unlikely
 - very unlikely
12. Should the family of a person with communication problems keep that person at home to hide the problem from other people (circle one)?
- yes
 - maybe but not sure
 - neutral
 - do not think so
 - no
13. Are people with communication problems emotionally disturbed (circle one)?
- yes
 - maybe but not sure
 - neutral
 - do not think so
 - no
14. Should people with communication problems get help with their speech problem at some time in their lives (circle one)?
- yes
 - maybe but not sure
 - neutral
 - do not think so
 - no

15. Have you heard of a speech-language therapist (circle one)?

- yes
- no

16. Do you think someone with communication problems can improve (circle one)?

- very likely
- somewhat likely
- neutral
- unlikely
- very unlikely

17. Would you recommend sending someone in your village to a 1-2 week training session to become a speech-language therapist (circle one)?

- very likely
- somewhat likely
- neutral
- unlikely
- very unlikely

18. Would you encourage a trained speech-language therapist to teach people in your village about communication problems and how to help people who have communication problems (circle one)?

- very likely
- somewhat likely
- neutral
- unlikely
- very unlikely

19. Would you allow a child in your family to be treated for communication problems at school (circle one)?

- very likely
- somewhat likely
- neutral
- unlikely
- very unlikely

20. Would you send a child in your family to a clinic to be treated for communication problems (circle one)?

- very likely
- somewhat likely
- neutral
- unlikely
- very unlikely

21. Would you send an adult in your family to a clinic to be treated for communication problems (circle one)?

- very likely
- somewhat likely
- neutral
- unlikely
- very unlikely

22. Would you allow a trained speech-language therapist to come into your home to conduct speech-language therapy if someone in your home had a communication problem (circle one)?

- very likely
- somewhat likely
- neutral
- unlikely
- very unlikely

23. If therapy were available, would you take the afflicted person to a speech-language therapist once or twice a week for a few months (circle one)?

- very likely
- somewhat likely
- neutral
- unlikely
- very unlikely

24. How far away would you be willing and able to take a child in your family for speech-language therapy (circle one)?

- Name of a town 0-9 km away
- Name of a town 10-20 km away
- Name of a town 21-40 km away
- Name of a town 41-75 km away
- Name of a town 76-100 km away

25. How far away would you be willing and able to take an adult in your family for speech-language therapy (circle one)?

- Name of a town 0-9 km away
- Name of a town 10-20 km away
- Name of a town 21-40 km away
- Name of a town 41-75 km away
- Name of a town 76-100 km away

26. Who makes decisions about the care of the children in your household?

27. What do you think would be benefits of speech-language therapy in your community?

28. What do you think would be drawbacks of speech-language therapy in your community?

29. What do you think would be barriers of getting speech-language therapy to work well in your community?

30. Additional comments:

Personal Information:

Age:

Gender:

Tribe of origin:

Highest level of school completed:

Home village:

Monthly income:

Number of children:

APPENDIX B EDUCATION SAMPLE WITH VISUAL AIDS

Today, I'm going to tell you about some communication problems, what a speech-language therapist is and how speech-language therapy can help communication problems.

WHAT IS A COMMUNICATION PROBLEM AND HOW DOES IT DEVELOP?

A communication problem is any disorder in language or speech. This includes problems with:

- - saying certain sounds (*articulation*),
- - grammar, vocabulary, the structure of sentences and social skills (*producing and/or understanding language*)
- - flow of speech – an impairment in the rate or rhythm, and may be a struggle for the person to get the speech out (*fluency*)
- - problems with the way a person's voice sounds (*voice*)

People can either be born with communication problems or they can acquire communication problems sometime in their lives

Congenital problem (person is born with a communication problem): cleft lip/palate is a birth defect due to the unborn baby's exposure to harmful drugs/medications, illnesses of the mother (infections, diabetes), cigarette smoking and other unknown causes (Bzoch, 2004). (Picture of before and after surgery (see Figure 1).)



Figure B-1. Cleft Palate Before and After Surgery. (www.smiletrain.org/site/PageServer?pagename=kabir_story, 2008)

Many organizations are helping with operations to fix cleft lip and palate. Surgery can fix the way a person looks, but children with clefts often have problems producing certain speech sounds like /p/ and /b/ and they don't start talking until later than other children. They also

might sound funny when they talk (hyper & hyponasality). This makes it really hard for the person to be understood. These children need speech therapy to help them learn how to speak like other people.

I just told you about an example of a communication problem people can be born with (cleft lip and palate). Now, I will tell you about communication problems people get sometime after they are born. Most of these are due to brain damage. (Photos of brain (see Figure 2).)

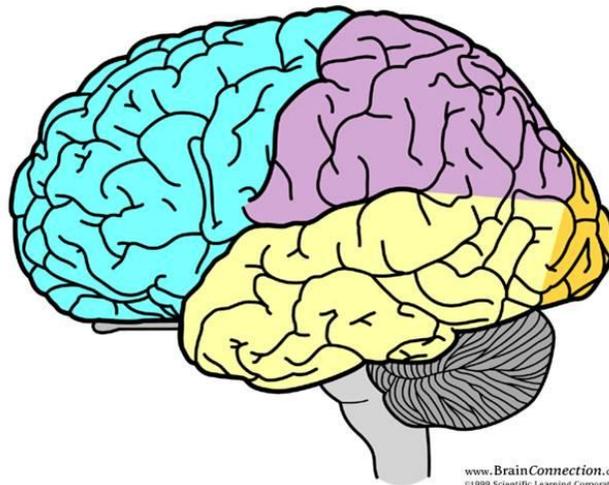


Figure B-2. Illustration of the Brain (<http://www.brainconnection.com/topics/?main=gal/brain>, 2008)

Different parts of the brain are in charge of different functions (talking, walking, reading). When the brain is damaged, the person may have trouble performing certain functions, including speaking like they used to. If the person's speech is affected, it may become very difficult to understand what the person is saying. However, the good news is that different parts of the brain can be taught to take over the functions of the part of the brain that was damaged. Speech therapy is a good way to teach the brain to do this.

Different types of problems can cause brain damage and require speech therapy:

- - cerebral malaria (mostly children) – due to a certain type of malaria acquired from a mosquito bite
- - traumatic brain injury (children and adults) – due to accidents, head injuries
- - degenerative diseases like dementia
- - strokes (mostly older adults)

(Poster of hemiparesis (see Figure 3).)



Figure B-3. Photograph of Hemiparesis (www.advancedrecovery.org/meettheclients.php, 2008)

Types of brain damage that can occur:

- problems with understanding language (both spoken and written language)
- problems recalling the names of objects, people, locations and actions (naming/word recall)
- trouble remembering things they learn or have done (memory)
- trouble understanding new information (information processing)
- trouble putting words in the correct order in a sentence (syntax)
- problems with speaking correctly and saying the sounds properly (articulation)
- trouble concentrating, which also affects memory; if you can't concentrate on something, you will be unlikely to remember it (attention)

Makes the person very difficult to understand, but speech therapy can help!

2. WHAT ARE SPEECH-LANGUAGE THERAPISTS?

Speech-language therapists are people who help other people with all of the problems we have talked about today! A speech therapist helps people with their communication problems. A speech therapist makes it easier for people to understand the person with a communication problem. Speech therapists are like teachers, but they focus on problems with speech, language and the functions of the brain. A speech-language therapist is like an occupational therapist or physical/physiotherapist; however, the OT and PT help with muscles in your body, while the ST works on rehabilitating communication. Speech therapists can help both children and adults.

Here in Kenya, there are speech therapy programs beginning in every district. In Uganda at Makerere University, there is now a degree program of Bachelor of Science in Speech and Language Therapy.

3. HOW CAN SPEECH-LANGUAGE THERAPY HELP?

Speech-language therapy helps people to be able to speak and understand better, which helps with school, reading, and understanding. It helps people with jobs and also helps socially. Some quotations from people about the effects of speech-language therapy include (<http://www.revolutionhealth.com/drugs-treatments/rating/speech-language-therapy-speech-therapy>):

Child: “Speech therapy helped me substantially . . . I had to receive speech therapy from the age of three, up until eleven. It helped me improve my communication.”

Family member: “We put him in speech therapy. This was one of the best treatments.”

Parent: “My son was speech delayed and at age 2.7 we began speech therapy for speech [and] language . . . We continued with it til he was . . . 5.5 . . . He is now 9 [years old] and people are amazed when we mention that he had been speech delayed. His vocabulary is incredible . . . and there are no speech deficits.

Now you can see that speech therapy can help you or the people you love who have communication problems.

APPENDIX C
KENYAN QUESTIONNAIRE GROUPED BY TOPIC

Attitude

4. Would it help this village if people with communication problems could communicate better (circle one)?
- very likely
 - somewhat likely
 - neutral
 - unlikely
 - very unlikely
5. Do people with communication problems have trouble getting a job (circle one)?
6. Do people with communication problems have trouble making friends (circle one)?
7. Do people with communication problems have trouble getting married (circle one)?
8. Are people with communication problems being punished (by fate or God, for example) (circle one)?
9. Are people with communication problems less intelligent than other people (circle one)?
11. Would people with communication problems have fewer communication problems if they tried harder (circle one)?
12. Should the family of a person with communication problems keep that person at home to hide the problem from other people (circle one)?
16. Do you think someone with communication problems can improve (circle one)?

Treatment Receptivity

10. Should people with communication problems go to a person who cures or helps people with their speech (circle one)?
14. Should people with communication problems get help with their speech problem at some time in their lives (circle one)?
17. Would you recommend sending someone in your village to a 1-2 week training session to become a speech-language therapist (circle one)?
18. Would you encourage a trained speech-language therapist to teach people in your village about communication problems and how to help people who have communication problems (circle one)?
19. Would you allow a child in your family to be treated for communication problems at school (circle one)?
20. Would you send a child in your family to a clinic to be treated for communication problems (circle one)?
21. Would you send an adult in your family to a clinic to be treated for communication problems (circle one)?
22. Would you allow a trained speech-language therapist to come into your home to conduct speech-language therapy if someone in your home had a communication problem (circle one)?
23. If therapy were available, would you take the afflicted person to a speech-language therapist once or twice a week for a few months (circle one)?

Other Quantitative Questions

15. Have you heard of a speech-language therapist (circle one)?
24. How far away would you be willing and able to take a child in your family for speech-language therapy (circle one)?
25. How far away would you be willing and able to take an adult in your family for speech-language therapy (circle one)?

Qualitative Questions

1. Describe your understanding of a communication problem.

3. How many people do you know outside of your family with communication problems? _____
How many adults? _____
How many children? _____

26. Who makes decisions about the care of the children in your household?

27. What do you think would be benefits of speech-language therapy in your community?

29. What do you think would be barriers of getting speech-language therapy to work well in your community?

30. Additional comments:

Not Included

2. Do you or anyone in your family have communication problems? Please fill in the following chart with all of the members of your family who live in your household.

Adult or Child (child = less than 18 years old)	Name/ initial of Family Member	Relationship to you	Does the person have a communication problem?	What kind of communication problem does he/she have?
Adult	participant	self		

13. Are people with communication problems emotionally disturbed (circle one)?

- yes
- maybe but not sure
- neutral
- do not think so
- no

28. What do you think would be drawbacks of speech-language therapy in your community?

Personal Information

Age:

Gender:

Tribe of origin:

Highest level of school completed:

Home village:

Monthly income:

Number of children:

APPENDIX D

QUOTATIONS FROM QUESTION 30 OF QUESTIONNAIRE: ADDITIONAL COMMENTS

“I need a speech therapist quickly.”

“We encourage that people who are caring . . . to come up with the service[s] so that some of the people can improve their standard of living.”

“Speech therapists should be sent to communities to assist those with communication problems.”

“Since we heard the information about speech-language therapy we are going to mobilise the community for therapy.”

“With proper civic education this community will understand the importance of speech therapy and [the] majority of victims [will] be brought out of their hiding and overcome stigma and be professionally be assisted.”

“It is good to bring such like treatments to enable people to communicate and become successful in life.”

“People can equally socialize if this service comes up in this community.”

“I congratulate the speech therapists who are able to help these people who have communication problems.”

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BIOGRAPHICAL SKETCH

Elizabeth LaFuze Gill graduated Cum Laude with her Bachelor of Arts in communication and minors in biology and French from Wake Forest University in May 2000. She then spent two years in Uganda, East Africa teaching mathematics at a rural high school through Africa Inland Mission. She received her Master of Arts in communication sciences and disorders in May 2009.