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## Speech-Language Pathologists' Barriers to Providing Services to the Deaf and Hard of Hearing Children Ages 2–9

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This dissertation, directed and approved by the candidate's committee, has been accepted by the College of Graduate and Professional Studies of Abilene Christian University in partial fulfillment of the requirements for the degree

## **Doctor of Education in Organizational Leadership**

*Nannette W. Glenn, Ph.D.*

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School of Educational Leadership

Speech-Language Pathologists' Barriers to Providing Services to the Deaf and Hard of Hearing  
Children Ages 2–9

A dissertation submitted in partial satisfaction  
of the requirements for the degree of  
Doctor of Education in Organizational Leadership

by

Irene S. Garcia-Benavides

March 2023

## **Dedication**

To my husband and daughter. I dedicate this dissertation as a reminder of the importance of what love and hard work can accomplish. To my parents as a reminder of all I owe you, from my life to all my achievements. To my Deaf friends so you know that there is no silence when our hands are working. Thank you all for shaping my life and for being the joy of it. My heart is in your hands.

## Acknowledgments

I want to give the Glory to God as He is faithful to fulfill his promises. What God has planned for people who love him is more than eyes have seen, or ears have heard. It has never even entered our minds. I am grateful for all His blessing in my life, beyond I could dream. I want to acknowledge my parents, Cecilia and Carlos, for all you have done for me. I hope to make you proud of me. Mother, thanks for showing me the power of hard work, you are an example. Thanks for loving me beyond I could ask for. I would like to thank my committee members, Dr. Lane and Dr. Starrett. Your feedback and expertise have made me grow as a researcher. To my dissertation chair, Dr. Antonina Lukenchuk, the encouraging force that calms me, and gives me strength when I feel I have given all. I am beyond grateful for helping me focus and being able to express my ideas. To my Professors from Universidad Nacional Mayor de San Marcos, for teaching me how to think about how better serve my community with solidarity. To my friends and family for all their support and for being always there for me. To the 12 hard working man and women who shared their experiences with the hope of understanding what could be better done to help the most; thank you for your efforts. I want to thank my husband and best friend, Pedro, for being so supportive and believing in me, no matter how hard and long the road was. Thanks for finding a way for my dreams to run freely. You are my rock. Thanks to my daughter Sophia, the little engine that transformed my life and made me see all things different. I love you with all I am.

*If all my possessions were taken from me with one exception, I would choose to keep the power of communication, for by it I would soon regain all the rest.*

Daniel Webster

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## Abstract

This qualitative case study explored the knowledge and experiences of 12 speech-language pathologists (SLPs) regarding the culture and linguistic processes of the Deaf culture when assessing and treating deaf and hard of hearing children ages 2 to 9. Data analysis has resulted in identification of the following main themes: (a) The Scope of Practice, (b) Barriers Regarding Culturally and Linguistically Informed Practices, and (c) Awareness of Similarities and Differences in Language Acquisition and Structures in English and American Sign Language (ASL). The findings of this study underscored the importance of knowledge that SLPs have to acquire in order to provide appropriate services to the deaf and hard hearing children. The participants referred to the lack of such knowledge during their academic studies. As SLPs in practice, they encountered several barriers in terms of assessing and treating the language of the deaf and hard of hearing children, which was due to the influence the language in which therapy takes place. Most of the participants of this study were not aware of the existence of assessments that have ASL as the language in which testing tools are standardized in order to assess vocabulary, phonology, morphosyntax, and narrative skills. This study contributes to new insights into the knowledge and experiences of SLPs who provide services for deaf and hard of hearing children.

*Keywords:* Deaf, hard of hearing, speech-language pathologists, barriers, therapy language

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## Chapter 1: Introduction

In the United States, around 48 million people have some degree of hearing loss (Martin, 1997). Five in 1000 U.S. children from 3 to 17 years old experience hearing loss at some level (Boulet et al., 2009). Once a child is suspected of a hearing loss, two types of professionals take care of the follow-up process for rehabilitation (ASHA, n.d.). Audiologists measure hearing acuity through life span. Speech-language pathologists (SLPs) are responsible for language support to navigate communication barriers for people to have access to all activities of daily living. These professionals must be certified by the American Speech-Language Association (ASHA; n.d.) for professional practice and thus follow the medical model emphasized by ASHA for assessing and treating deaf and hard of hearing children.

The medical model is only one of two models to describe deaf and hard of hearing people. In this model, practitioners consider hearing loss a handicap and therefore focus on hearing-based treatments (Martin, 1997). In the second model, the sociocultural model (McDonnell, 2016), practitioners take into consideration the Deaf culture and its language as a community (Tomaszewski et al., 2019). This model expects deaf and hard of hearing to develop within the Deaf culture and to acquire language using a visual linguistic model (Golos et al., 2018).

The hearing-focused model of training leaves SLPs with little to no knowledge, experience, or tools to assess and treat the sociocultural language needs of deaf and hard of hearing children in the United States (Cripps et al., 2016). The assessments and treatments provided to these children remain based on listening and spoken language processes, which researchers have ascertained leads to SLPs' lack of linguistic and cultural understanding and competence about the deaf community and its communication processes (Glickman & Hall,

2019; Twomey et al., 2020). Skills required to work with deaf and hard of hearing children depend on different factors such as educational placement and communication mode utilized. Aspects as direct experience, collaboration, and support from co-workers at the institutional level are needed to acquire these skills (Veyvoda et al., 2019).

However, little is known in the literature about SLPs working in different types of setting, who assess and treat deaf and hard of hearing children ages 2 to 9. In addition, limited research has explored these SLPs and their understanding of the Deaf culture and the linguistic processes within the culture. This study will inform about the barriers SLPs face in different types of settings regarding knowledge, perceptions, and experiences related to the culture and linguistic processes of the Deaf culture when assessing the deaf and hard of hearing children ages 2 to 9.

### **Background of the Study**

The degree and type of hearing loss varies from one individual to another (Ertmer, 2005). The World Health Organization (WHO; 2022) stated that the concept of “deafness” applies to a person with complete loss of the ability to hear on one or both ears. The “hard of hearing” designation applies to people whose hearing loss ranges from mild to severe, but who are capable of using spoken language to communicate (Singh & Jain, 2020). The use of hearing devices such as hearing aids or cochlear implants helps decrease the impact of hearing loss. Early detection tools enable speech and language interventions at the earliest age, as hearing is assessed shortly after birth (Alanazi & Nicholson, 2019). As hearing devices are becoming more powerful and available, society expects that a hearing-impaired individual should perform as a hearing individual and develop oral language and speech (Nalley, 2022). Ideally, a person who wears these advanced devices should be performing as a hearing person as long as hearing devices are in use.

Hearing parents also attempt to educate their children with access to sound and the hearing culture. However, as years pass by, parents tend to be more open to the use of sign language (Takala et al., 2018) as well as being part of the Deaf culture (Huang, 2017). Speaking against the hearing-focus process, Humphries et al. (2016) argued that most children who are deaf and hard of hearing suffer from language neglect due to lack of exposure to visual language. The sociocultural model (McDonnell, 2016) related to hearing loss focuses on the Deaf culture and its language community (Tomaszewski et al., 2019). This model expects a deaf or hard of hearing person to develop within the Deaf culture by learning language by sight from models. In order to acquire a visual language, children who are deaf and hard of hearing require a different linguistic model from the auditory model (Golos et al., 2018). A sign-language user community makes Deaf children learn American Sign Language (ASL; Shaw & Delaporte, 2015).

Members of ASHA are extensively trained to treat the deaf and hard of hearing people using spoken language (Cripps et al., 2016). However, many of the deaf and hard of hearing children that require speech therapy services use gestures and/or signs. This is one of the reasons, SLPs report not feeling comfortable with the training received to treat children with a diagnosis such as hearing loss (Muncy et al., 2019). Exposure to ASL is beneficial for the Communication Sciences and Disorder professional who report not feeling culturally competent to provide therapy services (Hernandez & Hadley, 2020). It should be noted that ASL is a language born within the United States however, it is taught as a foreign sign language (Shaw & Delaporte, 2015).

Communication is a human right and is involved with processes such as having opinions, expressions, and being informed (Murphy et al., 2018). ASHA members are the ones called to reduce the negative impact that hearing loss creates in social, emotional, cognitive, and

communication skills. It is important that professionals in the field of Communication Sciences and Disorders start considering the use of ASL as a way to increase access to interaction and communication. Addressing these issues within the profession could lead to a better understanding of the SLPs' role. The earlier services are provided, the better outcomes (Messel & Stand, 2019).

SLPs receive knowledge, resources, and strategies to treat the deaf and hard of hearing population, which is under the scope of practice of the Speech-Language Pathology professionals. The deaf and hard of hearing population is very diverse due to characteristics such as type of loss, degree of loss, and/or age of onset of hearing loss, etc. SLPs are extensively trained to treat the deaf and hard of hearing people using spoken language (Cripps et al., 2016). Classes such as advanced audiology and oral rehabilitation are required for certification; however, American Sign Language (ASL) or cultural responsiveness are not a requirement (Hyter & Salas-Provance, 2019).

ASHA recognizes speech and language therapy services for the deaf and hard of hearing children as part of the scope of practice of SLPs. However, based on required courses needed for certification, ASHA appears to give priority to the medical model (Tomasweski et al., 2019). There is a position statement created by ASHA (2019) that recognizes ASL as a unique language. However, ASHA also refers to ASL as a *paralinguistic communication* (ASHA, 2020). Classes such as advanced audiology, as well as oral rehabilitation are considered core classes; but ASL or cultural responsiveness are electives (Hyter & Salas-Provance, 2019). Professionals who serve the deaf and hard of hearing are trained to promote spoken language (i.e., oralism). However, there is a growing population of Deaf culture individuals who are fluent in both ASL and spoken language (Lo Bianco, 2020; Snoddon & De Meulder, 2020). For this reason, SLPs face

linguistics barriers to assess the language skills of the deaf and hard of hearing children (Veyvoda et al., 2019). Upon graduation from an ASHA-accredited institution as SLPs, these professionals do not have the tools to assess and/or treat the language deficits of the very diverse deaf and hard of hearing population (Page et al., 2018; Veyvoda et al., 2019).

The problem I address in this study is the existence of significant language barriers that prevent SLPs from treating language problems. Language deficits in ASL have been identified but not treated by SLPs (Quinto-Pozos et al., 2017). These ASL deficits lead to language deprivation in children who are deaf and hard of hearing (Glickman & Hall, 2019; Humphries et al., 2016; Twomey et al., 2020). For example, gestures play a big role in the construction of a language among typical-hearing and nontypical hearing children, as the brain combine the information received by speech and gestures as it does with speech alone (De Bot & Gullberg, 2010). While gestures are supposed to be left behind by typical-hearing children around 2 years old, gestures for children with hearing loss are crucial to the transmission to signs once the child is exposed to a sign language-using community (Armstrong, 2022).

### **Problem Statement**

The problem I address in this study was the existence of significant language barriers that prevent assessing language skills and providing treatment for deaf and hard of hearing children aged 2 to 9. These barriers stem from training that is highly oralistic (Cannon & Luckner, 2016; Hall et al., 2019; Hauser et al., 2016). SLPs graduate from programs with no awareness of Deaf culture and ASL (O'Brien & Robinson, 2017; Page et al., 2018). Certifications as Listening and Spoken Language Specialist refute the idea that ASL could be learned at the same time as spoken language (Alencar et al., 2019; Alexander Graham Bell Association of the Deaf, 2021; Lyness et al., 2013).

Language barriers include SLPs' lack of awareness of common aspects between spoken and sign language. Aspects as language universals (Sandler & Lillo-Martin, 2006) or because ASL possesses syntax, morphology, semantics, and even phonology, as any spoken language. Language barriers also include the lack of understanding of the commonalities in language acquisition for spoken and sign languages (De Bot & Gullberg, 2010; Volterra & Erting, 1990) and the importance of gestures for the acquisition of these modalities. Regarding differences between spoken and sign language, SLPs are not aware of the unique characteristics of the sign language grammar (Quinto-Pozos et al., 2017). There is no awareness of these barriers for most SLPs at the time of graduation from ASHA-accredited institutions.

There are assessment barriers secondary to lack of awareness of the existence of assessments designed for children who are deaf or hard of hearing. Most assessments utilized by SLPs are completed from an oral base (oralism) evaluation tool created for typical-hearing children. Items in these evaluations are organized from words to sentences, but it in a linear sequence. For example, as child's language advances it is expected that a child progresses from single words to three to four-word sentences. However, there is not a one-to-one correspondence between spoken and sign language. For example, three words could be expressed by one sign (Valli & Lucas, 2000).

SLPs are not aware of how language milestones are reached through the use of ASL. For example, gestures are supposed to be left behind around 2 years old for typical-hearing children; however, gestures are crucial to the transition to signs once the child is exposed to a sign language-user community. To date, there is limited research about SLPs' knowledge and perceptions related to the culture and linguistic processes of the Deaf culture when assessing and treating deaf and hard of hearing children ages 2 to 9.



## **Research Purpose Statement and Research Questions**

The purpose of this qualitative study was to investigate ways in which SLPs approach their practice of providing services to the deaf and hard of hearing children ages 2 to 9 and the barriers they can encounter along the path. This study seeks to uncover the knowledge, perceptions, and experiences of SLPs related to the cultural and linguistic processes of the Deaf culture when assessing and treating deaf and hard of hearing children between 2 and 9 years of age in different occupational settings. The occupational settings of this study include five different settings: early intervention, home health, schools, outpatient clinics, and hospitals. Cultural and linguistic processes of the Deaf include but are not limited to the importance given to sign language as the natural language of the Deaf and having access to it is considered a human right (De Meulder et al., 2019).

The primary research question that guided this study was, “What are SLPs’ knowledge and experiences related to the culture and linguistic processes of the Deaf culture when assessing and treating deaf and hard of hearing children ages 2 to 9?” Additionally, I posed the following research questions:

- What are the linguistic barriers, if any, that SLPs encounter when assessing and treating the language skills of the deaf and hard of hearing children ages 2 to 9?
- How do SLPs’ knowledge and experiences of the culture and linguistic process of the Deaf culture inform SLP therapy practices for the deaf and hard of hearing children ages 2 to 9?

## **Definition of Key Terms**

The following key terms were appropriated for the purposes of this study:

**American Sign Language.** Language of the deaf and hard of hearing community in the United States. It is the standard mean of communication among Deaf people and their families (Costello, 1998).

**Aural rehabilitation.** Educational and clinical program for assessing hearing impairments, counseling, selection of hearing devices, and auditory training (Hegde, 2008).

**D/deaf.** An individual whose hearing impairment affects normal oral language acquisition, production, and comprehension is considered deaf (Hegde, 2008). A Deaf individual is a person who is part of “Deaf culture,” a community that shares beliefs, values, and attitudes. This view takes distance from a handicap vision (De Clerck, 2016).

**Hard of hearing.** An individual whose hearing acuity is reduced however, retains the ability to orally communicate (Nicolosi et al., 1996).

**Language.** Structured symbolic system used for communication within a community (Nicolosi et al., 1996).

**Speech.** Oral communication that requires a language in order to express wants, needs, and thoughts (Nicolosi et al., 1996).

**Speech-language pathologist.** A person certified for practicing diagnosis and treatment of speech, language, voice, and feeding disorders (Nicolosi et al., 1996).

This study offers additional insight into the knowledge and experiences related to the culture and linguistic process of the Deaf culture among SLPs when assessing and treating deaf and hard of hearing children ages 2 to 9. It focuses on the importance sign language has for the provision of speech and language therapy services according to the different setting and how SLPs have used the little preparation received as students in a communication sciences and disorders programs.

## Chapter 2: Literature Review

Speech-language pathologists (SLPs) face many barriers to assess language skills on deaf and hard of hearing children ages 2 to 9. Barriers include aspects regarding limited understanding of the process of language acquisition through sign language among speech-language pathologists (Sanzo, 2022), as well as commonalities and differences between spoken and sign languages. Limited awareness regarding the similarities of language milestones regardless of the language modality used: spoken or signed. The role of gestures decreases in language acquisition at around 2 years; however, it becomes crucial for those acquiring a sign language. The gesture turns into a sign if it is part of a community where sign language is used. This study advocates for SLPs to receive more exposure to the Deaf community and ASL in order to receive more tools for assessing and treating Deaf and hard of hearing children ages 2 to 9.

A review of literature pertaining to this study is organized around the following interrelated main themes: (a) Deaf and hard of hearing communities: History and language, (b) contemporary issues in deaf and hard of hearing communities, (c) the speech language pathology practices under the American Speech Language Hearing Association (ASHA), (d) Speech language pathologist training and certification to work with deaf and hard of hearing children, and (e) theories pertaining to the study.

### **Deaf and Hard of Hearing Community: History and Language**

Deaf individuals have existed throughout human history and the use of gestures is considered to be the way languages have started (Mallery, 2001). Gestures are the first form of communication among children but are left behind as children grow and are able to produce spoken language (Chamberlain et al., 2000). However, individuals without access to sound build

a language through a visual modality as it means having full access to a language (Sanzo, 2022).

Sign language is not universal (Shaw & Delaporte, 2015) as each country or region have individual linguistic characteristics and variations. Sign language is developed by the Deaf community from unique experiences processed through visual skills. A census is able to provide the number of individuals with a hearing loss; however, it is hard to determine the number of users of a sign language as many deaf and hard of hearing individuals come from hearing families or have no deaf individuals in the family but use sign language in order to work with deaf and hard of hearing individuals.

### ***History of Deaf and Hard of Hearing Communities***

The Deaf community around the world has gone through several definitions given by the culture in which they developed. Ladd (2003) differentiated Deafness and Deafhood in western civilization through the following discourses: Graeco-Roman, Judaic, Early Christian, Monastic, Oralist, Welfare and Charity during the 19th century, Oralism and the Renewed Religious Discourse, and the Post-Milan Development. In the twentieth century the Deaf community has struggled to obtain recognition as “Deaf Culture” to leave aside the medical model that turn them into disabled people. The concept of Deaf culture has generated different discourses and definitions as the social model of disability, which argues that individuals face barriers to access secondary to a specific impairment (Donaldson et al., 2017).

The term Deaf culture designated different groups of Deaf people who came together to avoid their history and culture to continue to be neglected (Ladd, 2003). Around the world, Deaf people are gaining recognition and support in their search for social rights (Brenman et al., 2017). Groups as the World Federation of the Deaf or the National Deaf Association. Deaf-activist scholars define the Deaf community as a group of deaf and hard of hearing individuals

who share a language, experiences, values, traditions, and rules to interact with each other, and those who are hearing (Brenman et al., 2017). Developing a Deaf identity (with capital D) takes time as most of deaf children are born into a hearing family (Brenman et al., 2017; Lee & Pott, 2018). It should also be noted that Deaf culture is a concept that varies from one individual to another due to life experiences (Stapleton & Nicolazzo, 2019).

One key element to identify the members of Deaf culture has been the use of sign language (Brenman et al., 2017). ASL is the language of Deaf people in the United States (Valli & Lucas, 2000). ASL users perceive themselves as a linguistic minority (Stapleton & Nicolazzo, 2019). In a field as Communication Sciences and Disorders, the medical model will focus on the clients' lack of hearing (Brenman et al., 2017). However, the cultural perspective considers that ASL and its users do not lack hearing, but are users of another language (Gannon, 2012; Shaw & Delaporte, 2015). For this reason, the use of ASL for this community does not mean a communication disorder.

### ***History of American Sign Language***

In the United States the origin of ASL was traced to the beginning of formal education when the “American Asylum for the Deaf and Dumb” was founded in Connecticut in 1817. This institution has been renamed as the “First American School for Deaf Children” (Shaw & Delaporte, 2015). Even though the students who attended the school produced a limited set of home signs within their hearing families (gathering of Deaf people was unfamiliar). The mixture of home signs with the French Sign Language brought by the first educators of the Deaf in America, produced a standardized language later known as ASL. Martha’s Vineyard Sign Language has also been reported as a contributing element to what we know as ASL (Shaw & Delaporte, 2015), as well as signs from the indigenous population (Fronval & Dubois, 1985).

The first schools for the Deaf were residential. By the late 1880s there were 77 schools for the Deaf from which 18 used the oral method, and 59 used the manual method (Shaw & Delaporte, 2015). In 1880, the Congress of Milan took place and one of the results was the prohibition of the use of sign language for the instruction of children throughout Europe. Oralism was encouraged in order to fit within the family environment and society. However, in the United States the National Association of the Deaf (2022) opposed these measures and unified the Deaf Americans who were in favor of ASL. Many Christian groups defended the use of ASL and were part of the Deaf American Resistance (Shaw & Delaporte, 2015).

Education of the Deaf in the United States has gone through different legislation. In 1973, the Congress pass the *Rehabilitation Act*. The purpose was to protect the rights of disabled individuals in programs that received federal funding. Special needs of students were protected through section 504 of this Act. In 1975 the *Education for All Handicapped Children Act* was signed into a law known as Public Law 94-142. This law granted equal opportunities to all children with disabilities. Educating children with special needs in the same environment as typical-hearing children became the norm through what we now as mainstream (Sisia, 2012). The U.S. Department of Education reported in 2006 that 87% of deaf children attended mainstream school (Glickman et al., 2020). The main problem with this type of placement is the linguistic component, which leaves ASL out of the equation.

Moore (2001) compared student placement from 1973 to 1998. Student placement at schools for the deaf dropped from 54% to 29.9%. Placement in mainstream programs increased from 42% to 64%. Since accommodations are promised as well as no differences in curriculum, the goal of stronger academic development appears to be attainable. However, the price to pay is social and emotional isolation (Oliva, 2004; Sisia, 2012) due to a communication barrier.

According to Kral and O'Donoghue (2010), psychological disorders are 2 to 9 times as common in deaf children than hearing peers. Reduced self-esteem and identity uncertainty also may arise as a result of the struggles these children face. Even though sign language interpreters are offered as accommodation this situation does not decrease the risk of language deprivation (Caselli et al., 2020).

The pertinence of the use of ASL or switching to oral language was a topic of debate in the field of education that was started way before the Congress of Milan in 1880. The debate continues regarding communication methods to be used with the deaf and hard of hearing children. However, there has not been enough debate regarding what is the role that ASL plays for services for the deaf and hard of hearing clients, given the fact that ASL is considered a “foreign language” taught at colleges and/or universities. SLPs are expected to document bilingual client’s language strengths and weaknesses regarding the languages they are exposed to. If a patient is exposed to Spanish at home while he/she is exposed to English, it is only natural that the client is assessed in both languages. However, with deaf and hard of hearing clients, most SLPs only assess the client’s English or oral language skills. Through reassessments the results documented in the reports only focus on auditory/spoken language skills (Hall et al., 2019). Moreover, the majority of tests utilized to assess progress in deaf and hard of hearing clients are created for typical-hearing clients (Brenman et al., 2017; Hall et al., 2019; Page et al., 2018).

### **Contemporary Issues in Deaf and Hard of Hearing Communities**

The deaf and hard of hearing community has evolved over time and it composed of a very diverse population within the United States and around the world (Smith & Allman, 2020).

### *Deaf and Hard of Hearing Communities and Language*

In 2018, the World Association of the Deaf estimated that 466 million of people present with a form of hearing loss. This constitutes 6.1% of the world's population. For children ages one to 15 years, the number was calculated at 34 million or 7% of the total people with a hearing loss. It should be noted that the causes that produce hearing loss in children up to 15 years old, is preventable (Estabrooks et al., 2020). In the United States, around 32 million people have some degree of hearing loss (Martin, 1997). Five in 1000 U.S. children from three to 17-years-old have a degree of hearing loss (Boulet et al., 2009).

In 2015, the American Community Survey, administered by U.S. Census determined that in the United States, there were eleven million people with some level of hearing difficulty (Brenman et al., 2017). Early detection has been important to provide services at the earliest age as children are tested at birth through the newborn hearing screening (Alanazi & Nicholson, 2019). Through the use of technology there is more access than ever to sound due to devices as cochlear implants. Cochlear implantation is taking place for infants younger than a year. As long as these devices are properly used, the auditory nerve will continue to receive stimuli (Ertmer, 2005).

The Deaf community is a minority characterized by linguistic and cultural differences with its own modes of communication, inner relationships, and interaction with the hearing world (Cowgill et al., 2020). The use of ASL, a visual-gestural language, benefits up to one million people who are deaf and hard of hearing as their primary language (Cowgill et al., 2020). ASL has emerged from French Sign Language (FSL) brought by educators as Laurent Clerc, who co-founded the first school for the Deaf in the United States. Over time, FSL came in contact with varieties that existed in the United States, giving birth to ASL (Kusters, 2020).



There are studies that describe the Plains Indians Sign Language as the language used by the Great Plains indigenous people of the United States as a way to understand each other regardless of the differences among the spoken languages of their communities (Fronval & Dubois, 1985; Lucas, 2006; Mallery, 2001; Tree, 2009). American Sign Language continues evolving and, according to Kusters (2020), the spread of ASL through the world has highly influenced the existence of an International Sign Language (ISL).

### **The Speech Language Pathology Practices Under the American Speech-Language-Hearing Association**

In order to be certified as a provider of Speech-Language-Hearing services, individuals need to be certified as a Speech-Language Pathologist (SLP) by the American Speech-Language-Hearing Association (ASHA). Individuals must comply with the responsibilities that are part of the scope of practice within the profession.

#### ***Responsibilities and Services of Speech Language Pathologists***

In this section I provide a description of the areas ASHA members are responsible to assess and treat, as well as to provide facts regarding these areas. As certified SLPs, ASHA members provide services in areas that include all aspects of communication, swallowing and related areas as hearing (ASHA, 2016). For this reason, ASHA reports its members are qualified to “address communication disorders, differences, and delays due to a variety of factors including those that might be related to hearing loss” (ASHA, 2004). ASHA members are qualified to assess and treat language deficits.

ASHA reports that its members have the knowledge and skills to address areas such as listening, speaking, signing, reading, writing, and thinking (ASHA, 2016). In the document *Knowledge and Skills Required for the Practice of Audiological/Aural Rehabilitation* it is stated

that SLPs treating individuals who are deaf and hard of hearing should have the knowledge and skills to treat areas such as normal communicative development and the effects hearing loss produces in communication development. ASHA states that SLPs have the knowledge and skills to treat and assess communicative skills and intervention in individuals with hearing loss, as well as the prevention of communicative issues (ASHA, 2001).

### ***Five American Speech-Language and Hearing Association Domains***

To give a more precise description of professional responsibilities, ASHA includes five domains of professional practice: advocacy and outreach, supervision, education, research, and administration/leadership (ASHA, 2016). Advocacy means to make speech-language pathology services available for people who might benefit from them (Golper et al., 2018). Advocacy also means to support or promote the cause of a group (Donaldson et al., 2017). Outreach is referred to make services accessible for those who require them (Staley et al., 2019). Supervision means to translate knowledge into clinical skills through a deliberate reflection activity (Kleinhans et al., 2020). Education means to provide clinical training, education, and supervision for all students regardless of level of training (ASHA, 2018). ASHA promotes research education through ASHA Academic Affairs and Research Education Team to start and advance academic research in communication sciences and disorders careers with the purpose of increasing the number of Ph.D. faculty required to support evidence-based practice (ASHA, 2018). Leadership is referred to the new roles and responsibilities SLPs face due to the growth in our profession as we face more opportunities in the field and within our professional association (Carozza, 2019).

It appears advocacy and outreach have been successful in areas as such as identification of hearing loss at an early age through the newborn hearing screening since 1984 (Lata & Surinta, 2022). Implementation of follow-ups for the hearing-impaired children have been

successful in general (Alanazi & Nicholson, 2019). Parent education regarding hearing-impairment continues to be an area of difficulty for ASHA members. Education includes providing information to SLPs, parents, and team-member professionals who treat student or clients who are deaf or hard of hearing (Wainscott, 2016).

Regarding research and education in early intervention, it should be noted that there is no primary research-based strategies, activities, materials, and interaction to favor development of language skills (Golos et al., 2018). In education, there are important aspects regarding caseloads in collaborative teams, as such as the number or percentage of children with hearing loss, and the years of experience with children who present with a hearing loss (Page et al., 2018). Families are more involved in early intervention services when home is the placement of services (Harrison et al., 2017).

In terms of research, ASHA encourages collaboration between SLPs and teachers while working with individuals with a hearing loss plan and to deliver educational programs, including the development of communicative competence in different context (e.g., social, linguistic, and cognitive/academic). Teachers perform their job at educational settings, in center schools for deaf or hard of hearing children, as well as school programs that provide services for children who are deaf and hard of hearing. SLPs collaborate with teachers and might need to modify their roles throughout time considering children's abilities (ASHA, 2002); however, it should be noted that each professional considers their own professional parameters to document improvement and it is common to not see a coordinated work between the different areas (Wainscott, 2016).

Regarding leadership for the communication sciences and disorders professionals, SLPs and teachers are required to develop an appropriate service delivery model that takes into consideration the characteristics of the child as well as family preferences, depending on the

Child's Individualized Family Service Plan (IFSP) or Individualized Education Program (IEP). Communication mode is the most important decision a family make as the use of ASL is central in Deaf culture (Hardin et al., 2014). These could include consultation, classroom-based integrated instruction (or intervention), pull-out instruction and/or intervention, as well as community-based intervention. Many professionals as administrators and clerks working at schools that serve people with hearing loss are not fluent in ASL and are not aware of the Deaf community as a culture (O'Brien & Robinson, 2017). It should also be mentioned that many programs that serve the deaf and hard of hearing population in the United States are not accredited by the Council of Education for the Deaf known as CED (Guardino, 2015).

### ***Scope of Practice of Speech Language Pathologists***

The scope of practice in speech-language pathology includes the following responsibilities regarding communication disorders conditions found in populations with or without hearing loss: providing prevention, screening, assessment, diagnosis, treatment, intervention, counseling, and follow-up services for areas as such as speech language processing (ASHA, 2016). These areas include phonology, morphology, syntax, semantics, and pragmatics “including comprehension and expression in oral, written, graphic and manual modalities” (ASHA, 2002b). Individual and cognitive language skills, as well as the environment, determine language development (Tomaszewski et al., 2019).

Due to the aforementioned reasons, SLPs who treat the deaf and hard of hearing population should have a strong background in ASL as these responsibilities would include aspects as the identification of typical or nontypical signs in order to identify weaknesses in vocabulary acquisition (Visser et al., 2017), the order in which signs are acquired (Hall et al., 2017), retrieval of word categories (Marshall et al., 2018), or assessing language using ASL as

well as issues regarding literacy (Muncy et al., 2019). Issues regarding literacy include decoding abilities, language skills in addition to understanding of read material (Camarata-Scakusu et al., 2020).

### ***Delivery of Bilingual Service***

ASHA defines bilingualism as the ability to communicate through the use of more than one language (ASHA, n.d.). This ability considers language skills as a continuum of proficiency levels that fluctuate over time and across social settings or communication partners, topics, etc. ASHA identifies diversity within the concept of bilingualism with concepts such as simultaneous or sequential bilingualism, as well as dual language learners, and English language learners. According to ASHA, SLPs and audiologists are considered bilingual service providers “if able to speak (or sign) at least one other language with native or near-native proficiency” during clinical management. Bilingual SLPs, according to ASHA, must be able to “independently provide comprehensive diagnostic services for speech, language, cognitive, voice, and swallowing disorders using the client’s/patient’s language and preferred mode of communication” (ASHA, n.d.)

Given that clients with hearing loss younger than 5 years old whose parents are mostly hearing (around 95%) are at a serious risk of language deprivation. These clients might not be able to express their preferred mode of communication secondary to parents’ not knowing sign language, and SLPs not being able to provide therapy in a language other than oral. Another concern arises regarding the limited number of SLPs who are fluent in ASL for the huge demand of professionals to treat disorders in sign language. These are ethical and legal aspects ASHA needs to take into consideration when speech and language therapy is provided.

### ***Cultural Competence***

ASHA highlights the importance of understanding, including, and responding to the combination of cultural variables and the multiple dimensions of diversity that take place during interactions with various individuals and groups. For this reason, ASHA includes these concepts: cultural responsiveness, cultural competence, and cultural humility. ASHA provides for its members cultural competences check-ins in the areas of self-reflection, policies and procedures, culturally responsiveness practices, and gender inclusivity. ASHA also presents with a Multicultural Affairs and Resources Office to target cultural competence in different aspects, which would be a great ally to increase awareness of the importance of service provision through Deaf culture lenses, which includes the use of American sign language.

### **Speech Language Pathology Training and Certification to Work With Deaf Children**

The training for SLPs for treating deaf and hard of hearing individuals is highly oral. Members of ASHA are extensively trained to treat deaf people using spoken language (Cripps et al., 2016). Classes as advanced audiology and oral rehabilitation are required for certification to treat language disorders through spoken language.

### ***Certification to Treat the Deaf and Hard of Hearing Clients***

There is only one certification available at the postgraduate level to provide services for the deaf and hard of hearing population. This certification is the “Listening and Spoken Language Specialist” or “LSLS” (Estabrooks et al., 2020). This certification is offered by the Alexander Graham Bell Association for the Deaf. Certification can be granted either as an LSL Specialist Certified Auditory-Verbal Therapist (LSLS Cert AVT) or LSL Specialist Certified Auditory-Verbal Educator (LSLS Cert. AVEd). This certification does not include the use of ASL as a mode of communication. ASL is left out of the equation of rehabilitation for the deaf and

hard of hearing individuals. The main reason is related to the idea by which acquiring a sign language interferes with the acquisition of listening and spoken language (Estabrooks et al., 2020).

### ***Myths of ASL Interfering With Learning an Oral Language***

ASL has been neglected throughout the history of deaf education (Greenwald, 2021; Hall et al., 2017; Hill et al., 2019; Shaw & Delaporte, 2015). A high value was given to oral language in detriment of ASL (Baker et al., 2016; Ladd, 2003; Shaw & Delaporte, 2015) as ASL was believed to be lacking structure and the resources of spoken languages. The debate regarding the importance of using or neglect ASL is older than 300 years. Avoiding ASL has not only come from typical-hearing individuals, but also from members of the Deaf community as Alexander Graham Bell whose mother was Deaf. Bell proposed to teach the deaf to forget they are deaf (De Land, 1922 as cited in Ladd, 2003).

The use of sign language does not interfere with achieving normal language development (Hall, 2017). The use of listening and spoken language is not the only path to acquire normal language skills. It is believed that the use of a sign language interferes with the acquisition of spoken language in children with cochlear implants (Lyness et al., 2013). The use of spoken language is considered superior to signing as it involves different areas of the brain than those required for signing. However, spoken and sign language use similar areas from the frontal and temporal systems for language processing (Banaszkiewicz et al., 2021; Blanco-Elorrieta et al., 2018; Cheng et al., 2020; Newman et al., 2015).

There is also a myth regarding the need of sign language to be withheld while listening and spoken language is learned (Hecht, 2020). Assuming that sign language could be proficiently learned at any age is not accurate (Hall et al., 2017; Malaia et al., 2020). Leaving sign language

out of the language equation leads to language deprivation (Glickman et al., 2020; Hall et al., 2017; Mayberry et al., 2018; Sanzo, 2022), which brings terrible consequences within the deaf and hard of hearing population (Glickman & Hall, 2019). The idea of not considering possible to learn spoken and sign language simultaneously relies on the assumption that acquiring two languages at the same time causes delay and confusion (Hecht, 2020; Tao et al., 2021).

There are also myths regarding reading skills among the Deaf and hard of hearing population. It is assumed that to read successfully, the use of sound and spoken language is the only path available to complete the task; however, Deaf people learn how to use the orthographic and semantic characteristics in order to decode written information (Aho & Werfel, 2021; Peleg et al., 2020).

### **Theories Pertaining to the Study**

This study is informed by two theories. First, the sociocultural theory created by Lev Vygotsky (Alkhudiry, 2022). Second, the concept of language deprivation, created by Neil Glickman (Hall et al., 2017). I chose these two frameworks as the focus revolve around the importance of being part of a linguistic community in order to develop language and cognitive skills. In the sections below, I define each theory, identify, and define the main tenets, and connect the proposed study to the tenets.

The sociocultural theory highlights the importance of a collaborative environment that includes people, objects, and events in order to learn and develop (Javadi & Tahmasbi, 2020). For Vygotsky it was important to determine the ultimate societal goals of education (Linask, 2019). For this purpose, Vygotsky created “The Big Triad,” of positive differentiation, creative adaptation, and dynamic development (Skyer, 2020). Positive differentiation is the need for education to have social goals. Creative adaptation is the need to teach deaf students to use



models that are comprehensible along with cultural tools. In this conception, the challenge is for the Deaf educators to reject the concept of deficit by focusing on the many capabilities Deaf children possess. Dynamic development designates the capacity that Deaf children have to develop as any typical-hearing child, but to foster this development, it is necessary to develop the children's mode of knowledge, communication, and language. It is crucial to identify that the brain can develop language through signed or oral modalities. For Vygotsky, being Deaf was not the cause of disability. The social environment was the one that caused disabilities (Skyer, 2020).

The three tenets of sociocultural theory are culture, social interactions, and language (Newman, 2018). Culture is the attitudes, beliefs, modes of thinking and behaving within a community (Kramsch, 1995 as cited in Javadi & Tahmasbi, 2020). Social interaction is referred to the integration of persons making a higher level of organization to work together. It could be influenced by biological, neurological, psychological, or socioeconomic factors (Aubert, 2013). Language is defined as a form of communication to express thoughts through sentences in an endless manner (Pagel, 2017). These three tenets interact for children to develop within a society.

Throughout social interactions language skills build higher mental functions. The child needs a "more knowledgeable other" in order have access to the "zone of proximal development" (Abtahi et al., 2017) to increase these skills. Learning does not occur due to natural development, but within a culture (Linask, 2019). Language is needed to create the interaction with others through communication, but language is also a thinking tool (Linask, 2019; Newman, 2018). Therefore, language takes place within a group, but also at the personal level.

Vygotsky believed that higher mental functions as attention, memory, formation of concepts, and problem solving depended highly in language (Ehrich & O'Donovan, 2019; Linask, 2019). A person who is deprived of language experiences the absence of having an own

voice. This results in separation from social experiences, which causes exclusion. This idea changed Vygotsky's opinion regarding sign language throughout his professional career.

At the beginning of his professional career, Vygotsky had a very skeptical attitude toward sign language. Sign language was viewed as poor and limited, and not capable of expressing higher and complex ideas (Skyer, 2020). Vygotsky was aware of sign language being the language of the deaf, but without a place as a method of instruction. However, as an experienced professional, Vygotsky supported the use of sign language along the oral language. Awareness of the linguistic status of sign language as a tool (Linask, 2019) and its huge importance for social and educational purposes in deaf community increased throughout the years (Linask, 2019). By the beginning of 1930, Vygotsky was aware of sign language richness and grammatical uniqueness, as well as its capability to express facts and thoughts (Skyer, 2020).

Vygotsky's main ideas regarding deaf education included the social and physical aspects of deafness, the importance of language for children in areas as communication and development, how important sign language is for developing higher functions, the importance of bilingualism to develop the education of deaf children, and the importance of collaborative approach among those in charge of language development for deaf children (Zaitseva et al., 1999). It is evident that language play a crucial role in the children's development. Among typical-hearing children, oral language fulfills this function. Among Deaf children, sign language plays this important role.

Additionally, this study is informed by the concept of language deprivation. Hall et al. (2017) defined language deprivation as the result of a "chronic lack of full access to a natural language during the critical period of language acquisition" (p. 762) around 5-years-old. The National Association of the Deaf (NAD) has a position statement regarding the consequences of

language deprivation and its effects on early cognitive and language development and education of deaf and hard of hearing children (NAD, 2014). Hall et al. (2017) included the disruption in the area of language development as a factor of social nature that affects the epidemiology of mental illness. NAD (2014) identified language deprivation as a factor that affect the educational and employment development among deaf people lifespan regardless of the good intentions of government, schools, and professionals.

Language exposure through hearing is the norm, while language exposure through visual input is left outside of the equation for deaf and hard of hearing children (Glickman & Hall, 2019; Glickmann et al., 2020). Auditory input appears to be the only acceptable way to acquire language regardless of the cost of this option and how deficient this path results for many deaf and hard of hearing individuals (Hall et al., 20017), which was proven through outcomes in different languages (Szagun et al., 2012). Exposure to listening and spoken language does not translate into an increase in language skills as most of the time this is not an accessible way to acquire language (Anderson et al., 2016). Language exposure and access do not seem to be concepts that are interchangeable for deaf and hard of hearing children. This situation causes language deprivation, which puts deaf and hard of hearing children in a severely disadvantaged position (Glickman & Hall, 2019; Gullati, 2014).

Listening and spoken language specialists, propose refraining any visual cues and exposure to sign language for deaf children, which seems to be a high-risk idea that expose children to not having a strong foundation neither in signed or spoken language (Glickman et al., 2020; Gullati, 2019; Hetch, 2020; Szarkowski, 2018). Language dysfluency designates the stronger language a person possesses as not fluent (Hall et al., 2017). Language deprivation results in a nonfluent primary language. Not knowing the rules and structures of the strong

language makes a person dysfluent in his/her own language, which affects all aspects of life (Hall et al., 2017). The lack of native abilities in any language (signed or spoken) is a disadvantage that expose deaf children to “cognitive, socio-emotional, and behavior challenges” (Glickman et al., 2020; Hall et al., 2017).

The most noticeable difference between signed and oral languages is the modality: manual versus spoken (Baker et al., 2016). Hearing parents would teach hearing children sign language in an effort to increase language skills; however, hearing parents would not allow deaf children to use signs in order to learn how to communicate (Hall et al., 2017). Parents are not advised of how language acquisition in oral and sign language follow a common trajectory. Sandler and Lillo-Martin (2006) brought awareness of commonalities between spoken and signed languages by the concept of “separating the code from the mode.” Deaf children are denied the possibility of having sign language as a strong language, as well as the possibility to be bilingual by learning the language of the community (Wilkinson & Morford, 2020).

There is an equivalent implicit sequence for acquiring oral and signed language (Hall, 2017) as cognition is the mode to acquire a language (code). However, language acquisition appears to differ around the age of 3 years (Cupples et al., 2018) when children take the most advantage of language role models available. Given more than 90% of deaf and hard of hearing children are born into a hearing family (Baker et al., 2016), there is a lack of signed language role models, which produces language deprivation demonstrated in late and incompetent first language acquisition (Henner et al., 2019; Sehyr et al., 2018).

The professionals in charge of assessing and treating language disorders among sign language users should be the speech-language pathologist (ASHA, 2016); however, the number of SLPs who are fluent in sign language is very reduced (Shiple & Cripps, 2018). Only 618

ASHA members self-identified as fluent in ASL (ASHA, 2021). Addressing language skills among the deaf and hard of hearing population requires strong knowledge regarding language in general, as well as the unique features of this population (Golos et al., 2018; Henner et al., 2019; Quach & Pei-Tzu, 2017; Snoddon & Paul, 2020).

Differences among languages are analyzed through basic parameters: Morphology, Syntax, Semantics, and Phonology (Valli & Lucas, 2000). In the 50s, linguists started the study of signed language as natural languages (Baker et al., 2016; Snoddon & De Meulder, 2020). In the 1960s, William Stokoe performed the first study of ASL, which was used as a model to analyze sign languages around the world (Cruz & Prado, 2018). As of today, there is no questioning regarding the linguistic status of sign languages as natural languages (Baker et al., 2016). The same parameters utilized to study the grammar of any language are used to analyze sign languages around the world (Sandler & Lillo-Martin, 2006). However, this is the best time to analyze sign language material due to an increase in availability of storage capacity and more powerful video recording devices (Snoddon & De Meulder, 2020). The number of sign language users is expected to decrease as powerful hearing devices are used in order to switch from signed to oral languages; however, not all recipients of state-of-the-art hearing technology end up mastering an oral language, which has caused language deprivation as a consequence (Hall et al., 2019). For this reason, it is important to develop a strong first language (Sanzo, 2022) in order to be able to acquire spoken language.

### **Summary of Literature Review**

The review of literature pertaining to this study underscore several important points. First, the deaf community has existed for long time and is evolving in order to be able to access to their rights, which includes the use of most accessible language: sign language. A glimpse into

the history of deaf and hard of hearing persons provides telling stories about the value of spoken and signed languages. Deaf people have been linguistically deprived for centuries. Language deprivation produce language delays and disorders that lead to consequences that affect these individuals throughout their life span in different aspects. Those who are called to provide language services for this population are not trained to decrease the language deprivation situation as sign language is left out of the therapy equation. For this reason, language therapy services should include the use of sign language.

There are two theories that are most relevant to this study: sociocultural theory and language deprivation. These two theories highlight the importance of the presence of a linguistic and cultural community to support language development. For this reason, Vygotsky's sociocultural theory informs this study of the importance of the Deaf community to develop ASL and Deaf culture among deaf individuals, whose parents are mostly hearing. Members of the Deaf community become language models and play the role of the "more knowledgeable other" to promote members of the community to the "zone of proximal development" which consists in more advanced language skills. Language deprivation highlights the fact that exposing a child to the most accessible language will decrease the many consequences of not having a strong language in order to build listening and spoken language skills. Sign language is the most accessible language for deaf and hard of hearing children as it is learned through sight, regardless of hearing acuity. Spoken language can be acquired once the most accessible language is in place. Using sign language avoids language deprivation, which consequences bring life-long negative effects. Speech-language pathologists are the professionals who should help decrease linguistic and cultural barriers.

Extant literature on the subject of the use of sign languages to provide language therapy

suggests that having a strong accessible language among the deaf can lead to better results in spoken language learning. However, there are not enough studies regarding the competence to provide services through the use of ASL in the United States. There are a very few studies that focus on the knowledge of speech pathologists who are fluent in ASL. This study contributes to existing research by providing insights regarding strengths and weaknesses of core concepts among speech and language pathologists. I believe this study contributes to the literature in understanding the barriers to provide better services for deaf and hard of hearing children.

### **Chapter 3: Methodology**

This chapter addresses the theoretical positioning of this study, case study research design, data analysis, and ethical considerations and validation criteria. The purpose of this qualitative study was to investigate ways in which speech-language pathologists (SLPs) approach their practice of providing services to the deaf and hard of hearing children ages 2 to 9 and the barriers encountered along the path.

#### **Research Questions**

The following research questions guided this study:

What are SLPs' knowledge and experiences related to the culture and linguistic processes of the Deaf culture when assessing and treating deaf and hard of hearing children ages 2 to 9?

- What are the linguistic barriers, if any, that SLPs encounter when assessing and treating the language skills of the deaf and hard of hearing children ages 2 to 9?
- How do SLPs' knowledge and experiences of the culture and linguistic processes of the Deaf culture inform SLP therapy practices for the deaf and hard of hearing children ages 2 to 9?

#### **Theoretical Lens**

This study is informed by Vygotsky's sociocultural theory as this author has an important role to the educational environment. The second frame is given by the concept of language deprivation created by Glickman and Hall (2019). Both theories have coincidences regarding the importance of an accessible linguistic environment in order for children to develop language skills. Deaf individuals have been denied the possibility of a linguistic environment that includes the most accessible language: sign language. The main reason resides on the fact that 95% of deaf and hard of hearing children's parents are hearing. Upon identification of hearing loss,



parents are encouraged to seek help from professionals who offer audiological management as well as speech and language therapy. Speech therapy is offered having spoken language as the main method of communication regardless of the very variable results obtained for language development of deaf children. Deaf children end up without a strong language required for building cognition.

Spoken language is considered the norm in mainstream educational environments. While deaf children can receive speech and language therapy, the number of speech-language pathologists who are fluent in American Sign Language is definitely very little. Countless hours are typically spent in speech and language therapy throughout listening and spoken language, even though this language is the least accessible. A sign language interpreter might be offered, but due to language deprivation, students might not even know sign language. Finally, when education is offered in a second language, it is done without a strong foundation in the first and most accessible language.

### **Case Study Research Design**

This study is broadly positioned within the paradigm of qualitative research that involves “closer attention to be interpretative nature of inquiry and situating the study within the political, social and cultural context” (Creswell & Poth, 2018, p. 43). Particularly, it examines the experiences of the participants within the socio-cultural contexts of their professional practice. Qualitative case study was chosen as best suitable methodological approach to explore the experiences of SLPs in “natural settings” and as a “bounded system” (Creswell & Poth, 2018). Stake (1995) claimed that case study research is not a methodology but a choice of what to be studied. Subsequently, my choice was to get an insight into the knowledge and experiences related to the culture and linguistic processes of the Deaf culture when assessing and treating

deaf and hard of hearing children ages 2 to 9. Case study as a bounded system means that it can be “described” within certain parameters (Creswell & Poth, 2018, p. 97). Such parameters include but are not limited to specific time and place during which a case is studied, people involved in the case, or issue explored. The case as a bounded system for this study represents several parameters, namely, the participants’ experiences within the space of their various professional practices and within the timeframe, to date, of their experiences, as well as the issues that constitute the focus of this study.

Case studies take on various types and modes of inquiry: individual, collective, intrinsic, or instrumental, or a combination of some of them (Creswell & Poth, 2018). This study represents a single instrumental case study as “having a research question, a puzzlement, a need for general understanding, and feel that may get insight into the question by studying a particular case” (Stake, 1995, as cited in Creswell & Poth, 2018, p. 98). In this instrumental case study, I endeavored to (a) answer several research questions, (b) delve into the depths of some puzzling to me issues with regard to assessing and treating the language of the deaf and hard of hearing children, and (c) convey to broad audiences general understanding of SLPs’ professional practice, among other goals of this study.

### ***Participants and Site***

Upon receiving permission from the Institutional Review Board (IRB) at Abilene Christian University, I sent emails to SLPs I have previously met through social media and work with deaf and hard of hearing children (see Appendix A). Participants were also recruited through social media and from an American Speech-Language-Hearing Association (ASHA) special interest group that gathers professionals who serve deaf and hard of hearing children.

The participants for this study included 12 SLPs from five different working settings:

early intervention, home health, schools, outpatient clinics, and hospitals. The participants provide services for deaf and hard of hearing children between 2 and 9-years-old. Participants have different level of experience mostly (average of 8 years) treating the deaf and hard of hearing children. All participants hold a minimum of a master's degree in communication sciences and disorders. Credentials were verified through the ASHA roster before the interview took place. Gender, race, and state of residence were not taken into consideration in this study. These participants were enrolled through purposeful sampling. Participants were contacted according to the population served.

Participants received a participant solicitation email and a consent form prior to start interviews to accept to be part of the study. All participants treat deaf and hard of hearing children ages 2 to 9 and provide services through different types of settings. Early intervention professionals provide services for children from birth to 3-years-old. School professionals provide therapy services starting around 4 years of age. Professionals working on home health, outpatient clinics, and hospitals provide services for deaf and hard of hearing children from birth up to 21-years-old. All these professionals work with ages considered in this study.

I used purposive sampling for this study as participants were selecting upon presenting characteristics that are highly related to the phenomena (Saldaña & Omasta, 2018). In this case, participants were chosen as they worked with deaf and hard of hearing children ages 2 to 9. Purposive sampling provides benefits to qualitative evidence (Benoot et al., 2016). It should also be mentioned that purposive sampling is useful in different contexts and increases trustworthiness in data collection and analysis; therefore, methodological rigor increases (Campbell et al., 2020). For these reasons, I believe this qualitative study provided relevant information to the matter of study.

I also sought maximum variation sampling to make sure that the participants represent all professional occupational settings (Gutterman, 2015). The maximum variation sampling strategy, that is, (a) the participants should work in one of the following occupational settings: early intervention, home health, schools, outpatient clinics, and hospitals; (b) the participants should provide services to deaf and hard of hearing children between 2 and 9 years of age; (c) the participants should have different levels of experience treating deaf and hard of hearing children: (1) 0–3 years of experience, (2) 4–6 years of experience, and (3) 7 or more years of experience; and (d) the participants should hold a minimum of a Master’s Degree in Communication Sciences and Disorders.

### ***Sources of Data and Methods of Data Collection***

This study utilized a demographic survey, semistructured interview, as well as observational and self-reflective notes as sources of data.

**Demographic Survey.** The online survey obtained basic information regarding demographics as well as awareness of ASL and Deaf culture. The survey (Appendix B) was the first instrument to collect data. The survey was made of questions that focus into obtaining the following information: demographics, years of education, bilingual status, types of certifications, and basic information related to deaf and hard of hearing concepts.

**Interview.** Interviews typically provide main data for qualitative research (Creswell & Poth, 2018; Saldaña & Omasta, 2018; Taylor, 2005). The semistructured interview is the type of interview mostly used in healthcare (Gill et al., 2008), which is the field in which participants practice their profession. In the field of education, interviews are useful for current research methods, due to its importance providing insight to complexities, dilemmas, and constraints (Brown & Danaher, 2019).

I used semistructured interviews as a tool to describe and analyze the experiences of SLPs on their professional path working with deaf and hard of hearing children ages 2 to 9 throughout the different settings where these children receive services. The interviews were conducted virtually through the platform *Zoom*. Interviews were video recorded for authentication of data. Interviews were transcribed verbatim and sent to the participants for verification of accuracy. The interview (Appendix C) included open-ended questions.

I analyzed the participants' knowledge and experiences regarding the value of knowledge of ASL and Deaf culture as tools to improve services for this population. The inclusion of the experiences of the participants provided a better picture of issues considered as barriers to the provision of services. Through personal and group experiences meaningful information was gathered to establish central themes for the participants of the study (Kvale, 2011). As the interviewer, I had the opportunity to probe or ask follow-up questions remaining neutral while providing enough transition time from one topic to another (Turner, 2010). Follow-up questions allow for the possibility to assess responses (McNamara, 2009) in order to complement information.

**Observational and Self-Reflective Notes.** Arms Almengor (2018) stated there is a process of "learning to do it" (p. 21) that takes place during the practitioner's experience in order to generate knowledge and theories. Self-reflection creates a more mature attitude among individuals (Park et al., 2022). Reflective journals and reflective writing are tools to be used to increase the ability of weighing the experiences. During this study I used a journal in order to keep records of thoughts and lessons learned from the study. This written information provided a better insight of data analysis.

## **Data Analysis**

Data analysis is the process by which researchers address the issue of representing the data (Creswell & Poth, 2018). Data collection determines the quality of research (Polit, 2017). This skill is crucial to manage and reflecting on data (Saldaña & Omasta, 2018). I started the analysis by processing the data through the transcription of interviews. I identified similar words and groups of words and sentences. I labeled the information using codes (Graneheim & Lundman, 2004). I coded the information using the three analytical approaches: the template analysis, the story analysis, and the metaphor analysis (Cassell & Bishop, 2019). The template analysis is referred to the use of the whole data set to make possible to compare all responses on a given issue. The story analysis highlights the emotional aspects of the phenomenon without asking directly. The metaphor analysis allows different interpretations of the same phenomenon to be identified.

It was important for this study to identify themes; however, it is also important to analyze the emotional aspects related to the acceptance or rejection towards the use of ASL and knowing the Deaf culture to provide the best services to the Deaf and hard of hearing population. I set aside the information using data regarding language and cultural barriers as well as lack of awareness of the culture of the Deaf community. Categories and subcategories that made evident what were the language(s) used to assess and treat speech and language needs as well as the existence (or not) of culturally and linguistically informed practices. This information highlighted the importance or lack thereof of ASL and Deaf culture to provide speech and language services.

## **Validation and Ethical Considerations**

All research studies with human subjects should adhere to ethical guidelines to guide the

conduct of researchers (Saldaña & Omasta, 2018). Participants of this study were treated with dignity and respect. Participants were provided with information regarding the study in order for individuals to make an informed decision of participating or not by signing a consent form. Participants were informed of the importance of their participation to contribute to the knowledge for informed practices. Participants were assured about confidentiality and anonymity throughout the study. Each participant was assigned a pseudonym to protect their names. Participants were also informed of their participation being voluntary as they could withdraw from the study at any time without questions being asked (Creswell & Poth, 2018). I was also given permission to obtain and collect data from the IRB.

In order to establish trustworthiness in qualitative research (Guba & Lincoln, 1994) presented five criteria: credibility, dependability, confirmability, transferability, and authenticity. Credibility is related to truth of the data or subjects' point of view and the accuracy of the researcher to interpret and represent the information (Cope, 2014). Dependability is referred to the stability of the data throughout time under different conditions (Elo et al., 2014). Confirmability is related to the fact that findings originate from the data and how possible it is for the results to be confirmed by other researchers (Korstjens & Moser, 2018). Transferability is related to the possibility to transfer the results from the study to other contexts and participants. It involves detailed description (Stahl & King, 2020). Authenticity is related to the accuracy of the researcher to express the feelings and emotions of participants (Cope, 2014).

Credibility was an important aspect of this research as future readers of the research consider my researcher role and the result of this work as credible (Saldaña & Omasta, 2018). In order to build dependability, the research design was carefully planned and implemented. In order to build a solid research, data collection methods and the data are aligned with the research

questions. Information was carefully presented in order to establish themes and theories throughout this case study research. I also utilized methods of trustworthiness to increase credibility of this study. Confirmability is built from the similar experiences future readers will relate to in the study. Transferability is built from believe that more research studies that assess SLPs barriers will lead to similar results. Authenticity was reflected in presenting participants responses with utmost accuracy.

Other methods of trustworthiness employed in this study, were triangulation of data sources, member checks, rich and thick descriptions, and reflexivity. Triangulation is related to obtaining data through multiple sources (Fusch et al., 2018). Researchers take into consideration their own experiences, values, and perspectives, which creates the possibility of bias during the study. Throughout the study, I have kept a journal of my self-reflected notes to practice reflexivity and thereby address potential bias. I collected several sources of data to strengthen validation of research findings to allow for triangulation (Fusch et al., 2018). Reflexivity is related to the awareness of researcher's role regarding his/her influence in how the research is conducted and the outcomes are obtained. Reflexivity is related to the dichotomy insider/outsider researchers face (Arraiza et al., 2015).

Additionally, I employed member checks by sending the participants a copy of the interview transcript, a copy of the findings, and a draft of research summary. The purpose of member checks is the content, make comments and/or corrections (Thomas, 2017). Finally, rich and thick descriptions of the findings are typical to validate qualitative results. Thick description is related to the exhaustive analysis of experiences that include placement, events, relationships, and people during the fieldwork. It includes interpreting the meaning of events through the cultural, historical, and social context of the participants taking their feelings and emotions in



consideration (Rashid et al., 2019). Thick description allows to analyze people's actions more than words (Moriarty, 2020).

My role as the researcher of this study was to investigate the experiences of the SLPs providing language assessments and therapy services for the deaf and hard of hearing children from 2 to 9 years old. I focused on the importance of SLPs' knowledge regarding how assessments are conducted, the languages in which clients are assessed, and how much these professionals know about the importance of using one language or another. I also included the reasons by which one language is preferred over another, not only for assessment, but also for treatment. For this reason, it was crucial for this study that I assess the importance given to ASL and the Deaf culture for the provision of evaluation and treatment services. I am aware of the possible bias taking place throughout data collection and analysis.

## **Chapter 4: Data Analysis**

The experiences that participants shared during this study have given me the opportunity to better understand the knowledge and experiences of the speech-language pathologists who work with deaf and hard of hearing children ages 2 to 9 regarding linguistic and cultural processes in order to focus on the barriers these professionals face when assessing and treating this population. As the interviews took place the participants shared information regarding their professional preparation and practices, as well as their information regarding the Deaf culture and the language Deaf people identify with in the United States, which is American Sign Language (ASL).

This chapter first introduces the participants' profiles and then presents thematic analysis of the data collected from the interviews with the participants and the researchers' observational and self-reflective notes. I also considered the documents pertaining to American Sign Language, as well as practices regarding evaluations and interventions, to integrate them into a thematic analysis.

### **Introducing the Participants**

The participants of this study included 12 SLPs, 11 female participants and one male participant. This gender disparity is consistent within the speech-language pathology profession in the United States (Lindsay & Kolne, 2022). Ten out of 12 participants self-identify as White, which constitutes 83%. One of 12 participants self-identifies as Hispanic, which constitutes 8.3% of participants. These numbers are consistent with the SLP demographics within the profession. For this reason, I consider this sample as representative in aspects of race and gender among the members of the American Speech-Language-Hearing Association (ASHA, 2021).

All participants hold a master’s degree in Speech-Language Pathology. Sandra and Salma hold a Listening and Spoken Language Specialist certification, while Darcy and Roxanne are in the process to acquire this certification. The average years of practicing speech language pathology of participants is 5 years. Two participants, Ricky and Carmen, work in the early intervention setting in California. Andrea and Madison provide home health services in Texas. Darcy and Roxanne practice at the hospital setting in Texas. Karen, Sandra, and Salma provide services at the clinic setting and reside in Pennsylvania and Georgia. Monica, Virginia, and Kendra provide services at schools for the deaf in Louisiana, Texas, and Vermont. Regarding each participant’s education in ASL, only two of the SLPs (Andrea and Roxanne) had no formal instruction. It is important to note that Roxanne’s first/home language is ASL as her parents are Deaf. Similarly, Monica learned ASL in her experiences within the Deaf community. Six SLPs received formal instruction in an undergraduate environment or program. These courses, however, were very basic (i.e., focus on nouns or single words). Ricky and Carmen learned ASL at a summer immersion program. Virginia and Kendra attended and graduated from Gallaudet University (a university for the Deaf), which requires a certain level of ASL mastery for admittance secondary to classes being taught in ASL. Tables 1–5 present the participants’ demographics based on their occupational settings.

**Table 1**

*Participant Demographic in Early Intervention*

Pseudonym and gender	Race /ethnicity	ASL education	Occupational setting	Listening & spoken language certifications	American Sign Language proficiency level
Ricky (M)	White	Summer immersion prog.	Early Intervention	None	Bilingual
Carmen (F)	White	Summer immersion prog.	Early Intervention	None	Bilingual

Ricky is a male participant who holds a bachelor's degree in Linguistics and a master's in Speech-Language Pathology. Currently, Ricky is enrolled in a doctorate program. Ricky is a bilingual English-ASL clinician who works with children of all ages, including early intervention. Ricky's caseload is mostly composed of deaf patients.

Carmen holds a bachelor's and master's degree in communication sciences and disorders. Carmen is a bilingual English-ASL clinician who works in early intervention. Carmen's caseload is only composed of deaf children.

**Table 2**

*Participant Demographic in Home Health*

Pseudonym and gender	Race/ethnicity	ASL education	Occupational setting	Listening & spoken language certifications	American Sign Language proficiency level
Andrea (F)	White	None	Home Health	None	Single words
Madison (F)	White	Undergrad course	Home Health	None	Simple phrases

Andrea has her bachelor's and master's degree in communication sciences and disorders. Andrea's caseload is mostly composed of hearing children. Andrea seeks assistance from a certified listening and spoken language co-worker when treating deaf patients. Andrea complies with parental goals for speech clarity, as school is in charge of therapy using ASL. Andrea works in home health.

Madison holds a bachelor's and master's degree in communication sciences and disorders. Madison's caseload is mostly composed of hearing children. Madison seeks assistance from a certified listening and spoken language co-worker when treating deaf children. Madison uses a few signs for giving patient's indications during therapy. Madison works in home health.

**Table 3***Participant Demographic in Hospital*

Pseudonym and gender	Race/ethnicity	ASL education	Occupational setting	Listening & spoken language certifications	American Sign Language proficiency level
Darcy (F)	White	Undergrad course	Hospital	Acquiring LSLS	Single Words
Roxanne (F)	White and Black	First language	Hospital	Acquiring LSLS	Bilingual

Darcy holds a bachelor's and master's degree in communication sciences and disorders. Darcy has been trained in a listening and spoken language- specialized track. Darcy works under the supervision of a certified listening and spoken language co-worker when treating deaf children. Darcy's caseload is mostly composed of deaf children. Darcy does not use visual cues in her practice. Darcy works in a hospital and is seeking an LSLS certification.

Roxanne holds a bachelor's in communicative sciences and disorders as well as a master's degree in Speech Language Pathology. Roxanne's caseload is composed of mostly deaf children. Roxanne works at a hospital. Roxanne is considered as a CODA (Child of Deaf Adults). Roxanne acquired ASL from parents. Roxanne provides services under the supervision of a certified Listening and Spoken Language specialist. However, for patients who do not show improvement in therapy through listening and spoken language, Roxanne offers using ASL signs, through signed supported English or signed exact English, upon parent request.

**Table 4***Participant Demographic in Clinical Setting*

Pseudonym and gender	Race/ethnicity	ASL education	Occupational setting	Listening & spoken language certifications	American Sign Language proficiency level
Karen (F)	White	Undergrad course	Clinic	None	Single words
Sandra (F)	White	Undergrad course	Clinic	LSLS	Simple phrases
Salma (F)	White	Undergrad course	Clinic	LSLS	Single words

Karen has her bachelor's and master's degree in speech-language pathology. Karen's caseload is composed mostly by hearing children. Karen believes each family is unique and that all communication attempts should be valued and supported through spoken language and ASL, as well as using other alternate communicate methods. Karen works at a clinic.

Sandra obtained a bachelor's and master's degree in communication sciences and disorders. Sandra's caseload is composed only by deaf children. Sandra has been trained in a listening and spoken language- specialized track. Sandra treats patients through English and Spanish, as well any other spoken home language different from English, with parental support. Sandra does not use visual cues in her practice, unless patients have received an auditory brainstem cochlear implant. Sandra holds a listening and spoken language specialist certification and works at a clinic.

Salma holds a bachelor's degree in psychology, and a master's degree in speech and hearing sciences. Salma's caseload is composed only of deaf children. Salma works at a clinic. Salma is certified as a listening and spoken language specialist. Salma's caseload is only composed of deaf and hard of hearing individuals.

**Table 5***Participant Demographic in School*

Pseudonym and gender	Race/ethnicity	ASL education	Occupational setting	Listening & spoken language certifications	American Sign Language proficiency level
Monica (F)	Hispanic	Within Deaf community	School	None	Bilingual
Virginia (F)	White	Gallaudet Alumni	School	None	Bilingual
Kendra (F)	White	Gallaudet Alumni	School	None	Bilingual

Monica holds a bachelor's and master's degree in communication sciences and disorders. Monica's caseload is mostly composed only of deaf children. Currently, Monica is enrolled in a doctorate program. Monica is a bilingual English-ASL clinician who works at a school for the deaf.

Virginia holds a bachelor's in communication sciences and disorders with a focus on American sign language linguistics, and master's degree in speech-language pathology. Virginia's caseload is mostly composed only of deaf children. Virginia is a bilingual English-ASL clinician who works at a school for the deaf.

Kendra holds a bachelor's degree in psychology and in communication disorders, and a master's degree in speech-language pathology. Kendra's caseload is only composed of deaf children. Currently, Kendra is enrolled in a doctorate program. Kendra is a bilingual English-ASL clinician who works at a school for the deaf.

**Thematic Analysis**

As noted on Chapter 3, data analysis represents several cycles of coding. Research purpose and questions guided the process of coding. The entire process of data analysis was performed manually. I began with close reading of each interview transcript and open coding by

highlighting words, sentences, phrase, or larger language units relevant to various experiences of the participants (e.g., knowledge of cultural and linguistic contexts, language exposure, language access, etc.). The first cycle of open coding resulted in the list of approximately 300 language units. Next, I identified common codes across all interviews, and at the same time, singled out codes unique to each interview. I was guided by Cassell and Bishops' (2019; see Chapter 3) suggestions for coding. The main approach to coding was using a template that allowed me to compare the participants' response to specific issues. Open coding also afforded me to identify language units related to emotional aspects of the participants' experiences and metaphors pertaining to interpretation of the same phenomena experienced by all participants.

Open coding was followed by conceptual stages of coding (Saldaña & Omasta, 2018), whereby, I put codes related to specific experiences into clusters and I created tentative labels for these clusters. Subsequently, several clusters were reduced to more defined and meaningful categories that spoke directly to research purposes and questions. It is these categories that laid the foundation for identification of the main themes and subthemes. All in all, the entire coding process took approximately 2 months during which I read and reread interview transcripts and my observational notes, went back and forth identifying codes and emergent themes, discarding some of them and replacing them with codes and categories that were more responsive to the research purposes and questions.

As a result of data analysis, I identified the following main themes: (a) The Scope of Practice, (b) Barriers Regarding Culturally and Linguistically Informed Practices, and (c) Awareness of Similarities and Differences in Language Acquisition and Structures in English and ASL. Table 6 demonstrates the titles of the main themes and their subthemes.



**Table 6***Themes and Subthemes*

Theme	Subtheme
The scope of Practice	<ul style="list-style-type: none"> <li>• Context of service</li> <li>• Assessments used and rationale</li> <li>• Language used and rationale</li> </ul>
Barriers Regarding Culturally and Linguistically Informed Practices	<ul style="list-style-type: none"> <li>• Focus on speaking</li> <li>• Language deprivation</li> <li>• ASL proficiency</li> <li>• Lack of knowledge and training related to the deaf and hard of hearing communities</li> </ul>
Awareness of Similarities and Differences in Language Acquisition and Structures in English and ASL	<ul style="list-style-type: none"> <li>• Similarities in language acquisition <ul style="list-style-type: none"> <li>Same milestones</li> </ul> </li> <li>• Language Similarities and Differences <ul style="list-style-type: none"> <li>Word to sign correspondence</li> <li>Importance of Fingerspelling</li> <li>Iconicity of Signs</li> <li>Role of Space in ASL</li> <li>Phonology of ASL: Handshape, placement, and palm orientation.</li> </ul> </li> <li>• Main differences between English and ASL</li> </ul>

## **The Scope of Practice**

Practice environments in this study are related to the job placement, as well as the types of practice speech language pathologists perform according to this placement. Five job placements are included. In order to obtain speech and language therapy services, clients require an initial evaluation to determine if a client qualifies or not for services. Parents are the ones who inform the speech-language pathologist regarding what is expected to be accomplished in therapy. Family goals are discussed to establish a plan of care as well as the language in which therapy services are provided. Once therapy is established, evaluations continue to take place, at least every six months; except for the school environment, where evaluations are reviewed every year. The practice areas entails context, assessments, rationale, and language used in therapy. The following subthemes unfold the meaning of the findings that speak to research questions about scope of practice, cultural and linguistic practices, and knowledge of similarities and differences in language acquisition and structures in English and ASL.

### ***Context of Services***

**Early Intervention Setting.** With regard to early interventions, the participants of this study indicated usually being the first ones to serve clients after a hearing loss is diagnosed. For instance, Ricky and Carmen serve clients ages 0 to 3 years. After birth, infants receive a universal newborn hearing screening. Should screening not be passed, infants are referred to a pediatric audiologist for a second evaluation. At 3 months of age, hearing loss is confirmed or ruled out. If confirmed, the infant is referred to an ear/nose and throat doctor (ENT) to assess the need for hearing aids. As the type and degree of hearing loss is still in the process of being diagnosed, Ricky explained that the type and degree of hearing loss of clients served: “varies widely and ranges from unilateral mild to bilateral profound and everything in between.” Carmen

commented this wide range of hearing loss in clients by stating: “Most of [my] clients have mild to moderate hearing loss and use amplification.” As soon as a hearing loss is identified, children are usually referred to an early intervention professional. Participants from the study serve children from a social and cultural perspective.

**Home Health Setting.** In the home health setting, the participants serve clients who are 0 to 21 years of age. The participants of the study serve clients with profound hearing loss who wear cochlear implants. Andrea and Madison’s clients are assigned mostly based on clients’ zip codes, so their exposure to clients who are deaf or hard of hearing is limited as well as the number of deaf and hard of hearing clients who are part of their caseload. However, it should be noted the participants reported having experience with this type of clients. Andrea explained: “My patient is profoundly bilateral hearing-impaired with a cochlear implant.” While Madison shared: “Most of my clients don’t have a hearing loss. I do have a couple [of deaf clients] in my caseload. They ranged from moderate hearing loss to profound. I also had patients with cochlear implants in the past.”

Participants from the home health setting serve children with hearing loss as well as patients with typical hearing levels, being deaf and hard of hearing children a small number of clients in this type of practice. Children are served from a medical perspective.

**Hospital Setting.** In this setting, children are served from 0 to 21 years of age. Children are served by speech pathologists who may be part of a team that includes an ENT and an audiologist. These children are in the process of receiving hearing devices as traditional hearing aids, bone anchored hearing aids, and/or cochlear implants, regardless of the fact that these could be furnished unilateral or bilaterally. However, two equal devices do not produce the same outcomes in patients. Darcy notes that “most of clients are profoundly deaf and have cochlear

implants and that another portion have unilateral losses.” Roxanne reported: “I deal with the whole spectrum: babies, kids, teenagers. Kids with no device, kids with hearing aids and/or cochlear implants.” Participants at the hospital treat deaf and hard of hearing children from a medical perspective of hearing loss.

**Clinical Setting.** In this setting, the participants serve clients ages 0 to 21. It is important to note that clinical settings include speech and language facilities that exclusively serve deaf patients through listening and spoken language services, and speech and language facilities where services are provided for deaf clients as well as typical hearing clients. Karen provides services at a clinic that serves mostly hearing clients and does not consider listening and spoken language the only approach to provide services for deaf and hard of hearing clients. Karen informed:

I only have experiences with hearing families. I have experience with bilingual families. Most of my clients are not hearing-impaired. I have one deaf client on my caseload. She has a moderate to severe sensorineural hearing loss and wears a cochlear implant for the last 3, 5 years.

On the other hand, Sandra and Salma work at a clinic where language services are provided exclusively for patients with hearing loss using a listening and spoken language approach. Sandra commented about her clients: “Most are bilateral sensorineural hearing loss, but I work with children with all degrees and types of hearing loss. But I would say, probably, 70% of children have cochlear implants.” Salma declared: “Most of my clients are bilateral profound sensorineural hearing loss. That’s about two thirds, and the other one third are moderate to moderate to severe bilateral hearing loss.” Participants from the clinical setting serve deaf and hard of hearing children from a medical perspective of hearing loss.

**School Setting.** In this environment children are served from 4 up to 21 years of age. Some schools exclusively serve deaf children, and other schools serve children with hearing loss in classes with typical-hearing children, which is called “mainstream.” The three participants who provide services in the school setting, work for schools for the Deaf in Louisiana, Texas, and Vermont. Monica reported serving children whose hearing losses are “mild to moderate to severe to profound. Mostly from moderate to profound.” Kendra expressed serving clients who “have severe to profound hearing loss. A few are mild to moderate.” Virginia stated most of her “clients have severe to profound hearing loss. A few are mild to profound degree of hearing loss.” Participants from the school setting serve deaf and hard of hearing children from a social and cultural perspective of hearing loss.

The placement of services greatly influence the perspective from which deaf and hard of hearing children are offered services. Home health, hospitals, and clinics tend to offer services for a medical perspective when compared with services offered in early intervention and school environments.

### ***Assessments Used and Rationale***

The participants of the study employ various assessment techniques to evaluate language skills baseline in clients’ language development. Assessments might be standardized or not or might use criterion-reference measures in order to establish baseline. Since more than 90% of deaf and hard of hearing children have typical-hearing parents, assessments that include parental interviews are highly used among the participants to assess clients’ strengths and weaknesses. Tests as the Receptive-Expressive Emergent Language Test-4th Edition (REEL-4), the Rossetti Infant Toddler Language Scale, or the Developmental Assessment of Young Children-2nd Edition (DAYC-2). The MacArthur-Bates Communicative Development Inventories (MB-CDIs)

is also a report test that collects information from parents regarding early language abilities in children taking into consideration vocabulary at the receptive and expressive level, gestures, as well as grammar.

Participants utilize single word tests to measure receptive and expressive language skills in deaf and hard of hearing children. Tests as the Receptive One Word Picture Test (ROWPVT), or the Expressive One Word Picture Vocabulary Test (EOWPVT). The Peabody Picture Vocabulary Test-4th Edition (PPVT-4) is used to vocabulary skills. To assess expressive vocabulary skills the Expressive Vocabulary Test-3rd Edition (EVT-3) is used by these professionals.

The Preschool Language Scale 5th (PLS-5) is also very popular among SLPs throughout different settings; however, participants report that this test provides too many visual cues, which would allow users of gestures and/or American Sign Language (ASL) to obtain a higher score at the time of administration. The Clinical Evaluation of Language Fundamentals Preschool – 2nd Edition (CELF-2P) or the Clinical Evaluation of Language Fundamentals–5th Edition (CELF-5), are also quite popular, among participants. The Oral and Written Language Scale–2nd Edition (OWLS-2) is also utilized to assess language skills. The Comprehensive Assessment of Spoken Language 2<sup>nd</sup> Edition (CASL-2) was also reported to be utilized by professionals. However, participants report to use portions of these tests for assessment along with nonstandardized measures.

Regarding the use of assessments with nonstandardized measures, SLPs reported using the School-Age Language Assessment Measures (SLAM). This test contains cards to elicit the language of children who attend mid-elementary grades as well as high school. This assessment provides information up to the story level as children have to tell a story by arranging cards in

order and describing events in each section and the story as a whole. Professionals reported using this test to supplement results obtained from tests or portions of standardized tests to provide professionals with a better picture of client's language strengths and weaknesses.

We should highlight that language skills, are not the only skills tested by participants. Spoken language is also assessed for patients who receive speech and language services after the age of 3. Articulation skills are tested by participants mainly through the Goldman Fristoe Test of Articulation 3rd Edition (GFTA-3) and the Clinical Assessment of Articulation and Phonology 2nd Edition (CAAP-2). These assessment focuses on the accuracy of production of consonants and consonant clusters. Articulation assessments are completed through imitation and spontaneous production of sounds at two levels: sound in words, and sound in connected speech. The GFTA-3 test provides norms for males and females in single sounds as well as in connected speech using Standard American English. It should be noted that the GFTA-3 also has a Spanish version.

Early intervention professionals typically report having adapted these tests and supplementing the information obtained with nonstandardized measures. Ricky for instance, reported adapting the PLS-5, OWLS, and the CASL-2. Carmen added having used parts of the CASL, or the CELF-5. Carmen indicated: "Usually, I use those tests to show auditory abilities but not providing standard scores." Regarding nonstandardized or assessments, specifically for the deaf and hard of hearing children, Carmen expressed: "I much prefer to use those than adapt stuff. That's just so... complicated." These participants referred using a combination of standardized and nonstandardized measures.

The home health participants utilize the CELF-5 test to assess language, and the Goldman Fristoe Test of Articulation 3rd Edition (GFTA-3) to evaluate articulation skills. The tests used

in therapy are related to the family goals. Andrea reported using the CELF-5 for overall language adding: “that’s a basic test that I use for all patients.” Andrea indicated using the GFTA-3 as home therapy has an articulation approach secondary to family goal being to improve client’s intelligibility in order to increase language effectiveness. Madison expressed not feeling that “an average language assessment is a good skill set.” Therefore, Madison prefers “the use of functional profiles, something that is not standardized,” along with parent report and observation. This is how Madison framed it:

If you have a child that has a hearing loss, that maybe has no access to hearing aids at the moment, a PLS or CELF are not going to be a good determinant of their skills. That’s going to be inaccurately assessed.

Home health professionals reported using a combination of standardized and nonstandardized measures for testing speech and language skills.

In the hospital setting, the participants usually report the importance of adapting assessments as well as the availability of testing materials. The following tests are utilized: REEL-4, DAYC, PLS-5, ROWPVT, EOWPVT, and CELF-5. Darcy reported using the REEL-4, PLS-5, ROWPVT, and EOPVT. Darcy indicated having adapted before these with the use of an ASL interpreter. With regard to the participants of this study, Darcy stated using these tests secondary to availability. Roxanne commented using interview tests as the REEL-4, and DAYC, and having adapted the CELF5, ROWPVT, and the EOWPVT secondary to availability. Roxanne indicated not using the PLS-5 secondary to the visual cues the PLS-5 test provides. Roxanne added that adapting the tests for typical-hearing children to deaf kids as clinician believed “there are not standardized tests for ASL.” Participants at the hospital reported using standardized and nonstandardized measures.



In the clinical setting, language and articulation skills are assessed. It should be noted that there are clinics where the listening and spoken language approach is utilized, and clinics that do not follow that approach. The clinics that offer listening and spoken language provide services through professionals who are certified as a listening and spoken language specialist or are in the process to obtain certification.

At clinics where the listening and spoken language approach is utilized, language and articulation skills are assessed as if the clients were hearing children. This means neither tests nor standard scores are adapted for deaf or hard of hearing clients. The age of the client determines the assessment tool to be utilized. At centers, where listening and spoken language approach is not utilized, language might be assessed through a combination of oral language and signs from American Sign Language. Moreover, valid responses might be obtained from the use of an alternative augmentative communication (AAC) device programmed to provide responses in English.

With regard to the participants of this study, for instance, Karen indicated that the use of tests depends on the age of the client. The CELF-5 and PLS-5 are utilized for language. The GFTA-3 or CAAP-2 are used for articulation. Karen combines signs and spoken language to see if the client understands signs and follows directions. Karen reported, "I pair them together. I lean more to verbal." Differing from Karen, Sandra added:

We try not to really adapt the tests. We score the children based on their chronological age compared to children with normal hearing. Because in our program... we are always looking to see how the child with hearing loss is doing compared to children who are the same age, but with normal hearing. We really don't actually adapt the test. We just give it just as it was standardized and the only time, I would say I'm adapting, would be with the

Receptive Expressive Emergent Language Test (REEL) or the Rosetti. Since we don't have a great Spanish version. I will adapt in the sense that I give credit for things that are fairly equivalent in the home language. I will write a disclaimer: "Responses in Spanish." But in terms of adapting, specifically because they have a hearing loss, I don't really adapt any of them actually.

Karen and Sandra lean more toward spoken language; however, Karen leaves room to accommodations during testing activities.

Salma informed the use of the following tests: REEL-4, Rosetti, CELF2-P, PPVT4, EVT2, McArthur Bates Communicative Developmental Inventories (MB-CDIs), and/or any test that is age-appropriate for the client. Salma provides evaluations in English. The use of sign language does not take place during evaluations. Salma indicated, "It would be inappropriate for me to test in a language I'm not fluent in." Participants at the clinical setting use a combination of standardized and nonstandardized measures.

In the school setting, professionals reported limited availability of assessments to test skills in ASL at their facilities. Monica indicated adapting the CELF and using SLAM for kids to retell stories. Monica expressed that SLAM gives insights regarding theory of mind. Virginia commented adapting the CELF-5 and the GFTA-2, as well as SLAM because it includes testing sequences. Regarding SLAM, Virginia indicated "it's developed for bilinguals." Virginia reported taking standard scores with caution. Kendra stated giving the ROWPVT, EOWPVT, the Bracken Basic Concept Scale, the CELF, and the PVVT. It should be noted that for Kendra it is important to use tests that are standardized for deaf and hard of hearing clients. It should be noted that a combination of standardized and nonstandardized measured is used by participants,

regardless of working settings. This responds to the individual needs of children to whom services are provided as well as their families.

### ***Competent to Check Competencies***

The participants of the study had different experiences regarding level of preparedness to use tests designed for deaf and hard of hearing children. Feeling prepared resides on different aspects as: Being board certified, assessing while using their native language for evaluations, and having a listening and spoken language professional to consult before and after evaluations take place. Feelings regarding not being prepared for evaluating deaf and hard of children reside in aspects such as using language professionals who are not native users of a language, or not having a certification for treating listening and spoken language in deaf children.

Participants from early intervention responded to feel adequately prepared. Ricky reported feeling well prepared. Carmen indicated feeling prepared, especially for ages from birth to 5 years. However, Carmen feels more comfortable referring clients to the school for the Deaf for evaluations. This way, client's ASL skills could be assessed at these facilities by native ASL users. Carmen added: "If you can get those Deaf professionals' perspective of ASL, feel free to do that." This response evidences a high level of confidence regarding the level of preparation, as well as respect for the Deaf culture.

Participants from home health reported not feeling prepared but relying on a listening and spoken language professional co-worker provided by the company when working with deaf and hard of hearing children. The AVT professional provides guidelines regarding testing and therapy services. Andrea reported not feeling prepared to use tests for deaf children as these tests are not popular. Andrea feels fortunate for this type of support from the company. "I am very thankful to (SLP's name) and her expertise. Because she came and helped me do that. So, I just

kind of observe.” Madison added not feeling prepared for this type of tests and services but being in the process of learning until being confident to test and provide services for these clients.

Madison shared: “I lean on my AVT therapist to help me with those tests, for sure. I think as I am growing and learning more. I’ll become more prepared. But right now, I definitely utilize my AVT therapist.”

Home health participants do not feel confident for assessing language skills for the deaf and hard of hearing population. For this reason, the participants require the assistance of a listening and spoken language professional to guide this type of service.

At the hospital setting, Darcy reported feeling prepared to provide auditory assessments as she indicated: “I am adequately prepared to do an auditory assessment. However, if a client’s main communication takes place through signing, I don’t feel I am adequately prepared to assess the language if their main communication is signing.” Darcy’s competence is based on the use of listening and spoken language.

Roxanne reported feeling prepared to adapt tests made for hearing children, to assess deaf and hard of hearing children. However, Roxanne expressed concerns regarding the visual cues an assessment or testing tool may provide. Roxanne stated not being aware of tests made for deaf children having ASL as the main language of assessment and standardization. Roxanne declared: “I don’t know of any tests that are made for Deaf children. I don’t know of standardized tests to assess the deaf population with highlight of ASL.” Participants from the hospital setting offered mixed responses regarding being or not prepared. These participants feel confident to assess deaf and hard of hearing children using and adapting testing materials created for typical-hearing children. However, these participants are not aware of the existence of tests that are created for ASL users.

At clinics, the participants indicated feeling adequately prepared to provide tests in English but appear not to be aware of testing tools created to be used with ASL as the main mode of communication. Karen reported starting assessments with a parental interview. Karen stated not using tests made for Deaf children and inquired about the existence of standardized tests for this population. Karen declared that holding a speech and language pathologist license, along with personal experience and training, makes the authorization for testing granted. However, Karen feels more preparation is required, especially regarding subjective portions. Sandra indicated feeling prepared for testing using spoken language, but not through ASL or cued speech. Moreover, Salma commented feeling prepared for testing deaf children, but not prepared for testing Deaf children. At clinics, confidence levels to test deaf and hard of hearing children respond to the use of materials created for children with typical hearing.

Participants working at schools for the Deaf indicated not feeling adequately prepared to test Deaf clients as ASL is mostly the language in which these students get tested. For these professionals, the main issue regarding testing is related to not being native users of ASL. Monica indicated the following, “In a scale from one to five, I might be at 3,5 or four.” Virginia agrees regarding not feeling adequately prepared secondary to being nonnative to the ASL-using community. Kendra reported feeling adequately prepared to use assessments for English but preferring a Deaf native signer to do assessments on ASL. It should be noted that these professionals perform job-related activities using ASL and English within a Deaf community.

Throughout different working environments feelings of competency reside on being or not a native user of either spoken language (English) or sign language (ASL). Participants, regardless of the working environment, base the level of competency on the language in which

testing is provided. If participants provide testing in their native language, the level of competency increase.

### ***Language Use and Rationale***

The language used in therapy is determined by different factors like results of the audiometry, access to sound, parents' language preference for therapy, parental goals, and the SLPs' proficiency English-ASL level. The presence of other diagnoses along with hearing loss also determines the use of other means of communication beyond spoken language and/or ASL. In the early intervention setting, both Ricky and Carmen reported to use ASL from the beginning of therapy as these professionals are aware of language access being more important than access to sound. Ricky manifested the importance of including ASL regardless of the access to sound: "Give them everything and let's see what sticks. If a child presents with a moderate loss in the better ear, it is better to make sure to incorporate ASL in therapy, even if the family is English dominant." Agreeing with Ricky, Carmen uses ASL with her clients. Her reason for this decision is because her clients are comfortable:

Even though they have pretty decent hearing levels, they are still more comfortable with ASL as their language. I would say most of the kids I do therapy with currently, are doing ASL. For ones not doing pure ASL, we do a lot of signed supported English. So, the signs are coming to play somewhere.

Participants from early intervention feel comfortable using ASL for therapy and also educating the families regarding its importance. Incorporating English in therapy is also part of the therapy if children do well.

In the home health setting, Andrea indicated using very basic signs, like baby signs. Andrea expressed: "I don't personally use any signs." However, it should be noted that Andrea's

client attempts to communicate through signs and would fingerspell words to make sure Andrea understands the message. Andrea stated therapy consists in an oral language approach. Andrea explained: "I am not fluent in ASL. And mom is not either, so we are taking just an oral approach." Madison declared using primarily English in therapy, as well as a simple set of signs as a way to supplement what is said. The report should reflect that the client catches the visual aspect, not the auditory aspect. Results of the audiometry (aided or unaided) are extremely important to determine access to sound as well as the therapy language to be selected for treatment. Madison added: "We should not count things wrong for kids who have no input in English or verbal language." In case ASL is selected, Madison reported to be able to produce two to three-sign combinations and supplementing messages through fingerspelling. Madison shared:

If a child has been identified as part of the deaf and hard of hearing community, a six months-trial of spoken language is attempted; however, if there is no progress, another form of communication would be recommended. If a child has not been identified with hearing loss, further testing is recommended.

Participants from home health mainly use spoken language in therapy. For school-aged children, these professionals ASL is targeted at school for instruction and therapy. Within the hospital setting, Darcy shared not incorporating sign language for evaluations and/or treatments. Darcy considers the audiometry as a key component. Darcy added: "If they don't have appropriate access to sound, then I can't do therapy in English as they would not be able to hear." Darcy assesses patients on regular basis, but if in six months the client does not present with month-to-month progress, Darcy informs parents and suggests that it is needed to look into other options. However, if parental goal is to continue to keep trying to use spoken language, that is the

approach to be utilized. Even when it is known that the client might need to have a more total communication approach.

For Roxanne, therapy revolves around what kids communicate most effectively with. For this reason, at the time of evaluation, Roxanne makes an informal collection of ASL skills for baseline. Roxanne uses English and ASL, and scores results taking both languages into consideration as language differences are checked. Roxanne declared taking into consideration those answers provided through ASL as well as Signed Exact English (SEE). In Roxanne's words, "Communication matters more. I don't look at mean length utterance using sign language, and I don't look at grammar. "Regarding transition services from spoken language to sign language, Roxanne considers "a lot of times, it is not a black or white type of deal." Roxanne expressed this is a big transition:

To kind to stop auditory verbal therapy and then go on to total communication where there's sign language. The families want their child to speak so much. For this reason, the family continues getting the child assessed by the audiologist, as well as the hearing devices. There is not a set timeline for SLPs. It might take six months to change to total communication after plateau... Plateau might go and there's a possibility of increasing language as the age advances.

Roxanne indicated visual cues could be added to the auditory approach and that there is also a possibility to give parents advice about the child attending a school for the Deaf as well as the possibility of added diagnoses on top of hearing loss.

In the hospital setting, spoken language is mainly used. Progress is measured on a regular basis, while parents feel challenged by changing to a therapy visual language approach. Parents struggle to switch their children to the use of ASL and would ask hearing skills to be tested.



In the clinical setting, the facilities where a listening and spoken language approach is provided, communication skills are limited to using listening and spoken language. In case there is a need for another form of communication, clients will be referred to other professionals. Karen indicated at her clinic most of the clients are not deaf or hard of hearing children. Karen reported her practice is composed mainly of typically hearing children and explained serving a few clients with moderate to severe hearing loss who wear a cochlear implant. Karen stated including a lot of one-two word combinations throughout the course of treatment for children who are 2 years old or younger. Karen added providing “a combination of oral and signs to see if they understand signs and they follow directions.” Karen informed of pairing spoken words with ASL signs but to prefer the use of oral language. Karen stated: “I lean more to verbal. Especially in line with what families want.” For Karen oral therapy will be provided, but if there is limited progress a change is made toward something more successful “regardless it being signing or an alternative augmentative communication (AAC) device.” This offers a focus on successful communication over modality.

Sandra indicated not using ASL for treatment as therapy targets spoken language. ASL is used only with clients who have had an auditory brainstem implant, which means access to sound is limited. Sandra reported that if a patient has been implanted for a year with good access to sound, but has limited progress, the client is referred to incorporate a visual form of communication modality. This would include clients who present with an additional disability besides hearing loss. Sandra stated, “We don’t really hesitate to refer to add visual language support, whether it is sign language or for some children an AAC device is more appropriate.” It should be noted that Sandra provides therapy using the spoken language of the family. This participant’s caseload includes clients in Spanish, as well as other spoken languages other than

English. Therapy focuses on providing the family with tools to develop auditory skills in order to develop spoken language at the home environment prior to children attending school.

Salma provides therapy to children from moderate to profound sensorineural hearing loss. Salma's clients receive therapy in English or the home language. The audiogram is not considered important as all the clients' aided measures grant access to listening and spoken language. Salma stated not using ASL, only the "wait" sign for behavioral purposes and to direct focus. In case a patient presents with no measurable progress in 6 months with good access to sound, children are referred to another therapist. Salma reported using a very informal screening for children by introducing a sign and seeing if the child picks it up quickly. "Then I make the referral sooner. If that is not the case, the child is sent for more testing to rule out other diagnosis as autism, for example." Spoken language is the norm once hearing aids are received.

In clinical settings, spoken language is the norm. Facilities that provide services for children with hearing loss along with other diagnoses are open to attempt the use of a visual language and/or communication device. At clinics where services are provided for children with hearing loss exclusively, the use of visual cues is not acceptable as part of treatment using listening and spoken language. The only time when using sign language or a communication device is accepted is in case of an auditory brainstem implant.

In the school setting, participants provide services for children who present from mild to profound hearing loss with a higher incidence of moderate to profound. The language preference is ASL for the most part and spoken language only if it is beneficial. Monica reported using ASL 95% of the time and English maybe 5% of the time in case it benefits the client. The results of the audiogram are not perceived as important. For Monica: "ASL is the language deaf and hard

of people have natural access to.” This means ASL should always be used with deaf and hard of hearing children.

Virginia reported serving clients that range from mild to profound degree of hearing loss. Language preference for therapy is not important. In Virginia’s words, “We work in a bilingual bimodal program.” ASL is reported to be the language used in public spaces. Kids who are capable of using voice are welcomed to do so. Regarding the use of spoken language Virginia shared,

Almost no student benefits from speech therapy 20 minutes two times per week for spoken language. Especially for students who use ASL at school and at home environments, but success might depend on the age too. For children in fourth or fifth grade attempting to use spoken language... Train is gone at that point. I don’t recommend spoken language intervention for kids above 4 or 5 years old if their preferred modality is ASL. If a child prefers to use listening and spoken modalities, a different placement might be recommended. Every child should learn ASL. After listening and spoken language... everyone should learn ASL.

Virginia does not question the huge role of ASL in the lives of deaf and hard of hearing children.

Kendra reported having children with severe to profound hearing loss in her caseload with a few of mild to moderate cases. Kendra stated that the results of the audiometry are not going to inform the language chosen for therapy. This decision should be made with the basis of what the child can access and is most beneficial. The language to use should be the language at which children present with most success. Kendra indicated, “I use ASL as my language for therapy for almost all my kids.” Virginia advised that in case a child presents with good hearing

level, most of the session would be provided in English, but signs would be added if there is difficulty understanding.

Participants working at schools for the Deaf environment consider that ASL should be the language of therapy and English might be targeted if there is success in this language and a child benefits from it. However, age is important to predict success using spoken language.

From what different participants have reported, it is evident there is a preference for using English (spoken language) in practices where the medical model prevails. These would include home health, hospital, and clinical settings. The working environments that are more open to the use of ASL are the early intervention as well as schools for the Deaf.

### **Barriers Regarding Cultural and Linguistically Informed Practices**

The barriers regarding cultural and linguistically informed practices highlights the importance of knowledge of professional practices in the areas of culture and language, so this knowledge can enable professionals to better counsel parents regarding goals and expectations, and what speech and language therapy means for their children. This section includes the following subthemes: focus on speaking, language deprivation, ASL proficiency, and lack of knowledge related to the deaf and hard of hearing.

### ***Therapy is for Talking***

In this section the analysis revolves around the fact that most parents who seek services for their children are hearing. For this reason, the parental goal is mainly to produce spoken language. There is a focus on speaking over language skills. Producing spoken language is assumed as the measure of successful speech and language therapy outcomes. Professionals have to focus on family goals, but also have to explain parents of the importance of building language skills.

Early intervention professionals reported 95% to 100% of the clients' parents being hearing. Ricky reported that almost all come from hearing families by saying, "The most common goal that I get from parents is that they want their child to talk, to speak." Parents' secondary goal is for the child to communicate effectively. Ricky also added, "The most common [goal] is a more speech-specific goal. And the second most common is broader communication." Carmen added that most family goals are articulation-based. Parents said things like: "I want my child to be able to say..." or "I want them to speak clearly." For this reason, Carmen highlighted the need of counseling parents on the importance of language, more than speech. Regarding parental goals Carmen informed, "Most of them are focused on the oral production of language"; however, Carmen adds goals to the plan of care, that are linguistically based, not spoken articulation. Early intervention participants are required to make their clients speaking individuals.

Home health professionals informed clients' parents being 100% hearing. Andrea reported that family goals are "to increase intelligibility and to increase language effectiveness." However, this goal is related to the use of English as parents expressed a need of "higher-level vocabulary and sentence structure." Andrea shared, "We started out with kind of an articulation approach." Madison confirmed this fact by expressing, "They want their child to hear. They want them to talk. We have to modify as we know what's going on." The measure for therapy success for parents of children who receive home health services is related to speaking.

In the hospital setting, professionals reported that parents are 90% to 95% hearing. Darcy informed that almost every family has the same goal or a variation of this goal. "They want their child to listen and talk, just like them. So, it's to be able to communicate verbally within the family." Roxanne commented, "Parents want the child to talk. For kids to be like age-peers."

However, when it comes to the provision of therapy, Roxanne informs the family that there are options to develop speech and language skills. “I only give the information to the family, so I don’t push one way or another.” This means that parents who take their children for services to the hospital setting have the goal of their children being able to talk.

Professionals from the clinical setting reported parents being 95% to 100% hearing. Karen shared “parents want children to be verbal, so they can communicate with the parents.” For some parents the goal is for the children to be able to communicate, and to have access to the community. Sandra said for most of the families their primary goal is “for their child to be able to speak, to be able to use spoken language. Just like a child who has normal hearing would.” Since Sandra serve bilingual children, parents let the professional know that there is an expectation of these children being bilingual in two spoken languages. Sandra also indicated, “A lot of families are wanting to make sure their child can go to a regular school and get a regular diploma, and to be able to seek out, in the future for college, and job opportunities,” but there is also a concern regarding their child having friends and relationships. Salma indicated that the therapy goals are the family’s goals. Salma reported family goals as, “To be able to talk to their kids, to listen to them, and for their kids to live normal lives with friends, and a job. And for them to be happy members of society.” In the clinical setting, parents expect for their children to receive services and to talk.

Participants from schools for the Deaf reported having 80% of hearing parents. Monica indicated parents supporting the use of ASL. Monica explained these families’ goals are “to understand Deaf culture and prioritize ASL. To know and respect Deaf culture, even if speaking.” Monica also informed that family goals “range from opportunities to talk to building language skills.” Virginia reported, “The family want their children to be able to functionally

communicate. To express: who, what, what happened. Regarding speech, it varies.” Kendra indicated, “The most common [goal] is that the parents want their kids to talk orally.” At schools, parents have goals beyond their children to produce oral language. Parents want their children to understand Deaf culture and to communicate functionally using sign or spoken language.

Participants have been clear regarding the fact that parents bring their children to therapy in order for children to talk. Participants informed that a lot of counseling is required for parents to understand that talking does not necessarily mean an increase in language skills. Participants who work in home health, clinics, and/or hospitals require to inform parents of their children’s progress in spoken language. Other options are offered while informing parents these options are out of their scope of practice.

### ***Language Deprivation***

Language deprivation is referred to the harm made to children who do not receive enough exposure to an accessible language. Due to the presence of hearing loss, the choice for an accessible language should be ASL, in order to decrease the risk of academic struggles as well as poor school performance, just to mention short-term consequences. Since parents do not know ASL, the main goal parents request to SLPs is for their children to be able to use spoken language. SLPs should inform the parents of the importance of children acquiring a language through the means that are more accessible. This is why it is important for SLPs to implement culturally and linguistically informed practices.

Early intervention professionals inform parents of ASL being the language needed to start the provision of services. These professionals have a social and cultural vision of hearing loss. Ricky proposed SLPs should ask parents to think about language access for their children all the

time. “Children should be acquiring language in as an effortless way as possible. They should be immersed in a language that’s easy for them to access, not something they have to struggle everyday with.” Ricky highlighted the importance of including the parents’ culture in the treatment as well as the Deaf culture. Carmen reinforces this vision by considering important for kids to acquire a language in a natural way through exposure. Carmen declares: “Therapy should not be provided from a deaf deficit model but from a perspective of what can children accomplish if language tools are provided.” Early intervention participants initiate therapy using sign language and would add spoken language if child appears to benefit it.

Home health professionals in this study do not provide exposure to ASL. These professionals have a medical model vision regarding hearing loss. Since ASL is an area that school is in charge of by having an interpreter that “follows” client everywhere, these professionals work on spoken language skills. Parents do not know ASL and are not providing a rich language environment for a child who signs fluently at school. Andrea approaches therapy “from a standpoint of what the family want to achieve and it’s verbal speech.” Andrea added, “I think the patient would like to use more ASL at home. No one can interpret it or understand her. So, she resorts to verbal speech.” For Madison “being culturally aware means being able to present clients with options for communication, even outside of our scope of practice.” Madison expresses, “As an SLP, I want to build verbal language, but I am not pushing my influences into the family.” For Madison being linguistically aware means to understand that if a child knows ASL and wants to use spoken language “you have to be taking into account the linguistic differences between ASL and English.”

In the hospital setting, the medical model prevails. Darcy expressed being aware of other options to communicate but knowing being at the hospital to provide a certain type of service.



Darcy reinforces this idea by adding: “I don’t ever force a family to choose listening and spoken language therapy as their option. I am respectful of their decision, and I have resources for whatever language the family wants.” Roxanne informs families of the options to develop speech and language skills. “I only give the information to the family, so I don’t push one way or another.” Roxanne educates the families about what are ASL, SEE, and the differences between these concepts. Parents receive information about ASL not being universal and having dialects too. Roxanne educates the parents about the Deaf community, as well as the language and culture. Families need to know that “there is no one right way to communicate.”

In the clinical setting, the medical model informs practices. Karen indicated that her first thought is “to recognize and validate attempts to communicate. Not to limit family to a narrow view of what it means to communicate.” Karen emphasizes that each family is different and there is no way that fits all. Karen indicated that is important “to know what it means to be part of a Deaf family and meet in the middle with our expertise.” Karen reported using a few signs, spoken language, pictures from PECS, as well as AAC devices in order for children to communicate. Sandra reported working with families who speak a language different than English in the home environment. Sandra explained:

I’m here to provide supporting guidance on how to maximize the use of the auditory skills and spoken language. Families are asked about the activities already performed at home, and therapy adds listening and spoken language strategies to what is already happening in the home environment.

Sandra highlights the importance of having a rich linguistic input to make sure a child can be bilingual (spoken languages). Salma agrees with Sandra by expressing: “My goal is for children to talk like if they don’t have a hearing loss. That means listening to the way the child’s parents

talk. The culture of the home comes first and foremost.” Participants from clinics give more importance to listening and spoken language to the point that there is no room for visual cues in this type of therapy practice.

In the school environment, the social and cultural views of deafness inform the practice of participants. For Monica it is important “to be culturally sensitive to Deaf families and respecting their decision knowing that the biggest issue is language deprivation.” Virginia agrees, indicating it is important “to be able to understand the children in their linguistic modality and asking myself if they understand me.” Kendra reported it is important to be culturally aware by “taking their perspective and their culture into account. To foster Deaf pride/identity.” Kendra added,

Being aware of how sign language is most accessible for a hard of hearing child. Being aware of how they are learning ASL, and that that does not impact their ability of learning spoken language. Oral language should not be put as a priority over signed language.

Participants from the school environment leave room for a vision of hearing loss, other than the one informed by the medical model.

Participants require to inform parents of the importance of an accessible language to decrease the risk of language deprivation. It is up to the parents to find services that decrease this risk. Some parents turn to the exclusive use of technology without knowing the outcomes, while others are open to the use of the most accessible language: sign language. Other parents find help in a combination of these two modalities: spoken or signed.

### *American Sign Language Proficiency*

Professionals reported different levels of exposure to ASL during professional training. Some programs required ASL classes, mostly at the undergraduate level. Some professionals did not have professional training, or ASL classes. Professionals who consider themselves as proficient have had years of exposure and practice beyond what was expected from obtaining a degree in speech-language pathology.

Early intervention professionals consider themselves as proficient in ASL; however, undergrad or graduate school did not require taking ASL classes. Ricky attended ASL classes at a local community college while enrolled in graduate school. Ricky also attended an immersion summer program. Ricky reported having a close Deaf relative and being fully exposed to ASL. Carmen reported taking ASL in an immersion program at Gallaudet University. Both professionals stated consistently using ASL in therapy, and being open to incorporate spoken language only if the child presents with progress with these skills.

Home health professionals reported not having taken a mandatory ASL class as speech and language students. These SLPs do not consider themselves as proficient in ASL. Andrea stated never having taken an ASL class. Andrea reported knowing basic, signs (baby signs). Andrea indicated when speaking about her client, “She would sign words to me, spell out words with sign just to confirm I’m understanding her correctly.” Madison reported taking ASL while in undergraduate school. Madison indicated “using a simple set of signs to kind of supplement” messages for children.

At the hospital environment, professionals stated taking one class in undergraduate program, or not taking classes at all in a formal way. Darcy reported having taken a basic ASL class during undergraduate school as it was mandatory within her program. Darcy expressed not

using ASL as: “I kind of eliminate all gestures for AVT, so they’re just relying on their hearing alone.” Roxanne reported not having taken ASL in a formal instructional way; however, ASL is her first language as this professional is part of the “children of a Deaf adult” (CODA) community as both of her parents are Deaf. Darcy reported using ASL “if the child signs, I sign.” Roxanne also declared feeling comfortable if a child communicates through ASL or signed exact English (SEE) “Using ASL or SEE is not important. Communication matters more.” Roxanne is aware of differences between ASL and SEE and informs of this to the family, as well as the fact of ASL not being a universal language, which is believed by many parents.

In the clinical setting, professionals commented having taken ASL classes; however, taking these classes did not give students credit hours. Karen reported having taken one semester of ASL in undergrad and feeling comfortable combining up to two signs. Sandra expressed having taken “several classes of ASL while enrolled in undergrad school; however, these classes did not offer credits for students.” Sandra reported being able to produce four-to five-sign combinations in case patients with brainstem implants are treated. Salma indicated having taken only one ASL class in graduate school, but not for full credit: “It was done through the university, but it was not a course-hour class. It was an opt-in/opt-out free class provided to students interested in Audiology.”

Professionals at schools for the Deaf present with mixed experiences regarding the expectancy of learning ASL. Monica indicated having taken ASL classes since the age of 15; however, ASL was not a requirement neither in undergraduate nor in graduate school. Monica expressed learning ASL for personal reasons. Monica added, “I am fluent in ASL. I can hold conversations.” Regarding ASL being important for school enrollment, Virginia informed that learning ASL was a requirement to enter the Communication Sciences and Disorders program at

Gallaudet University. Virginia indicated, “I am fluent in ASL, but I am not native.” Kendra explained that knowing ASL was a requisite to enter Gallaudet University. Kendra reported being fluent in ASL, but not being a native user either.

There are no requirements within the communication sciences and disorders programs throughout the country regarding American sign language proficiency. However, there is a certification outside of ASHA scope of practice to work with deaf and hard of hearing clients and it excludes the use of ASL. This certification only includes listening and spoken language.

### ***Lack of Knowledge and Training for Deaf and Hard of Hearing Communities***

The perspective of participants regarding what were the most useful classes and what information was missing throughout the years of professional preparation varies dramatically from one work environment to another. First, we will present the classes that were described as the most useful. Then, we will present the classes professionals would have liked to be taught as future Speech-Language Pathologists serving the deaf and hard of hearing community.

Early intervention participants reported classes related to child language disorders were the most useful, as well as the “hands-on” experiences. Ricky indicated: “The most useful classes were Child Language Disorders. Assessment and Treatment. The second one would be the Clinical Phonology Class.” Carmen stated attending a program that was very much based on oral outcomes. Carmen indicated learning the most valuable lessons during her internship, and not as a student. Carmen summarizes her experience by saying, “I learned so much from the Speech Pathologist (supervisor) than any of my communication classes.”

Participants in early intervention commented that the classes they would have liked to take regarding practicum, would be classes focused on working with deaf children, an ASL class, and a class showing the perspective of the d/Deaf and hard of hearing people regarding speech-

language pathology services. Ricky explained the importance of a class about working with deaf and hard of hearing children. “A class regarding ASL for kids who are deaf or have an added or another disability.” Carmen described “a Deaf studies class. Taught by a Deaf person or some other combination classes. Not viewing things from a medical model.” Carmen considered important to learn about the Deaf perspective of therapy by saying:

We heard from a lot of speech therapist how to do speech therapy. We didn’t hear from a lot of either current or past clients of speech therapists about the good, the bad, and the ugly, and all of that.

These professionals are trying to include the Deaf perspective regarding the services Deaf people have received throughout the years.

Participants from early intervention indicated the least useful classes taken during the program were the ones related to audiology and oral rehabilitation. Ricky indicated: “The least useful class was the oral rehab class. It was entirely un-useful. It was mostly centered around oral rehab for adults.” Carmen highlighted that the audiology class presented an “audist and very oral based” perspective as this professor considered that hearing technology would eliminate hearing loss. The audiology professor spread the philosophy of “ASL is only for those very Deaf kids. Don’t worry, the technology will catch up and soon that won’t even be a thing.” These professionals do not agree with the view of technology as a “saver” for Deaf people.

For home health professionals the information received from listening and spoken language professionals and audiologists during the years enrolled in school, was the most important, even only as part of another class. Andrea informed about a presentation attended as a student: “I had a clinical instructor who was an AVT specialist. So, we got to hear from her and observe some of her sessions.” Madison reported that all students from communication sciences

and disorders attended the same undergrad program before each student decided going to specialize in either speech-language pathology or audiology. Madison explained that the most helpful class was Basic Audiology. Madison said:

Audiology One on One... super helpful. It was basic Audiology. I still go to the text.

Supported now by an AVT therapist. I can really get some good skills that I'm continuing to learn about how to treat those patients better.

Madison explained that the topic of ASL was minimally mentioned as part of an alternative and augmentative communication (AAC) class.

The home health participants indicated having liked to take more hands-on classes or classes that would focus exclusively on the deaf and hard of hearing population. Andrea reported: "I would have loved to observe those sessions for a semester and kind of really dive into assessment and treatment." These professionals have in common considering useful an audiology class to understand how to read audiograms and learning how to test hearing levels, but they also expressed it was not enough for the many challenges faced when treating this population. Madison explained: "It would be great to have deaf and hard of hearing classes to help support that population in children." All participants from home health expressed they would have liked to have more exposure to the diagnosis of hearing loss while they were students.

In the hospital setting, participants considered classes regarding foundation in Audiology were the most important classes. As a student, Darcy attended a specific auditory track where each semester, students would attend two or three extra classes specifically on auditory-verbal therapy and listening and spoken language (LSLS). Darcy stated:

I felt those were the most helpful classes because that is the type of therapy I'm trying to provide. It was called the "LSLS track," and included classes as pediatric audiology, LSLS in the classroom, LSLS in therapy. These classes focused on the three main aspects of LSLS: having a therapist, having them [children] in a school that provides the therapy, and an audiologist. There was a rotation with these three disciplines.

Roxanne reported that useful classes were "those about typical development of children, hierarchy for speech and language skills being the same for children with hearing loss." Since Roxanne was raised in the Deaf community, this professional has not previously known "there was something like AVT." One participant considers the audiological information as crucial, while the other one place more importance on language development.

Regarding classes that would have been useful, the hospital professionals would have liked to learn more about the Deaf culture as well as the impact hearing loss produces in the brain. Darcy reported feeling good about her program and the classes provided; however, a class in Deaf culture would have been important. Darcy added: "It might have been nice to have one that was more specific on Deaf culture, with capital D. But at the same time, I understood why there wasn't one. Because there was a specific LSLS track." Roxanne would have liked to have classes about deaf culture and language differences, as those concepts were learned from her own experience. Roxanne would have liked an auditory rehab class and auditory skills, as well as their impact in the brain. Also, a class that introduces to AVT. Roxanne indicated, "I grew in the Deaf community, so I did not know there was something like AVT."

Regarding participants working in the clinical setting, the classes this group considered most useful were the ones related to the knowledge of audiology as well as language development. Karen considered classes about normal language development as useful. Karen



indicated “to see how children learn and develop language. To compare deaf and hard of hearing kids to those with normal hearing.” Karen reported still having her notes from that class and not having taken a class to treat Deaf kids, not having in-depth education for this population. Karen admitted: “I took a required undergraduate Audiology class. A general entry level course. And I had one ASL semester in undergrad. During my undergrad classes, no real-life treatment classes took place.” Sandra explained that the following classes were the most impactful as they were practice-oriented:

The most useful classes took place in graduate school as part of my hearing loss specialty track program. In undergrad, a core class would be “Fundamentals of Hearing.” The notes of this class are still kept and used for clinical practice and were instrumental in preparation for the listening and spoken language specialist certification. In graduate school, since I attended the specialty track program, there were seven additional classes that were specific for children with hearing loss. These classes were a combination of pediatric audiology for students who specifically wanted to be pediatric audiologists, teachers of the deaf, and SLPs specialized in hearing loss.

Sandra attended a deaf track program. For this reason, audiology is a priority for knowledge and expertise.

Salma reported a specific pediatric hearing loss course as probably the most useful course because “it directly leads to a foundation for my auditory-verbal practice.” Neuroanatomy was also described as important to understand hearing loss and informing the understanding of what ENTs and audiologists measure, which enables this professional to assist families in understanding technical or anatomical issues regarding their children in order for families to make better informed decisions and troubleshooting with their children. Pediatric feeding was

also described by Salma as useful to help the families decrease allergies that cause build-up in the children's sinuses, which generates middle ear fluid, especially for children whose hearing loss fluctuates.

Among the participants in the clinical setting the classes they would have liked are those related to treatment and hands-on techniques or counseling. Karen reported having liked to take a class for treating this population "something like implementing oral rehabilitation. Auditory processing disorders." Sandra would have liked taking even more audiology classes, hearing technology issues, and literacy. Sandra indicated: "going deeper into literacy, that would have been really good." Salma reported being interested in a counseling course, especially grief counseling in order to better help the families. Salma added: "It would have been helpful to at least have some experience giving OAEs or watching an ABR to have better hands-on knowledge on the test we are looking on paper." Participants in the clinical setting give more importance to medical than cultural issues regarding the deaf population.

For participants working at the schools for the Deaf, the most important classes taken are not related to clinical issues as audiology or anatomy, but to a social or cultural views of deafness. Monica reported as important the classes that targeted issues as audism, for example. Learning about language deprivation and language disorders. The classes about critical period of language learning or access, or language access. "The classes that stated that Speech is not the cure for being Deaf." The medical information seems useful, but not of a core importance.

Virginia reported that the most useful classes were learned outside the Communication Sciences and Disorders. Virginia indicated, "Maybe in the Linguistics Department and the ones during the master's degree years in Gallaudet." The classes from the bachelor's degree as well as all learned when attending the motion lab in Gallaudet. Competency of ASL was definitely

learned while interacting with Gallaudet students. Kendra highlights it was great to attend Gallaudet university, “which provides a more positive experience than other people you’re interviewing, but I remember... actually, we were required to take clinical sign language.”

School for the Deaf professionals expressed having liked to take classes that included a cultural vision of hearing loss beyond the medical perspective, including language deprivation. Monica considered the following:

The audiology class should change a lot. Only 1/3 of the information from the audiology class is useful. The other 2/3 is how to read audiograms. We don’t do that. What about neuropathy, hearing exhaustion, levels of tinnitus? Our job is to provide language access. Aural rehabilitation class should change. The concept of language deprivation should be taught.

Virginia echoed: “I would have liked taking a class regarding history of Deaf participation in research. I would like a class regarding how to collaborate with Deaf colleagues and ASL specialists. A class focusing more in ASL, and less in English.” Kendra agreed by adding: “I would have liked a class explaining issues as language deprivation. Classes regarding treatment in ASL because everything is so focused on English. Even at Gallaudet.” Participants from schools for the deaf are interested in cultural and linguistic issues regarding the Deaf community in order to better serve this population, and these participants understand this knowledge is not given as part of the courses to pass as students.

Throughout the country, there are no communication sciences and disorder programs that include a class that treat the deaf and hard of hearing as a separate population with its own language and culture. The only classes regarding this population are the ones related to

audiology as well as oral rehabilitation. The vision of Deaf people is left outside of the coursework for certification as speech-language pathologists.

### **Awareness of Similarities and Differences in Language Acquisition and Structures in English and American Sign Language**

Participants were inquired regarding similarities and differences in language acquisition and structures in English and ASL. It is important to ask professionals regarding their knowledge of language acquisition regardless of modality in order to establish importance of exposing children to a language that is accessible at an early age. Language skills should start developing regardless of it being spoken or signed. The main differences between language modalities are also exposed in order for professionals to be aware of commonalities and differences between these two languages. ASL has the same language characteristics as English, but the way it develops in areas as vocabulary, phonology, syntaxis, and morphology might be different. Professionals who considered themselves as fluent in ASL appear to be more aware of these issues, as well as the importance of space the development of ASL skills.

#### ***Similarities and Differences in Language Acquisition***

Early intervention participants agreed on milestones being similar for English and ASL. Ricky explained: “It’s almost the same. The milestones mirror each other. The differences that you see are more specific to modality.” Ricky explained the use of space by ASL users compared to the use of morphemes to English users. Ricky added: “ASL has milestones for its own morphemes but is a modality issue.” Carmen agreed regarding that milestones are identical, but there are differences related to language structure. Carmen highlighted the difference between language access and exposure: “A kid who is deaf or hard of hearing have tons of exposure to

spoken English, but if they have no access to spoken English, that won't be the same." Carmen highlights that given a language environment, the acquisition should be the same.

Participants from home health reported language acquisition process being the same for both languages. It is important to note that it is believed sign language could be well learned at any age, which is different from spoken language. Andrea informed: "It's the same as for needing modeling and context to acquire," and indicated "I don't think it's the same as far as syntax. You are going to go through kind of the same hierarchies." Madison explained: "As far as progression of acquisition... it's not any different." However, Madison believed that sign language learners and spoken language learners use different parts of the brain to process language, and for this reason, the visual cortex is used to learn ASL. Madison learned from an AVT therapist: "You can learn ASL at any age of your life, versus we have that age of acquisition for verbal speech, where it gets more difficult for us to learn another language after a certain age." This is considered a myth by ASL acquisition researchers.

In the hospital setting the perception of participants is mixed. Darcy believed that grammar structure is completely different between these two languages. Darcy reported only knowing baby signs, and not being versed in ASL, "I don't feel like it translates to actual ASL. I don't know if I can speak to that question adequately." Roxanne reported acquisition being the same through a different mode, as children understand language at about the same rate; however, ASL users are able to express themselves a bit younger as the coordination required to sign appears earlier than the one for speaking. For Roxanne language can be developed at a good rate in English and ASL. Roxanne explained, "It really depends on what you're exposed to in your environment." Roxanne is aware of the importance of language exposure in order to acquire language; however, exposure and access are considered different by participants of the study.

In the clinical setting the participants' responses were mixed secondary to the many differences between English and ASL. Karen considered "English and ASL are completely different in grammar and sentence structure, being ASL motion-based, and having expressions." For Karen "Little ones have different onsets for picking ASL, but there are general milestones for language acquisition." Sandra admitted not being an expert in ASL, but knowing ASL grammar is based on facial expressions, body position, and nodding. Sandra understands that speaking and signing is not true ASL, because the word order would be different. Sandra considered acquisition is "sort of same at a basic level, a lot of things. Like people working on just simple vocabulary, but there's a lot more than vocabulary." For Salma there are differences as being easier to use words in ASL, while longer utterances are easier using spoken language. For Salma signs are picked faster, but once a child is able to say words "the signs become extinct." Regarding acquisition, for Salma "the development is parallel. Children develop fully with either language."

School participants considered acquisition being the same. Monica highlighted the importance of joint attention, being in each other's visual field, and the way attention is shifted as a difference. Working memory is different for users of each language. Virginia added that "ASL is acquired within the same trajectory as English." However, first words appear earlier in signers (7-9 months). Kendra explained: "In terms of linguistic complexity, they go hand in hand. Language acquisition is not different. They follow the same trajectory. Same-like milestones. Except those kids can produce signs earlier than words." Participants from school show awareness of the similarities over the differences in acquisition. Language acquisition classes target language development among individuals with typical development; however, it

appears that language development in children with disabilities is a topic that has not been taught in depth by programs in speech language pathology.

### *Language Similarities and Differences*

**Word to Sign Correspondence.** Participants from all working settings exhibit awareness of the lack of correspondence between signs and words. Ricky explained, “But there’s not a one-to-one correspondence between any two languages.” Madison added, “If you are doing Signed Exact English (SEE), that’s going to have a one-to-one correspondence, but not true ASL.” Darcy added, “Grammar is different. They have a lot of different body language, and it goes with different words. So, it’s not one-to-one word. That would be signed English.” Roxanne reflected, “There is correlation with Signed Exact English (SEE). SEE is used to help kids learn English.” Karen stated, “In 1-2 words, yes... But if you are trying to use adult grammar, it’s all different.” Salma noticed, “Not always, there are some concepts that are unique in each. The way ASL sets a layout to the setting. Kind of describing where everything is and then telling the story.” In general, participants are aware of the lack of word to sign correspondence.

**Importance of Fingerspelling in American Sign Language.** Participants who feel competent using ASL are the ones who exhibit awareness regarding the importance of fingerspelling beyond naming a letter. Sign languages give different levels of importance to fingerspelling; however, ASL considers it very important. Ricky declares, “I believe ASL is one of the ones that uses it a lot... Fingerspelling is how we are able to borrow English words to ASL and it is important as early as at the age of 3 years.” Carmen agrees, “It leads to more literacy success... I can’t quote right now, but there’s an absurd percentage of words in ASL that involve fingerspelling. It’s very crucial.” Roxanne explained about fingerspelling, “It’s very important for words without a sign. For the names given within the Deaf community.” Sandra considered it

as an important issue: “There are definitely words where there is a sign, but then also there’s fingerspelling for names and proper nouns.” Monica added fingerspelling “is crucial and it needs to be incorporated at a young age, before the kids read and write. It’s very used in ASL.” Virginia affirmed it is very important:

Mayberry has a paper that cites that ASL is 30% fingerspelling. This is due to preserve the most semantically significant part of the utterance and they might miss it if they don’t have a good interpreter or if they don’t have access to fingerspelling.

Participants are aware of fingerspelling being important for ASL vocabulary and also to loan new words from spoken languages.

Kendra reported ASL fingerspells more than other sign languages as she states, “ASL is heavy in fingerspelling. It helps bridge students to written English.” Participants with limited preparation in ASL referred to fingerspelling only as a mean to spell a word using fingers. Andrea responds, “[fingerspelling] is very important. My patient uses fingerspelling pretty often.” However, this professional is referring to the fact that her patient has to fingerspell words to clinician in order to know they are talking about the same issue. Madison reduces fingerspelling to spelling words by explaining: “It is super important for members of the Deaf community. We don’t use fingerspelling aside from names of people, and even names of people can be shortened. They make their own sign, theirs.” This participant only appears to be taking into consideration the process of fingerspelling for defining topic of conversation.

Darcy expressed doubts, “I would imagine it’s important. What is actually hard is to translate while they’re talking, and they have to spell out... and that takes so long.” Karen informed not using fingerspelling frequently, “Occasionally. Individual letters are used for a sign name. I don’t typically spell with my children. We focus more on functional communication.”



Salma considers fingerspelling important to acquisition of new concepts, “but it’s only important as the person is literate.” This comment seems not to take into consideration that some signs are made out by fingerspelling words.

Fingerspelling is used for explaining concepts but also is a process to build new signs. Not all participants are aware of these two processes that take place in ASL. Moreover, there are research studies that mention fingerspelling help children to learn how to read and write.

**Iconicity of Signs.** There is an idea that implies that all signs are iconic, which means, the sign should reflect characteristics of the designated object. The participants who considered themselves as fluent in ASL provided consistent and reasonable answers. Ricky reported signs not being mostly iconic by saying “Most [signs] are not. It depends on how you judge iconicity. I’m going to say 30% and it’s probably way off, but I have no idea.” For Carmen most signs are not iconic: “Probably about 20% are. I would say that a lot of noun-concepts are very iconic.” Roxanne responded by saying that most signs are not iconic, less than 30% by stating: “A lot of words use the first letter on a word to make a sign.” Sandra reported that most signs are really symbolic and added, “Maybe 20%. I never thought about that.” Monica replied that what we assume as iconic, might not truly be, especially if context is not given. Monica said, “Maybe 25% to 30% are. Signs are not iconic if context is not given.” Virginia reported most signs are not iconic. “Last time I read it was 11%, but it’s so arbitrary.” Kendra added that the percentage of iconic signs is very low, around 5% as “people perceive them as iconic because they have background knowledge that makes them iconic. But they’re not actually iconic.” Participants were unable to provide a number to represent the percentage of iconicity in ASL.

Andrea responded this was a hard question by replying, “Maybe 75%. I’m just guessing.” Madison responded signs are mostly iconic by saying, “Because the signs are movement-based,

or they are facially based. Or do you do the same sign with different facial expression to mean something different?” Darcy reported not being sure, but from what was remembered from the ASL basic class taken before “only a small portion of it were actually iconic. I want to say from 10% to 20%.” Karen highlighted, “There’s an equal mix. Maybe 50-50.” Sandra replied: “I would say 50-50. Most people feel sign language is just gestures or acting things. But I think that’s wrong. I think there a lot of symbolic gestures.” No consensus was obtained regarding the level of iconicity of ASL signs.

There is a debate regarding signs being iconic or symbolic. The percentage of signs in each category vary along with the perception of iconicity. However, participants are aware of signs having a higher or lower degree or symbolism and that not all signs are iconic by definition.

**Role of Space in American Sign Language.** Signers use the space to set referents being these people, things, or places. It is done in a three-dimensional manner using a 180-degree window. Syntactic information might be provided (direct or indirect object) as a result of this layout. Participants who are fluent in ASL were able to demonstrate broader knowledge regarding this question. Roxanne reported: “Space is very important. It changes meaning. You can sign in different spaces, and it means 3-4 different things, depending on where it is.” Sandra reported: “It’s important in case you are telling a story. It’s important for grammar as well. But if you are holding a baby, you can use your other hand. I would say it’s important, but not absolutely.”

Ricky responded space “is very important in general. So, it’s used for a variety of grammatical purposes.” For Carmen, “The role of space is very important. There’s role-shifting.” Salma reported space being extremely important by adding: “Laying things out, telling a story.

You set the setting and you put everything there... It's very difficult to sign simultaneously in a fully fluent way." Monica highlighted that everything in ASL uses the space by adding, "It provides verb direction, morphological and syntactic information, space description, visual perspective, and role shifting." For Virginia, space is very important and very difficult to teach to a child with late acquisition by adding:

My opinion is that nonnative late acquisition people struggle the most with spatial representation because it's not something that they could pick up from previous listening and spoken language instruction. There are children in fourth or fifth grade who struggle with space relationships, and that's not good for them because spatial relationships are so conceptually important and will clarify so much content if they're used properly.

Kendra informed of space serving grammatical function as people in space are physically shown as she added, "It provides a better picture of something than oral language does. Better to see directions and adding information compared to oral languages."

Andrea was not sure if the question regarding space was directed to users or ASL interpreters as interpreters "need space to move their arms." For Madison space "is very important. Depending on where you place yourself for place the sign, it can have a huge impact on the way things are interpreted. It provides the emphasis." Darcy interpreted use of space as the location where signs are produced by adding: "Your eyes, your mouth, your body... like your whole body is involved in sign language. You have to be very aware of the space around you. It's full body. A full body language." Karen explained: "Body space is very important. It can change the meaning. ASL is movement and motion based. ASL is a 3D language. If you are not aware of space, you get lost."

The role of space according to participants vary from having space to move while signing to the most important role of space: providing grammar information. Space in sign language helps understand how the environment is displayed, but also gives information regarding the grammatical role of items displayed in the space: from the speaker (subject) or to the speaker (recipient). It should also be noted that learning sign language later in life makes grammar acquisition harder for its users.

**Phonology of ASL: Handshape, Placement, and Palm Orientation.** Participants were inquired about handshape, placement, and palm orientation as these are core aspects of ASL phonology. The handshape needs to be well produced to make a sign right, but the place in which a sign is produced changes the meaning of the word, as well as the palm orientation of the hand. Participants who are fluent in ASL were able to provide answers reflecting the importance of these aspects.

Ricky identified these aspects as part of the phonological information and explained that children present with difficulty in at least one of these three parameters in the process of learning ASL, so therapy helps for producing the sign correctly. Ricky stated, “Phonological therapy is about teaching children how to perceive the difference between phonemes, as well as to produce them.” Carmen identified these aspects as absolutely important and added, “They are phonological-based.” Roxanne highlighted the importance of making sure to understand these concepts by saying, “You really have to make sure you understand hand placement and relational or spatial differences, and all those things, that you just said. All that changes meaning.” Monica reported working on these aspects, “Location and shape deal with phonological awareness in ASL.” Virginia expressed these aspects are very important while showing materials used in therapy as she added, “I have several IEPs this year with goals with ASL parameters so kids

would be able to identify parameters as part of their phonological awareness training.” Kendra indicated working in these parameters as “it’s part of phonology and it plays into grammar.”

Participants who use ASL in their practice are aware of the importance of these parameters.

Andrea reported these aspects not being important in her practice. Madison added being aware of these aspects but not incorporating them in her practice. Madison also stated being concerned with the children’s ability to make handshapes well. Darcy indicated not using these concepts in therapy while adding, “I kind of eliminate all gestures for AVT, so they’re just relying on their hearing alone.” Karen said not being too much concerned about these aspects as her clients use modified and simplified signs. Karen reported, “I do not focus too much on that specific part of signing.” Sandra affirmed, “Location is definitely important. Different handshapes can mean different things.” Salma reported these aspects not being important in her practice as signs are not utilized in therapy.

On the one hand, participants who use ASL in their practice are aware of handshape, placement, and palm orientation being important parameters regarding ASL phonology. On the other hand, participants who provide services through listening and spoken language present with no awareness regarding these parameters to accurately produce signs.

**Main Grammar Differences Between English and ASL.** Participants who self-identify as proficient in ASL were able to provide more accurate information regarding main grammar differences between English and ASL. Those whose knowledge of ASL is limited declared not having an answer to this question.

Early intervention specialists are aware of the main language differences. Ricky reported English and ASL having basically the same word order (subject + verb + object) while adding:

The biggest grammar difference is that English grammar has to be linear, like one word after another. Whereas in ASL, aspects of grammar can occur simultaneously through the use of space or signs that contain multiple morphemes that happen at the same time.

Carmen agreed by reporting they have “a completely different sentence structure.” Carmen stated that there are concepts that do not translate directly to English, as classifiers by saying, “There are so many markers and modifiers to sound to sign as opposed to like tones compared to words. In ASL there is so much you can say with your face and with your eyebrows.” These professionals target aspects as the hand as well as the face, which means focusing on aspects from phonology to morphology or syntax.

Home health participants appeared to have a basic knowledge of ASL. About differences, Andrea indicated, “I think verbs are pretty basic. They are not conjugated as we do for verb tenses. I don’t know. Maybe different plurals.” Madison added, “English is harder. ASL makes more sense. The way they structure some things. But they both have their own ways.” The differences described were very basic for these participants.

Responses from the hospital setting participants vary from one SLP to another. Darcy stated not knowing ASL well enough to be able to respond. Roxanne reported that word order is very different by adding, “Aspects as changes on body, shoulders, chest. Sometimes I have to use SEE per family’s request in order to help the kids to read and write.” Roxanne responded being aware of the grammar differences but has to accommodate ASL to English grammar knowing this task is a parent request.

Participants from clinics reported knowing basic aspects. Karen expressed that sentence structure is different “an example would be the way in which the adjectives describe the nouns

(word order) ... but there are many grammatical differences.” Sandra reported not knowing if you can really compare these two languages by saying:

ASL uses facial expressions, raisin your eyebrows, nodding ... all that conveys grammar and space. There are small words not used in ASL, but ASL being rich in having everything in the space. One of the biggest differences deals with the lack of articles in ASL.

Salma added that the lack of morphemes in ASL, but self-corrected immediately, “There are morphemes in ASL, but the way it handles tense changes is different” in order to highlight the differences in structure. Differences are described from a perspective that acknowledges rich language characteristics of ASL, while stating what is missing in ASL if compared to English.

School participants reported differences in structure being space and simultaneity the main characteristic to show differences between these languages. Monica informed, “ASL is made for visual modality as words do not have plurals, or there are no verbal conjugations.” For Virginia the biggest difference is managing the space by expressing, “There’s nothing like the concept of spatial grammar in spoken language.” Kendra reported:

ASL as more flexible in word order than English as its word order is strict. ASL is more visual and spatial. In ASL Information can be conveyed at the same time. ASL is not linear and paints a picture of what’s said. In ASL you can show what you mean.

When school participants are required to inform of language differences, the visual component of space and time in ASL is viewed as a bonus if compared to spoken language, which is viewed as linear.

Language differences are described by participants from the perspective of the language used in their practice. Those who work with spoken language tend to highlight characteristics

missing in ASL as plurals or past tense, without ignoring the unique characteristics of ASL.

Participants who use ASL in their practice provide details regarding the visual nature of ASL that enables its users to set an environment that describes where items are physically placed and how interactions takes place in the environment in order to provide grammatical information.

### **Summary of the Findings**

The participants of this study provided important information through their knowledge and experience regarding linguistic and cultural informed practices as well as barriers encountered when treating deaf and hard of hearing children ages 2 to 9. Participants have described the deaf and hard of hearing population under their care by informing of their scope of practice, the processes to evaluate and provide services for deaf and hard of hearing children while taking this population's unique cultural and linguistic characteristics, as well as their family environment.

Participants have described coursework during their preparation as students and how this knowledge and experiences have contributed to influence their current professional practice. Participants have also provided information regarding the language(s) used to provide services and how linguistic and cultural barriers have determined the way in which their practice take place at this time.

With regard to the primary research question of this study, the participants expressed their full agreement regarding that the parents seek services from speech language pathologist, mainly to help their children to produce spoken language. Having spoken language as the ultimate goal for the majority of the parents of deaf and hard of hearing children ages 2 to 9, SLP's knowledge and experience are important for critical aspects as deciding what language to use in therapy, and how to avoid language deprivation.



Most participants highlight the fact that upon hearing loss identification, parents are exclusively presented with the medical perspective of hearing loss. After referrals to otolaryngology and audiology, speech pathologists are the professionals who educate parents regarding communication options and school placement. However, speech pathologists are not educated regarding Deaf culture and/or ASL. Participants report this situation as challenging.

As far as linguistic barriers that SLPs encountered when assessing and treating the language of the deaf and hard of hearing children, the participants of this study indicated that their context of service greatly influence the language in which therapy takes place. The use of ASL for therapy has greatly been reduced to spaces as school, while the use of listening and spoken language is more prestigious and is mainly offered at hospitals or clinics. Moreover, there are clinics that specialize in providing services through listening and spoken language. Parents prefer the use of spoken language over ASL, and even if the progress is limited. Generally, it takes around a year for parents to attempt the use of ASL to increase language and communication skills. Most of the participants of this study were not aware of the existence of assessments that have ASL as the language in which testing tools are standardized in order to assess vocabulary, phonology, morphosyntax, and narrative skills.

Regarding cultural barriers, several of the participants expressed that parents seeking services for their children who are deaf and hard of hearing, are not aware of the existence of a Deaf culture. For these parents, being deaf means only having a diagnosis. What is even more surprising is that a lot of participants of this study have expressed not having been around people who are deaf or hard of hearing prior to treating this population. The participants' knowledge of deaf and hard of hearing people comes only from books that express a medical but not a cultural

vision of deafness. During the participants' professional preparation years, SLPs generally do not have a chance to "listen" to Deaf perspective regarding speech and language therapy services.

Finally, there are several components that inform speech and language therapy practices for the deaf and hard of hearing children. The participants of this study singled out several of such components as the scope of practice, the barriers to provide culturally and linguistically informed practices, and awareness of similarities and differences in language acquisition and structures in English, and ASL. Surprisingly, some participants stood out in their responses to expose the point of view of those who received speech and language therapy services during their childhood. This perspective contribute to our professional knowledge and experience and must leave an impression regarding the way speech and language therapy should be viewed and performed.

## **Chapter 5: Discussion of the Findings, Conclusions, and Recommendations**

The *Rehabilitation Act* (1973), the *Education for All Handicapped Children Act* (1975), and the *Americans with Disabilities Act* (ADA, 1990) provide the legal frame for services for deaf and hard of hearing individuals. Institutions as the National Deaf Association (NAD) support the use of ASL (NAD, 2022), and the United Nations General Assembly Resolution A/RES/72/161 recognizes the 23 of September as the International Day of Sign Languages (UN, 2017). However, the most accessible language for deaf and hard of hearing individuals in the United States, American Sign Language (ASL) continues to be left out of the equation for rehabilitation services (Hecht, 2020).

### **Revisiting the Study: Discussion of the Findings**

The purpose of this study was to assess the speech-language pathologists' knowledge and experiences in regard to the linguistic and cultural processes of the deaf and hard of hearing when assessing and treating deaf and hard of hearing children ages 2 to 9. The focus of the experiences is on what are the linguistic barriers, if any, SLPs encounter when assessing and treating the language skills of the deaf and hard of hearing children ages 2 to 9.

The responses and experiences of each participant have been useful to provide context, information, and data regarding the questions of the of the study and understand the reasoning behind their professional practice with deaf and hard of hearing children ages 2 to 9. The participants have been implementing therapy throughout the years in order to serve this population. In order to better understand these experiences their responses were analyzed under the lens of two theories: the sociocultural theory and the concept of language deprivation. The sociocultural theory recognizes the importance of a linguistic community in order to develop language skills. The concept of language deprivation highlights the fact that a language cannot be

acquired without having full access to it and a community where to learn this language from. For this reason, the Deaf community does not consider itself as a handicapped, but as users of another language (Gannon, 2012; Shaw & Delaporte, 2015).

With regard to the first research question that focused on the speech-language pathologists' knowledge and experiences related to the culture and linguistic processes of the Deaf culture when assessing and treating deaf and hard of hearing children ages 2 to 9, the participants reported working with all types and levels of hearing loss at five different working setting. Hearing loss included conductive, sensorineural, and mixed types. Degrees of hearing loss fluctuated from mild to profound, as well as unilateral or bilateral. The caseload included children being furnished with hearing aids and/or cochlear implants. These professionals serve children having in mind parents' goals. It should be mentioned that the parent goal for all the participants of the study always includes to make children talk (Glickman & Hall, 2019; Glickman et al., 2020; Hall et al., 2017).

Participants working on early intervention made clear to parents that language exposure is not the same as language access (Hall & De Anda, 2021). For this reason, participants encourage the use of sign language at home and in the community, as a way to learn spoken language (Anderson et al., 2016; Glickman & Hall, 2019; Gullati, 2014). Professionals from home health focused on using listening and spoken language as the main mode of communication, with the close supervision of a listening and spoken language specialist. Therapy services in the home prioritize articulation skills while language skills are targeted at the school environment, as ASL is recognized for educational activities exclusively (Rosen, 2022).

Participants in the hospital would strongly support the medical vision of using listening and spoken language to target language development. It should be highlighted that in a recent

survey (Ozelie et al., 2022) the use of American Sign Language and interpreters was considered the second most unreasonable accommodation among students in the clinical settings. After all, hospitals have otolaryngologists, audiologists, and speech pathologist “in house” while those who are certified as “Auditory Verbal Therapists” are considered the most knowledgeable professionals to work with deaf and hard of hearing children, regardless of how widely results vary from one child to another (Hecht, 2020; Kelley & McCann, 2021). Once listening and spoken language skills hit plateau, the use of ASL is required. Then, patient is referred out to a speech-language pathologist who is fluent in ASL, even though only 618 SLPs in the nation self-identify as fluent (ASHA, 2021) in ASL.

Participants from clinics who specialize in offering listening and spoken language discourage the use of visual cues as it is part of their certification guidelines (AGBell, 2007). For these professionals, access to sound means access to language. Participants from schools encourage the use of ASL as well as being part of the Deaf culture (Rosen, 2022). A strong foundation in ASL along with opportunities to interact within the Deaf community give these participants a more in-depth knowledge of the language and Deaf culture (Hecht, 2020).

### ***Culturally and Linguistically Informed Practices***

Being culturally informed for SLPs deals with being in contact with the Deaf culture, its language, and its values (Padden & Humphries, 2005). For participants who use ASL in therapy, children are viewed as future members of the Deaf community. It means to pay attention to the experiences Deaf adults have had while they were enrolled in therapy as children. Also being able to use sign language while being around Deaf people while “voice off” is enforced. For participants who are part of the Deaf culture, it is hard to imagine serving Deaf people without

being able to communicate with most of the members of the community, which means using ASL (Padden & Humphries, 2005).

Being culturally informed also means not considering Deaf people as individuals with deficits, but individuals who communicate through another language (Roberts, 2021). The idea of being humans with deficits is far from what Deaf people consider themselves. Deaf people are positive of being able to do anything except for hearing. This is the message that SLPs who are culturally aware want to transmit to the parents of deaf and hard of hearing children, that children need to be given an opportunity to develop like any other child.

For SLPs, being linguistically informed means to self-educate regarding language concepts, and also to be able to educate parents regarding this issue. Self-educating regarding language means to seek opportunities to learn about language development in general as well as general language milestones and language development in ASL. It also means to be aware of how typical and atypical ASL development looks as well as spoken language. SLPs need to know that there are language assessments that have been created for ASL-users having ASL as the language for testing with standardized measures. There are tests that will allow SLPs document children's progress throughout the provision of therapy services.

Regarding working with parents, being linguistically informed means not to push families to pick one language over another but presenting the options available for parents to make up their mind regarding language to be used in therapy. It also means to let parents know that sign language is not a universal language as each country has its own (or more than one) sign language (Padden & Humphries, 2005). Parents should be informed about communication options through the use of signs, which include ASL, Signed English, and Signed Exact English. It is important to inform parents that only ASL constitutes a language, and the others are only

communication options. Participants in the study also highlight the importance of recognizing and validating attempts to communicate regardless of the means, especially with clients who are considered Deaf Plus (Singer et al., 2020), which means presenting with another disability besides a hearing loss.

It is important to inform families about the concepts of language access, language immersion, and effortless language acquisition. Families need to be aware of the dangers of language deprivation, which should be avoided at all costs (Glickman & Hall, 2019; Gullati, 2014). It is necessary to highlight the fact that children can be bilingual. That children can learn to use ASL as well as spoken language (Rowley et al., 2022).

### ***Professional Preparedness***

The participants of this study give a different level of importance to the classes taken during their professional preparation years. For professionals working with listening and spoken language, Audiology seems to be the most important class. Along with Audiology, classes such as Acoustics, hearing technology, and those that focus on the audiological management of patients. This makes evident that for participants working on listening and spoken language, the most important aspects of the profession are viewed under medical model perspective, which echoes with what Martin (1997) mentioned in their study.

For ASL-user participants, audiological information (audiometry) appear to be less important than it is for those who focus on listening and spoken language, as clients start therapy after years of language deprivation. The focus for these professionals is on language milestones through the use of the most accessible language: ASL. Therefore, spoken language is not targeted. “Language over speech,” seems to be the motto of these participants. This is also related to the fact that ASL classes are part of professional coursework only as an elective class,

if offered. Never as a core class, especially in programs with a specific auditory therapy track where some basic classes of ASL are offered, but as electives.

Participants reported that classes about language development and child language disorders have been useful as it was noted that language appears to follow a development path regardless of modality, spoken or signed. However, participants declared previously willing to have a class that explored the diagnosis of hearing loss as a separate class from different angles: Deaf culture, experiences of deaf adults while enrolled in speech and language therapy as children, and a class dedicated exclusively to the effects of language deprivation (Gullati, 2019). All participants reported that they felt insufficiently prepared regarding hands-on therapy techniques while enrolled in a Communication Disorder graduate program (Veyvoda et al., 2019).

### ***Assessment and Treatment Practices***

Most of the participants reported feeling prepared to use tests to assess children's language skills. However, bilingual English-ASL professionals reported not feeling prepared secondary to ASL not being their first language. These participants reported evaluations would be better if provided by an ASL native user, which demonstrates language and cultural awareness. Participants who use English or another spoken language to provide evaluations considered themselves as prepared. A few participants consider themselves capable of providing testing secondary to having an SLP license, but being aware of the many aspects their professional preparation might be missing. This also demonstrates being humble (Moroz et al., 2017) when assessing deaf and hard of hearing children for therapy services.

Tests utilized to assess deaf and hard of hearing children are mostly adapted from tests created for normal-hearing children. Some of the tests were standardized with a sample of deaf



and hard of hearing children. Listening and spoken language participants reported not adapting tests created for normal-hearing children when testing the language skills of deaf and hard of hearing children. Many participants reported feeling comfortable providing tests that require parent interview as not knowing signs make difficult to provide an evaluation that requires child participation to assess language strengths and weaknesses. Participants from home health services do not feel competent, and they would let the listening and spoken language certified professional guide and inform their evaluation in order to establish therapy goals. Listening and spoken language professionals would not adapt tests created for normal-hearing children to test the language skills of deaf and hard of hearing children. Very few participants were aware of the existence of evaluations created to assess ASL skills being these tests standardized for the deaf and hard of hearing population throughout different ages as noted by Quinto-Pozos et al. (2017).

### ***Therapy Language***

Most participants do not evaluate or provide therapy through ASL. Participants who promote the use of spoken language, might be able to use a few gestures or consider valid the use of these at a very basic level. However, participants who consider themselves as bilingual English-ASL provide therapy through ASL, especially for children who have experienced language deprivation. Spoken language is a goal if children get benefits from this approach.

Participants who provide speech and language therapy through the use of spoken language, reported to review children's progress every six months. Once a child does not present with progress through spoken language, then participants start referring children to therapy using sign language or another approach that includes visual cues. This means, the professional should refer children out as this is out of their scope of practice; however, often times participants will continue to provide listening and spoken language upon parent request, even when the child

receives little to not benefit, as therapy should revolve around parent goals, which means spoken language (Hecht, 2020).

There is an extended conception that assumes that learning ASL would impede learning spoken language (Baker et al., 2016; Shaw & Delaporte, 2015). This idea assumes that the visual cortex “conquers” the auditory cortex, making impossible to learn spoken language at the same time ASL is learned. This contradicts the idea that the brain should be “wired” with language regardless of its modality as the same areas are used in the brain for language regardless of it being spoken or signed (Banaszkiewicz et al., 2021; Blanco-Elorrieta et al., 2018; Cheng et al., 2020; Newman et al., 2015). Another well extended myth is related to learning ASL can happen at any age. These participants appear to ignore the effects of language deprivation as well as the difficulties faced when presenting a nonfluid first language as indicated by Hill (2019).

It appears some participants are not aware of how similar language acquisition by sight and hearing is (Sandler & Lillo-Martin, 2006). However, there is a condition that should be fulfilled: access to language. Being exposed to listening and spoken language at an early age, and using powerful hearing aids, are not enough to consider listening and spoken language as accessible (Hall & De Anda, 2021). Young children are not able to express if they are having access to all the sounds in the speech range. Not all hearing devices work in an efficient manner or are well calibrated; however, language acquisition through ASL is always effective. And even if not effective, it does not produce any harm, as exclusively auditory language exposure does (Hall, 2017).

### ***Language Commonalities and Differences***

Regarding the main differences between ASL and English, it was evident that participants were aware of sign language being its own language with its own rules. An aspect that

participants were aware is the fact that English is a linear language, while ASL is a three-dimensional language that can express many concepts at the same time due to its visuo-manual nature (Bradley et al., 2022). Monolingual participants were aware of many, but not all of the aspects presented on the questions of the interview. The lack of correspondence between ASL signs and English words is a well-known concept by all of the participants of the study. The role of fingerspelling is understood by monolingual participants only as a way to loan words from spoken language to ASL, just like any spoken language loan words from another. However, the role of fingerspelling goes beyond naming (Miller et al., 2021). Some participants are confused regarding fingerspelling as a way to put “in writing” words produced with English grammar. Fingerspelling has been considered as leading to more literacy success as signs that include fingerspelling (Miller et al., 2021) also improve reading and orthographic skills.

The concept of iconicity in sign language seems to be a topic where the participants do not always agree. Even though most signs are not iconic, but symbolic, the number of iconic signs is not easy to know or discover by participants. It varies in this study from 20% to 75%. This number also varies in different sign languages around the world (Taub, 2001). The issues regarding iconicity are under debate at this time.

Aspects that are crucial for ASL phonology as handshape, placement, and palm orientation are not well known by monolingual participants; therefore, these aspects are not included in their practice. Bilingual professionals are aware of the importance of these aspects in order to produce signs (Gil & Collins, 2022). Many of bilingual professionals reported working on these aspects on regular basis to increase phonological awareness among children who sign. Regarding the importance of space in ASL, it should be mentioned that responses vary from “needing space to be able to make the signs in the air” to its role in ASL grammar, for example,

to differentiate subject and object in a sentence (Napoli & Ferrara, 2021). Morphology and syntax differences were also mentioned by bilingual SLPs in a more efficient manner than monolingual participants when questioned about the role of space in ASL (Valli & Lucas, 2000).

Awareness of language commonalities and differences is a first step to understand that therapy can take place in more than one language, in order to provide children with an accessible language (Hall & De Anda, 2022). Access to a language allow kids to understand the world around and to express their thoughts and feelings through their own. The use of the most accessible language for deaf and hard of hearing children is ASL and it should be included as the language in which therapy is provided.

### ***Relevance of the Findings to Theoretical Framework***

Throughout the study it was evident that most of the barriers speech-language pathologists face to provide services for deaf and hard of hearing children are due to the lack of culturally and linguistic informed practices, as well as limited awareness of similarities and differences in language acquisitions and structures in English and ASL. One of these barriers include memory as the concept formation that highly depends on language, which is what Vygotsky claims in his studies (Ehrich & O'Donovan, 2019). The hallmark of Vygotsky's theory is the importance of socio-cultural contexts in which education takes place and, by extension, language acquisition occurs. This study confirms that children need to have language access through a community of sign language user, as a visual modality is the most accessible and effortless way to acquire a language. It is important for Deaf and hard of hearing children to acquire a strong first language (signed) in order to learn listening and spoken language. In other words, the importance of being part of a linguist community in order to develop language and cognitive skills can be hardly overestimated.

The findings of this study support what Glickman and Hall (2019) called “language deprivation” that negatively impacts the lives of deaf and hard of hearing individuals throughout their lives. While language exposure through hearing is considered the norm, language exposure through visual input is still left outside of the equation for deaf and hard of hearing children (Glickman & Hall, 2019; Glickman et al., 2020). The participants of this study confirmed just that when referring to their professional practice. Regardless of the modality (signed or oral) language acquisition at an early age should be the norm. Speech-language pathologists need to educate themselves and parents regarding the importance of an accessible language in order to develop listening and spoken language.

### **Implications for Practice**

The findings of this study have several implications for the way in which speech and language therapy services are provided for the deaf and hard of hearing children ages 2 to 9. One of the most important aspects of this study is making evident is how the medical vision of the speech-language pathology profession continues to inform speech-language pathology practices (Cripps et al., 2016; Hernández & Hadley, 2020) from assessment to therapy without taking into consideration aspects as language acquisition, commonalities between spoken and signed languages, and the possibility to develop bilingual skills without neglecting the most naturally accessible language. The purpose should be to avoid language deprivation (Gullati, 2014) and to increase communication skills (Hecht, 2020).

Programs where future speech and language professionals graduate should include classes that focus on the language of the deaf and hard of hearing, as well as their culture because currently programs are highly focused on spoken language (Cripps et al., 2016). Learning about types and/or degrees of hearing loss provides small information regarding the

impact of language deprivation in the communication skills of a child, that a speech language pathologist needs to assess and treat in order to help a child communicate.

Experiences from the deaf and hard of hearing community should also be taken into consideration. The use of ASL has been taken out of the clinical environments and has been only placed on the educational needs (Rosen, 2022), but there are certainly needs regarding disorders in users of sign language (Quinto-Pozos et al., 2017). Speech-language pathologists should be in charge of identifying how typical or nontypical sign language acquisition is taking place (Visser et al., 2017), the order in which sentences take place (Hall et al., 2017), word retrieval regarding categories (Marshall et al., 2018), and/or issues related to literacy (Cammarata-Scalisi et al., 2020; Muncy et al., 2019).

Members of the American Speech-Language-Hearing Association (ASHA) have developed tireless efforts to increase awareness of speech, language, and hearing problems. Communication is one of the core values of our professional association. All these aspects should be mentioned to parents who seek for services for their deaf and hard of hearing children. Therefore, educating parents regarding communication above listening and spoken language turns crucial in order to provide language input for deaf children in order to eliminate language deprivation.

### **Recommendations for Future Research**

This study can be further developed in several directions. For instance, it can evolve into a mixed-methods research study that explores the impact of early exposure to ASL in children who acquire spoken language as a second language. Additionally, a series of studies can be developed in first and second language, to determine learning ASL can positively impact

learning English. This would decrease language deprivation and would eliminate the myths of language being processed in a different manner secondary to its modality (spoken or signed).

### **Concluding Thoughts**

As a speech-language pathologist providing therapy services through ASL, it is my hope that more SLPs will educate themselves and parents regarding the multiple benefits of learning this language. It does not only fulfill the human right of communication, but it also opens doors to have more SLPs who are native users of ASL. This is, I believe, the only manner in which speech language pathologists can pave the way of ASL to be considered as part of the languages offered for speech and language therapy. Native language users providing services should be the norm in the speech and language therapy field.

In this qualitative study, I intended to describe the barriers SLPs face to providing services to the deaf and hard of hearing children ages 2 to 9. I collected the information regarding these barriers through interviews taking into consideration the settings where this population receive services. Regardless of the setting, the ultimate goals for SLPs, is to make sure that deaf and hard of hearing individuals can communicate. These efforts produce better outcomes at early ages. For this reason, I analyzed the practices that take place for language assessment and treatment in this young population, and if SLPs feel competent when providing services for these clients and their families.

Through rich and data collected from SLPs' experiences and knowledge, I intended to respond to the need to consider the deaf and hard of hearing population outside from the medical model that refers to this population as incomplete, suffering from a loss, and full of deficits. The perspectives of the SLPs who work with this population was exposed in order to analyze commonalities and differences, as well as the evolution of these perspectives through time. By

knowing SLPs' struggles as professionals, many barriers can be destroyed in order to provide the best professional services. This study connects with research regarding professional preparedness and is intended to be a contribution to assess strengths and weaknesses in the areas of culturally and linguistically responsive practices.

Throughout our professional preparation, speech language pathologists are conditioned to have a medical vision of hearing loss. I encourage my colleagues to develop a sociocultural vision and to look beyond the diagnosis. When parents seek guidance, let us not be the "permanent grief" individual who perpetuates social, emotional, and cognitive delays. A person with a hearing loss is not a broken person; however, a person without access to one, is. Let us promote the most accessible language available: sign language. Only strong skills in sign language can build strong spoken language skills. Let us not deny the possibility of having strong and meaningful relationships and lives to those who need their language rights to be respected. Let us stop promoting the use of signs among hearing children due to its multiple benefits, while we deny this possibility to those who need it the most. Hearing technology is a great tool that helps our children to find more than one way to communicate. We have the biggest gift of all in our hands: language.



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## Appendix A: Consent Form

Dear prospective participant,

My name is Irene Garcia-Benavides. I am a doctoral student at Abilene Christian University. I am conducting a research study *Speech-Language Pathologists' Barriers to Providing Services to the Deaf and Hard of Hearing Children Ages Two to Nine*, as part of the requirement toward my doctoral degree completion.

The purpose of this qualitative study is to investigate ways in which SLPs approach their practice of providing services to the deaf and hard of hearing children ages two to nine and the barriers they encounter along the path. This study seeks to uncover the knowledge, perceptions, and experiences of SLPs related to the cultural and linguistic processes of the Deaf culture when assessing and treating deaf and hard of hearing children between 2 and 9 years of age in different occupational settings. The occupational settings of this study will include five different settings: early intervention, home health, schools, outpatient clinics, and hospitals. Cultural and linguistic processes of the deaf include, but are limited to, the importance given to sign language as the natural language of the Deaf and having access to it is considered a human right (De Meulder et al., 2019).

The primary research question that guided this study was, "What are the SLPs' knowledge and experiences related to the culture and linguistic processes of the deaf culture when assessing and treating deaf and hard of hearing children ages two to nine?"

Additionally, I posed the following research questions:

- What are the linguistic barriers, if any, that SLPs encounter when assessing and treating the language skills of the deaf and hard of hearing children ages two to nine?
- How do SLPs' knowledge and experiences of the culture and linguistic process of the Deaf culture inform Speech and Language Therapy practices for the deaf and hard of hearing children ages two to nine?

I would like to invite you to participate in this project. Your participation in this study is strictly voluntary and you can withdraw from it at any time with no penalty to you. The study does not have any known or potential risks. You are invited to participate in an individual semi-structured interview that may last approximately 90 minutes. You will be asked to respond to a series of questions pertaining to your professional practice. The interview will be audio-and/or video-recorded (pending your consent) and transcribed verbatim. Interview transcript will be sent to you for verification of accuracy.

For confidentiality purposes, the interview transcript and all files pertaining your participation in this study will be kept in a secure server, which will be password protected. Only the principal researcher (me) of the study will know your actual name, as a pseudonym will be assigned to you in order to keep all the information fully confidential.

If you have questions about the study, you can contact me at (xxx) xxx-xxxx or via email: xxxx@acu.edu. You can also contact my instructor Dr. Antonina Lukenchuk at: xxxxxxxx@nl.edu or at (xxx) xxx-xxxx. More general questions regarding rights of subjects in research or to

confirm the accuracy of this study you can contact the ACU's Chair of the Institutional Review Board (IRB) and Executive Director of Research, Megan Roth, Ph.D. You can contact Dr. Roth at 320 Hardin Administration Building, ACU Box 29103 Abilene, Tx 79699, or you could reach her by phone at (xxx) xxx-xxxx or by email: xxxxx@acu.edu.

You will be tendered a copy of your signed consent form. Please, acknowledge with your signatures below your consent to participate in this study.

Thank you,

Irene García-Benavides

\_\_\_\_\_  
Participant's Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Researcher's Signature

\_\_\_\_\_  
Date



## Appendix B: Survey for SLPs

Please respond to the following questions:

1. How many years of experience do you have as an SLP?
2. How many years have you worked as an SLP prior to serve this population?
3. How many years have you been in this position?
4. Are you a treating therapist or a supervisor?
5. Do you provide services to children ages 2 through 5?
6. What is the number of patients/students on your caseload?
7. What are the primarily responsibilities of your position?
8. Are you responsible for providing assessments and treatments for children ages 2 through 9?
9. What language do you use for providing services for the deaf and hard of hearing children ages two to nine?
10. What is your level of sign language proficiency?
  - Alphabet and individual words
  - Sentences
  - Fluent

Please respond to your willingness to participate in this study.

## **Appendix C: Interview Guide**

### **Working with Deaf and Hard Hearing Children**

1. What is the type and degree of hearing loss of most of your clients?
2. Regarding your deaf and hard of hearing clients, what is the hearing status of their parents?
3. What is your language preference for therapy according to the type and/or degree of hearing loss of your clients? How important are the results of the audiometry to select the language to assess and/or provide treatment?
4. What are the most common family goals for D/deaf and hard of hearing children?

### **Culturally and Linguistically Informed Practices**

5. What does it mean to you to be culturally informed when you work with d/Deaf and hard hearing children?
6. What does it mean to you to be linguistically informed when working with deaf and hard hearing children?
7. What language(s) do you use for assessing language skills for the initial speech and language evaluation?
8. Have you ever taken an ASL class?
9. What has been the most useful class you took during your student years in a Communication Sciences and Disorder program for treating your d/Deaf and hard of hearing clients?
10. What class would you have liked to take during the program?

### **Assessment and Treatment Practices**

11. Based on your professional experience, do you think you are adequately prepared to use tests that are made for Deaf children in order to assess language skills?
12. What are the tests for typical-hearing children that you have adapted to test language skills for your D/deaf and hard of hearing clients?
13. During evaluations and treatments, do you incorporate any signing? What is the main (mean) length utterance you use in ASL?
14. How long does it take you to use listening and spoken language if a child does not present with progress before you start using ASL for treatment?
15. How is language acquisition different between English and ASL?
16. Is there a one-to-one correspondence between ASL signs and English words?

### **Contrasting Languages**

17. How important is fingerspelling for ASL?
18. Are most signs iconic? What do you think is the percentage of iconic signs?
19. Based on your experience, what is the role of the space in ASL?
20. In your practice, are these aspects important in signing: handshape, placement, and palm orientation?
21. In your practice, how do you employ sequencing through signing?
22. What do you consider the main grammar differences between English and ASL?

## Appendix D: IRB Approval

### ABILENE CHRISTIAN UNIVERSITY

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320 Hardin Administration Building, ACU Box 29103, Abilene, Texas 79699-9103  
325-674-2885



July 30, 2021

Irene Garcia-Benavides  
Department of Educational Leadership  
Abilene Christian University

Dear Irene,

On behalf of the Institutional Review Board, I am pleased to inform you that your project titled "Speech-Language Pathologists Barriers' to Providing Services to the d/Deaf and Hard of Hearing Children Ages Two to Five",

(IRB# 21-080 ) is exempt from review under Federal Policy for the Protection of Human Subjects.

If at any time the details of this project change, please resubmit to the IRB so the committee can determine whether or not the exempt status is still applicable.

I wish you well with your work.

Sincerely,

*Megan Roth*

Megan Roth, Ph.D.  
Director of Research and Sponsored Programs