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Saudi Parents’ Needs in Deaf Education in the Kingdom of Saudi Arabia

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SAUDI PARENTS' NEEDS IN DEAF EDUCATION IN THE KINGDOM OF SAUDI ARABIA

A Dissertation Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Philosophy

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College of Education and Behavioral Sciences
School of Special Education

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has been approved as meeting the requirement for the Degree of Doctor of Philosophy in College of Education and Behavioral Sciences, School of Special Education

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ABSTRACT

Alqahtani, Abdulaziz. *Saudi Parents' Needs in Deaf Education in the Kingdom of Saudi Arabia*. Published Doctor of Philosophy dissertation, University of Northern Colorado, 2017.

This dissertation was conducted in the Kingdom of Saudi Arabia (KSA) to investigate the needs and perceptions of parents of children who are deaf or hard of hearing (DHH) in regard to the support and services provided in Saudi Arabia. Fifty-eight parents of children who are DHH were surveyed. Participants were asked to complete the survey considering the support and services provided to their children who are DHH in KSA. The survey questions were related to parent perception in five areas of services: early identification services, hearing technology services, communication services, educational services, and social support services. In the course of the investigation, five main research questions guided the study:

Q1 What types of services are being received and would like to receive by Saudi parents of children who are deaf or hard of hearing (DHH) in Kingdom of Saudi Arabia?

Q2 How satisfied are the Saudi parents of children who are DHH regarding the services received?

Q3 What are the most needed services perceived by parents with children who are DHH in the Kingdom of Saudi Arabia?

Q4 Is there any relationship between the child's characteristics and parents' level of satisfaction in the Kingdom of Saudi Arabia?

Q5 Is there any relationship between the child's characteristics and the importance of services to parents in the Kingdom of Saudi Arabia?

The results indicated that all types of services are available and being received by some Saudi parents of children who are DHH in KSA. The results also demonstrated that parents showed an average level of satisfaction towards services and support regarding the services received for their children who are DHH. The majority of parents recognized all aspects of services listed as the most needed services for children who are DHH and their parents in KSA. The results also indicated that children's gender and hearing status were not significantly related with parents' satisfaction and the importance of services to parents in the KSA. Additionally, parents in the open-ended question section expressed some problems and offered some solutions in order to improve the services and support for children who are DHH. Conclusions of this dissertation study are that more research regarding the support and services provided for children who are DHH in KSA is needed in order to obtain a better understanding of parents' needs and perceptions. Finally, the survey designed for this study needs further development because it does not include all aspects of services and support for parents and children who are DHH.

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INTRODUCTION

Parents play an important role in children's growth and development. Previous studies have demonstrated the significant role that parents have in facilitating communication (Hadjikakou & Nikoklaraizi, 2008; Mitchell & Karchmer, 2004a), interaction (Berke, 2013; Cramer-Wolrath, 2011), and language development (Bailes, Erting, Erting, & Thumann-Preziosco, 2009; Holt & Svirsky, 2008; Niparko et al., 2010) in children who are deaf or hard of hearing (DHH). Therefore, parents are considered as the most important factor in the development of children who are DHH (Geers, Tobey, Moog, & Brenner, 2008; Moeller, 2000).

Parents' perceptions regarding the services and programs for their children who are DHH are of primary importance within the field of deaf education due to the critical role they play in their child's development and in the service provision process (Levesque, Brown, & Wigglesworth, 2014; Sarant & Garrard, 2013). For example, attributes of parents, such as parental involvement in deaf education intervention and quality of services, might be critical factors in determining the effectiveness of services and programs (Yoshinaga-Itano, 2004). Furthermore, parental perceptions are an important outcome issue and one way of evaluating the quality of services (Haines & Childs, 2005). Therefore, parental input about services and programs is necessary (Joint Committee on Infant Hearing, 2000). It allows professionals in deaf education to better understand parents' needs for services and to ensure that service delivery with children who are DHH and their parents is effective. Therefore, it is recommended that professionals need to learn about the parents they serve (Rodriguez & Olswang, 2003; Salas-Provance, Erickson, & Reed, 2002).

Historically, laws in special education in the United States of America, for example, provide parents with children who have special needs, including children who are DHH, the opportunity to express their ideas with professionals regarding what they consider to be the most appropriate education for their children who are DHH (Individuals with Disabilities Education Improvement Act [IDEIA], 2004). Not surprisingly, parental support of a child's needs and education is a critical factor in a child's success (Albritton, Klotz, & Roberson, 2003; Epstein, 2005). Their view is vital to successful programs and placement for their children (Lindsay & Dockrell, 2004). In addition, what parents think about their experience in special education, including deaf education, and what parents want for their child are important historical components of special education law (Yell, 2012). Therefore, assessing the perceptions of parents will provide a more appropriate and accurate understanding of parents' desires and needs (IDEIA, 2004). This information can be useful for professionals in making improvements to existing services or developing and expanding the services they offer.

In deaf education, the parents' perceptions and how they embrace the issue of deafness from the onset are the most important factors that facilitate their deaf children's needs in the areas of communication and language acquisition (Dunst, Trivette, & Hamby, 2008; Powell & Dunlap, 2010). Furthermore, 95% of deaf children in the United Sates are raised by hearing parents (Mayberry, 2010) whose children are born with hearing loss prior to the age of 3 years old. It is during these early years that children most easily acquire language (Eleweke & Rodda, 2000). Often, not understanding the potential impact of a hearing loss on development and the lack of support services make it difficult for parents to meet their children's communication needs (Meadow-Orlans, Mertens, & Sass-Lehrer 2003).

An interesting, though sad scenario is that the majority of hearing parents are misguided by professionals (i.e., audiologists or speech language pathologists) who suggest aural/oral habilitation is the only way to stem the tide of hearing loss (Hyde, Punch, & Komesaroff, 2010). These professionals often incorrectly inform the naive parents that using sign language with their children causes delays in their child's language development (Hyde et al., 2010). For example, Hyde et al. investigated the experience and perspective of parents of deaf children related to the decision making about getting cochlear implantation for their deaf children. The results showed that parents believed that cochlear implantation and hearing and speech training were valuable for their children. However, the parents of the children who were DHH in this study erroneously thought that there was no alternative for their children in their quest for enhanced language development, and, as a result, they were adverse to the use of sign language. Furthermore, parents indicated that they felt it was difficult to find comprehensive information to guide their decision-making processes about cochlear implantation for their children, despite the fact that there has been ample information disseminated by medical and audiological personnel on the issue.

Moreover, the lack of this information impacts the interaction between children who are DHH and their parents at home. Quittner et al. (2010) reported that language delays and child behavior problems for parents of children who are DHH are associated with increased parenting stress. To compound the situation, most of these parents spend months or years visiting professionals without satisfactory results. Often, the impact of all of this is that children who are DHH are not able to develop language and communication skills to their fullest potential (Lane, Hoffmeister, & Bahan, 1996).

Going further, interestingly at home, most parents try their best to communicate with their children who are DHH by continuing to communicate through spoken language (Bailes et al., 2009). However, they are unsure of how to alter their communication with their children who are DHH and do not know the benefits of sign language. Based on this unwarranted situation, children who are DHH try to lip-read whatever their parents and significant others say or act out without understanding the meaning of these words and actions. The results have demonstrated that when children who are DHH arrive at school, they are not ready for academic activities due to the limitations of developing age-appropriate language skills early in life (Erting, 2003; Liddell & Johnson, 1989; Kuntze, 1998).

In this regard, parents of children who are DHH are left with the most demanding challenges that require them to make decisions regarding the type of therapies that are appropriate for their children, and on the other hand, they lack the criteria to implement and determine the effectiveness of the therapies. This challenge might be more problematic, especially in the absence of a well-established consensus regarding appropriate educational practices (Dunlap, Iovannone, & Kincaid, 2008).

To fulfill this responsibility, it was important to understand and document parent needs, perceptions, and satisfaction regarding the services and programs for their children who are DHH (MacNeil, Liu, Stone, & Farrell, 2007). Considering parents' perceptions and needs helped to better understand the needs and support required to give Saudi children who are DHH the best start in life.

Disability and Parents' Culture in Saudi Arabia

Awareness and understanding of the society and culture where people who have special needs live is the key to the successful development of their needs and services. In Saudi Arabia, families' culture is mixed between Islamic culture and Arabic culture. Both cultures strongly recognize special needs people's rights, including people who are DHH. For example, Islamic culture, in which all Saudi people and society believe, has called for protecting the rights of individuals with disabilities for more than 14 centuries (Fahmy, 1998). This is demonstrated in the Holy Quran when Allah blamed his prophet, Muhammad, regarding the prophet's method of dealing with a blind person. According to the Holy Quran that was interpreted at King Fahd Complex for the Printing of the Holy Quran:

> He [The Prophet] frowned and turned away when the blind man approached him! Yet for all you knew, [O Muhammad], he might perhaps have grown in purity or have been reminded [of the Truth], and helped by this reminder. Now as for him who believes himself to be self-sufficient--to him you gave your whole attention, although you are not accountable for his failure to attain to purity. But as for him who came unto you full of eagerness and in awe [of God], him did you disregard. Nay, verily, this is but a reminder and so, whoever is willing may remember Him in the light of His revelations blest with dignity, lofty and pure, borne by the hands of messengers, noble and most virtuous. (Verse 1-16, Surah 80).

Therefore, it is clear that the rights of individuals with special needs is a fundamental part of Islamic culture. Individuals with special needs are human beings first who have rights to enjoy as well as duties to perform, just as any other member of the community (Al-Musa, 2010).

Saudi culture has taken a big step forward to recognize the rights of individuals with disabilities. In 2008, the Saudi government signed the United Nations Convention on the Rights of Persons with Disabilities (Convention on the Rights of Persons with Disabilities, 2008). Furthermore, the disability code policy in Saudi Arabia (2014) defines an individual with a disability as one who is partially or totally disabled with respect to her/his bodily, mental, communicative, material, psychological or academic capabilities, to the extent that it compromises the ability of that individual to meet her/his needs as equally as a non-disabled person (King Salman Centre of Disability Research, 2014). This code policy states that individuals with disability have equal rights as any other citizens in social, medical, educational, and professional services to enable them to achieve their maximum potential as well as to develop their capabilities to attain independence and be productive members of society.

Although the rights of special needs people, including DHH, are recognized, this does not mean, however, that they obtain their full rights. For example, the lack of disability rights is still evident in Saudi Arabia as in all countries worldwide. This is not due to negative attitudes toward disability, but is due to a lack of basic knowledge among the population in working with special needs people, including deaf people (Alomary, 2014; Gertz & Boudreault, 2016). A recent study investigated social-emotional perceptions among people who are DHH in Saudi Arabia and demonstrated that they have a positive attitude toward their society, their ability to socialize, and their well-being (Al-Shammari et al, 2014). This evidence indicates that people who are DHH and live in Saudi Arabia feel welcome by their society and family where they live.

Many Saudi families have extended families that get together frequently. Saudi families care for, pay attention to, and support a special needs person just as they do for any other member of their family. According to Alqahtani's (2015) study, parents are willing to support their deaf child when they can. This was found when some of the parents traveled outside the country in order to take some training in communicating with their children who are DHH. In addition, others established their own center for special needs children and their parents (Alqahtani, 2015).

Although Saudi families care for and support their child who is DHH, this does not mean all children who are DHH obtain their full rights from their family. For example, some children who are DHH do not obtain enough support from their parents, and this still occurs because some of them are uneducated (Alqahtani, 2015). In sum, the cultures of Saudi families do strongly recognize special needs people's rights, including people who are DHH.

Parents Who are Hearing of Children Who are Deaf and Hard of Hearing in Saudi Arabia

In Saudi Arabia, no specific statistics are available to document the total number of children who are DHH. The only statistics number is for children who are being educated in schools. In 2008, for example, the total number of students who were DHH in schools was 4,511 students who attend 286 programs and 892 classes in all part of Saudi Arabia (Ministry of Education in Saudi Arabia, 2008).

However, most Saudi parents do not provide their children who are DHH with enough communication and language acquisition help at home (B. Al-Omari, personal communication, April 15, 2012). In fact, there is some rationale behind this issue. First, most families who are Saudi with a DHH member are not provided with training in Saudi sign language (SSL) that helps them to obtain knowledge related to language and culture of the DHH. Also, most of them do not believe that sign language is a real language (Alqahtani, 2015). Next, such families are misguided by professionals, audiologists, or speech pathologists when they convince the parents that using sign language with their children negatively affects their child's social and language development (Alqahtani, 2015). Consequently, Saudi individuals who are DHH often complain about their parents' lack of communication skills in sign language (B. Al-Omari, personal communication, April 15, 2012). They point out that they do not understand what their parents try to explain or ask at home due to the lack of their parents' skill in Saudi sign language.

Furthermore, Saudi parents are sometimes unsure of how to communicate with their children who are DHH, and they do not know the benefits of sign language due to the limited support of learning sign language from government agencies or private social organizations (Alqahtani, 2015). Hence, these parents lack information and knowledge, which impacts their interactions with their children who are DHH. This lack of information leads parents to feel sad and frustrated when attempting to communicate with their child who is DHH (Alqahtani, 2015).

Most importantly, Saudi parents want the most effective communication with their children who are DHH. This was found when one of the parents traveled to Germany in order to take some training in communicating with her child who is DHH (Alqahtani, 2015). These Saudi parents were not provided with services and training in Saudi Arabia on how to communicate effectively with their children who are DHH. In fact, there was a lack of intervention related to their communication with their children who are DHH at home (Alqahtani, 2015). Consequently, there was a need for more support for Saudi parents in communicating with their children who are DHH.

Due to the above situation, it may be reasonable to indicate that providing services for children with hearing loss in most of the Middle Eastern countries, including the Kingdom of Saudi Arabia, faces great challenges and is in need of continuous development. Therefore, investigating the perceptions of Saudi parents was important and necessary in order to improve the level of services provided for children who are DHH and their parents.

Purpose of the Study

There is a clear need for professionals in deaf education to listen to the perceptions and needs of parents with children who have DHH in order to learn how they perceive the support and service programs for their child and what they expect from professionals and from the programs. This study was designed to meet this need by documenting the needs and concerns of Saudi parents with regard to deaf education services they have been receiving in the Kingdom of Saudi Arabia.

Research Questions

In the course of the investigation, five main questions were addressed:

Q1 What types of services are being received and would like to receive by Saudi parents of children who are deaf or hard of hearing (DHH) in Kingdom of Saudi Arabia?

Q2 How satisfied are the Saudi parents of children who are DHH regarding the services received?

Q3 What are the most needed services perceived by parents with children who are DHH in the Kingdom of Saudi Arabia?

Q4 Is there any relationship between the child’s characteristics and parents’ level of satisfaction in the Kingdom of Saudi Arabia?

Q5 Is there any relationship between the child's characteristics and the importance of services to parents in the Kingdom of Saudi Arabia?

Significance of the Study

Although the majority of the literature concentrates on western societies, researchers in the Arab world and the Middle East region have recently begun exploring topics related to parents of children with special needs. For instance, Crabtree (2007) stated that, "formal services provided for children with disabilities in Arabian Gulf countries are more constrained by social perceptions of disability and lack of suitably qualified professionals" (p. 50).

Unfortunately, no studies have been conducted in Saudi Arabia to investigate the need and perceptions of Saudi parents regarding the current services provided (e.g., parents' satisfaction and needs for new types of services). It appeared that the field of deaf education has not taken advantage of the knowledge and perceptions of parents or asked them for their needs and advice. Therefore, there was a need for the field of deaf education in Saudi Arabia to hear from parents of children who are DHH.

The purpose of this study was to investigate the needs and perceptions of parents of children who are DHH in regard to the support and services provided in Saudi Arabia. Furthermore, this study explored information that has yet to be accounted for in academic studies. It also encourages other researchers to replicate this study in one form or another, which might extend the number and potency of literature reviews in the field of deaf education in Saudi Arabia. Additionally, this study will assist other researchers and professionals in understanding the challenges parents face in raising their children who are DHH. Finally, this study presented parents' voices and perspectives to inform professionals and policymakers concerning the unconscious and unspoken needs that exist for children with DHH and to assist them and their parents in improving the quality of life for individuals who are DHH and their families.

Definition of Terms

Choice making: Making decisions based on preferences and interests (Whitney-Thomas, Shaw, Honey, & Butterworth, 1998).

Communication: Sharing ideas, thoughts, and information from one person to another (Center for Disease Control and Prevention, 2011).

Deaf: "A hearing impairment that is so severe that a child is impaired in processing linguistic information through hearing with or without amplifications, that adversely affects a child's educational performance" (34 C.F.R. § 300.7 (c)(3)).

Family: A two-parent family with a deaf child who lives with other hearing siblings within the home (Gendreau, 2011).

Hard of Hearing: "An impairment in hearing, whether permanent or fluctuating, that adversely affects a child's educational performance but that is not included under the definition of deafness in this section (34 C.F.R. § 300.7 (c)(5)).

Language: A system of rules that in specific, explicit, and well-defined ways, assigns structural descriptions to sentences (Chomsky, 1965).

Related services: A term used in special education referring to developmental, corrective, or other supportive services that are required to assist a student with a disability to benefit from special education, such as physical, occupationa, or speech therapy (Rothstein & Johnson, 2010).

Sign language: A natural language for children who are DHH that is fully accessible to all people who are DHH (Stokoe, 2005).

Spoken language: A language that is produced by articulated sound as opposed to sign language (Brooks & Kempe, 2012).

Summary

Based on previous studies in the field of deaf education, considerable attention has been given to the impact of the parents' role on the children who are DHH, mainly in communication, interaction, and language development. However, one significant issue that should be noted regarding this study is that there is no literature available, particularly in Saudi Arabia, that has direct relevance to the needs and perceptions of parents of children who are DHH. At this juncture, the overarching purpose of this study was to investigate the needs and perceptions of parents of children who are DHH in regard to the support and services provided in Saudi Arabia. In conclusion, the findings of this study guided professionals and stakeholders in Saudi Arabia to know the needs and challenges parents face in raising their children who are DHH and how to assist them in improving the quality of life for individuals who are DHH and their families.

CHAPTER II

LITERATURE REVIEW

Within this literature, few studies address parents' perceptions of their children's needs in deaf education. Understanding Saudi parents' perceptions of the services and programs for their children who are DHH can enhance the evolving system of services and support for parents of children who are DHH.

The purpose of this review is to investigate the potential needs and perceptions of parents of children who are DHH in regard to the services and support provided in deaf education. Therefore, the review examines parents' roles in language development of their children who are DHH. Next, I examine studies investigating parents' needs and perceptions of the services and support in deaf education. The findings include information specifically related to the services of early identification of hearing loss, hearing technology, communication methods, and education options for their children who are DHH. Also, the review highlights parents' need for support while providing these services for their children who are DHH. Finally, I provide a brief summary of the chapter.

Parents and Children Who are Deaf and Hard of Hearing

The Role of Parents in Promoting the Language Development of Their Children Who are Hearing

More than 95% of children with deafness are born to parents who are hearing (Albertini, 2010; Mayberry, 2010; Mitchell & Karchmer, 2004b). Parents play an essential role in the language acquisition and development of their children who are DHH. Studies published in the last 10 years have highlighted the important role that parents play in facilitating language development in children who are DHH (Bailes et al., 2009; DesJardin & Eisenberg, 2007; Levesque et al., 2014; Sarant & Garrard, 2013).

Parents play a positive role in the development of their children who are DHH in language acquisition and development. For example, DesJardin and Eisenberg (2007) investigated the impact of maternal contributions such as personal involvement, linguistic input, and receptive and expressive (sign and oral) language skills in young children with cochlear implants. They found that there was a positive relationship between children's speech-language development and parents' involvement. Also, this relationship was positively related to the mothers' quantitative and qualitative linguistic input with her child. Furthermore, Levesque et al. (2014) investigated the impact of parental input on the language and communication development of a young child who is deaf. The findings showed that there was a strong relationship between the child's vocabulary growth and the parents' sensitivity to their child's communication needs. Additionally, parents who are DHH tended to extend their DHH children's knowledge about their language through scaffold interaction at an early age (Bailes et al., 2009). For example, they employed visual attention by eye-gaze, facial expressions, and body movement in their interactions with their children. Also, Bailes and her colleagues found that parents who are DHH promote and re-state complex language structures for their children who are DHH. In contrast, Spencer's (2004) study indicated that parents who are hearing increased the quantity of word types and provided more complex language structures during interactions with their children who are DHH.

Parents' characteristics predict the skill in language development of their children who are DHH. For example, parental income and education level have been shown to predict the size of vocabulary and rate of growth of expressive language in typically developing children (Hoff, 2003; Pungello, Iruka, Dotterer, Mills-Koonce, & Reznick, 2009). Similarly, parents' higher income and education have predicted better expressive and receptive language skills in children who are DHH who receive cochlear implants (Geers, Moog, Biedenstein, Brenner, & Hayes, 2009; Holt & Svirsky, 2008; Niparko et al., 2010).

On the other hand, to date, only a few studies have investigated the negative influences that parents can have on a DHH child's language acquisition and development (Quittner et al., 2010; Sarant & Garrard, 2013; Schick, de Villiers, de Villiers, & Hoffmeister, 2007). For instance, Sarant and Garrard's (2013) study investigated the relationship between parental stress and their child's language acquisition. They found that parental stress levels and child language outcomes were negatively correlated, indicating that a child's language delays are associated with increased parenting stressors. Similarly, Freel et al. (2011) demonstrated that hearing parents of DHH children have a higher level of stress during their interactions with their children compared with parents of children who are hearing; hence, both language delays and child behavior problems are associated with increased parenting stress. However, language delays observed in children who are DHH may be due, in part, to the difficulties parents have in making adaptations to their interactions with their children who are DHH or scaffolding the environment to facilitate their child's gains in knowledge and communicative competence (Quittner et al., 2010). Jackson, Traub, and Turnbull (2008) reported that interactions and relationships between parents and children were influenced by deafness. They found that some parents felt frustrated with understanding their DHH children's speech. They expressed the view that communication with their deaf children was difficult at times. In sum, parents' behavior with their children who are DHH is probably the main cause of development deficits in such children.

Furthermore, parents' knowledge of the importance of early access to language impacts their children's language acquisition and development. For example, Mitchell and Karchmer (2004b) pointed out that many children who are DHH do not gain access to language soon after birth, or even much later in childhood or adolescence. However, some children who are DHH with signing parents who are DHH access language from birth (Mitchell & Karchmer, 2004b, 2005). Therefore, it is recommended that children who are DHH need to live within homes with full access to language interaction and communication in order to acquire language at an early stage. The lack of early language access at home can negatively impact a child's language acquisition (Schick et al., 2007).

Parents' belief in the importance of children's early language acquisition and development is crucial. A study conducted by Bailes et al. (2009) emphasized that children who are DHH in families who are hearing live without the opportunity to acquire language in early years when compared with their hearing counterparts. Interestingly, children who are DHH try to copy what their parents and significant others say or act out, without understanding the meaning of those words and actions. The findings showed that the young children who are DHH do not arrive at school ready for academic activities due to the limitation of access to a natural signed language early in life (Erting, 2003). The Bailes et al. (2009) study suggested that if parents daily use sign language and encourage their children to interact and participate in conversations and discussions, their child's visual language communication will be developed. Thus, parents' sign communication and interaction with their children will not only develop their children's visual language, but will also allow them to live in a unique linguistic environment (Mitchell & Karchmer, 2004a) and demonstrate obvious cultural and linguistic knowledge (Bailes et al., 2009). In sum, parents' communication and interaction with children who are DHH play a crucial role in developing their child's language(s) at home.

Parents and Children Who are Deaf and Hard of Hearing Interaction

Hearing parents and children who are deaf and hard of hearing interaction.

Research has demonstrated the importance of interaction between parents and children (Aram, Most, & Mayafit, 2006; Berke, 2013; Carey-Sargeant & Brown, 2005; Nowakowski, Tasker, & Schmidt, 2009). First of all, parent interaction is important for developing children's attention. For example, Cramer-Wolrath's (2011) study found that parents are able to get their child's attentional expression at an early age by mutual gaze, contact, and pointing. These assisted children who are DHH to develop attention at an early age by using objects and pointing in order to receive, direct, and continuous attention. Similarly, Lieberman, Hatrak, and Mayberry (2012) pointed out that both children who are DHH and hearing children engaged in frequent and meaningful gaze shifts that were highly sensitive to the range of their mothers' cues. Therefore, researchers concluded that parent interaction is uniquely important for developing children's attention (Cramer-Wolrath, 2011; Lieberman et al., 2012).

Furthermore, parent-child interaction is necessary at an early age. Harris and Chasin (2005) examined the visual attention of 18-month-old children who were DHH and of those who were able to hear their mothers. The findings showed that children who are DHH were frequently given a responsive look from their mothers in the first months of life. Furthermore, children of mothers who are DHH significantly increased their looking at 18 months (Chasin & Harris, 2008). However, parents paid more active attention when their children were between 28 and 40 months of age (Cramer-Wolrath, 2011). This active attention is an important part of successful communication with young children who are DHH because it assists the children who are DHH to show greater sensitivity to the communicative significance of their mother's face (Chasin & Harris, 2008).

Moreover, the interactional aspects of the mother-child relationship have been studied. For example, Carey-Sargeant and Brown (2005) investigated reciprocal utterances during interactions between children who are profoundly DHH and their mothers who are hearing. They found that children who are DHH are less likely to respond to their mothers than children who are hearing. Similarly, Gale and Schick (2008/2009) found that children who are DHH of parents who are hearing spent less time in sustained interactions than children who are hearing. However, Lieberman et al. (2012) demonstrated that children who are DHH look to their mothers for a significantly greater amount of the time than children who are hearing. For example, children who are

DHH spent a significantly greater amount of time in a mutual gaze than children who are hearing. Hence, the length of time spent during interactions facilitates communication between parents and their children (Plessow-Wolfson & Flavio, 2005).

In addition, Nowakowski et al. (2009) investigated joint attention in the interactions between children who are DHH and children who are hearing and their mothers who are hearing. They discovered that mothers rated their children who are DHH significantly lower in adaptive social behavior than children who are hearing. Furthermore, Tasker, Nowakowski, and Schmidt (2010) found that children who are DHH who engaged in less joint attention were rated by their parents as lower on expressive and compliance behaviors and higher on disruptive behaviors compared to children who engaged in higher levels of joint attention. However, Tasker et al. (2010) reported that children who are DHH who exchanged a high number of communicative acts during joint attention were rated by parents as higher on the expressive and lower on the disruptive scales. Therefore, Lieberman et al. (2012) concluded that a behavioral adaptation to achieve joint attention was unique to children who are DHH.

Nevertheless, parents' interaction influences children's language development. Gale and Schick (2008/2009), reinvestigating the relationship between parent-children's joint attention and vocabulary size at an early age, found that children who are DHH from parents who are hearing produced significantly fewer words than children who are hearing. Consequently, parents' role can provide their children who are DHH with the necessary linguistic input via interactions at early ages (Plessow-Wolfson & Flavio, 2005).

Parent-child interaction during reading time has also been examined. Aram et al.'s (2006) study investigated mother–child storybook telling with children who are DHH. Hearing mothers of children who are DHH showed more control of their children in the storybook interaction than hearing mothers of children who are hearing. Furthermore, Plessow-Wolfson and Flavio (2005) found that hearing mothers who engaged with their children in mutual dialogue while reading stories also used elaboration and that parents who are hearing enabled their children who are DHH during the story interaction by expanding their children's story comprehension through presentations and questions about concepts within the story. In addition, DesJardin, Ambrose, and Eisenberg (2008) indicated that when mothers who are hearing used open-ended questions during the storybook interaction, it contributed to children's language skills, including their vocabulary, phonological awareness, and letter-word identification. Therefore, this evidence suggests that parents are able to assist in developing their children's language skills and ability during joint storybook interactions (Aram et al., 2006; Berke, 2013; DesJardin et al., 2008; Plessow-Wolfson & Flavio, 2005).

In sum, parents play a crucial role in developing their children's communication and language via interaction. For example, previous studies have demonstrated the significant role that parents make in facilitating communication and language development in children who are DHH (Aram et al., 2006; Berke, 2013; Guarinello, Berberian, Santana, & Massi, 2006/2007; Koester & Lathi-Harper, 2010). Therefore, they have to take full responsibility for developing their child's language(s) at home. They might encourage their children to interact and participate in conversations and daily discussions. This parental interaction may not only develop their children's visual language (Bailes et al., 2009), but it also allows children to live in a unique communication and language environment (Mitchell & Karchmer, 2004a).

Deaf parents and children who are deaf and hard of hearing interaction. Although parents' interaction plays a crucial role in facilitating communication and language development in children who are DHH (Aram et al., 2006; Berke, 2013; Guarinello et al., 2006/2007; Koester & Lathi-Harper, 2010), parents who are deaf have shown some differences from parents who are hearing during the interaction with their DHH children (Cramer-Wolrath, 2011; Gale & Schick, 2008/2009; Lieberman et al., 2012). According to Koester and Lathi-Harper's (2010) study, mothers who are deaf did not use facial expressions more than mothers who are hearing, even though they are frequently used in sign language. However, mothers who were deaf tended to be more responsive to their children's attention than mothers who were hearing (Gale & Schick, 2008/2009). For example, they waited longer for the response of their children who are DHH by getting eye contact (Cramer-Wolrath, 2011).

Furthermore, in a study of parent-child reading interactions, Cramer-Wolrath (2011) investigated changes of attentional expression in interchanges between children who are DHH and parents who are deaf. The findings revealed that parents who are deaf maintained storytelling by expecting their child who is deaf to follow them. Similarly, Berke (2013) found that mothers who are deaf used techniques during their reading interactions with their children who are deaf that help them better understand the text. For example, they shifted their hands or bodies for repetitive English words during the reading of the storybook and used name signs for the most important characters. Hence, parent-children interaction was found beneficial for their children, allowing them to express their individual views (Berke, 2013; Cramer-Wolrath, 2011).

Berke's (2013) study indicated that mothers who are deaf employed different strategies to engage and maintain the attention of their children who are DHH. For example, she observed that all of the mothers who are deaf found ways to make connections among their visual language (ASL) and the printed text. For example, they used chaining, explaining rhyming, explaining font sizes, explaining the difference in spelling between two similar-looking words, using ASL to explain the difference between the two languages, and following the English text through ASL. Similarly, Cramer-Wolrath (2011) pointed out that parents who are deaf used vocal initiations and reestablished expressions with their children, beginning in the child's early life. In addition, mothers who are deaf employed vocal strategies significantly more often when interacting with children who are hearing than with children who are DHH (Koester & Lathi-Harper, 2010). For example, parents who are deaf used a visual way of communication, sign language, because it enabled them to involve their children who are DHH in symbolic interaction (Loots, Devise, & Jacquet, 2005), whereas parents who are hearing used only oral communication in their symbolic interactions. Consequently, Berke (2013) highlighted the fact that parents who are deaf were able to determine how much more support in English conversation their children needed.

Chasin and Harris (2008), too, pointed out that interactions between children who are DHH and their mothers who are deaf occurred among those mothers who tended to seek their children's attention. For example, Chasin and Harris observed that mothers who are deaf made many more attempts, both unsuccessful and successful, to obtain their children's attention than mothers who are hearing. Likewise, Harris and Chasin (2005) demonstrated that mothers who are deaf are better than mothers who are hearing at managing the complex demands of visual attention. Indeed, Koester and Lathi-Harper (2010) concluded that parents who are deaf used more gestural imitation than hearing mothers, which most likely reflects the emphasis they place on visual-gestural communication and the desire to encourage this in their children's interaction and communication. Overall, there are still some differences between parents who are DHH and parents who are hearing in their interactions with their children who are DHH. These differences in interaction were documented in the previous studies.

In sum, previous studies have highlighted the important role that parents play in language development (Bailes et al., 2009; Holt & Svirsky, 2008; Niparko et al., 2010), interaction (Berke, 2013; Cramer-Wolrath, 2011), and communication (Hadjikakou & Nikoklaraizi, 2008; Mitchell & Karchmer, 2004a) in children who are DHH. However, in order for the parents to take full responsibility for developing their child's language, interaction, and communication, their needs and perceptions of the support services for their children who are DHH are important to consider. Without adequate support services for children who are DHH and their parents, parents face many difficulties meeting their children's language and communication needs (Meadow-Orlans et al., 2003).

Parents' Needs in Deaf Education

As stated previously, 95% of children with deafness are born to parents who are hearing (Albertini, 2010; Mayberry, 2010; Mitchell & Karchmer, 2004b) and who have little or no previous experience with children who are DHH or services for children who are DHH (McKellin, 1995; Meadow-Orlans & Sass-Lehrer, 1995). Consequently, parents of children who are DHH might need more support in early identification of hearing loss (Fitzpatrick, Graham, Durieux-Smith, Angus, & Coyle, 2007; White, Forsman, Eichwald, & Munoz, 2010; Yoshinaga-Itano, 2003), hearing technology (Hyde et al., 2010; Munoz, Blaiser, & Barwick, 2013), and communication methods (Hyde & Punch, 2011; Jackson et al., 2008; Sarant, Holt, Dowell, Richards, & Blamey, 2009) that require unexpected adjustments to daily life (Weisel, Most, & Michael, 2007). Also, parents may need professional support to shape their expectations of their child's development (Spahn, Richter, Thorsten, Burger, Lohle, & Wirsching, 2003). Hence, there is a great need for support for many parents of children who are DHH in deaf education. Therefore, the purpose of this section is to describe potential parents' needs and perceptions of the support services while potentially providing these services for their children who are DHH.

Early Identification of Hearing Loss

Early identification of children who are DHH through universal newborn hearing screening (UNHS) is increasing worldwide. Evidence from the United States has shown that about 90% of all newborns children had UNHS coverage (Hayes, 2000). Currently, the age of hearing loss identification has decreased from approximately 2 1/2 years of age previously to 2–3 months of age after UNHS in the United States of America (White et al., 2010).

Early identification of deafness represents an opportunity for improved and perhaps even age-appropriate communication and language development outcomes for children who are DHH. For example, Yoshinaga-Itano, Sedey, Coulter, and Mehl (1998) compared children identified with hearing loss early, within the first 6 months of age, and those later identified after 6 months of life. The findings showed that children who were identified within the first 6 months of age had better language development than children who were identified after 6 months of life. Similarly, Yoshinaga-Itano, Coulter, and Thomson (2002) compared the developmental outcomes of children who were DHH and born in a hospital with UNHS programs to those without UNHS. The authors found that children who had UNHS had better language quotients that those children who had no UNHS. For example, children with UNHS had normal language quotients, while children without UNHS had delayed language quotients. In fact, children who were early identified with hearing loss and received support services before 6 months of age had significantly better language and social- emotional development than children who were identified and received support services after 6 months of age (Yoshinaga-Itano, 2003; Yoshinaga-Itano et al., 1998; Yoshinaga-Itano et al., 2002).

Critical processes underlying normal language development begin before 6 months of age, and the undetected or delayed detection of hearing loss negatively affects many children's language development in early life. For example, many children who are DHH arrive at school age with significant language delays due to the late identification and lack of support services (Erting, 2003; Traxler, 2000). Interestingly, some children who are DHH are overlooked by the UNHS program because some hospitals do not have 24-hour screening availability or inadequate audiological assessments to identify hearing loss (Yoshinaga-Itano et al., 2000). Therefore, children who are DHH are at particular risk of being overlooked and followed up on at an early age (Spivak, Sokol, Auerbach, & Gershkovich, 2009).

Furthermore, parents can influence the process of early identification of hearing loss. For example, Russ et al.'s (2004) study investigated parents' view of early diagnosis and intervention for their children who are DHH. The participants were parents of children born in 1993 in Victoria, Australia, who were eligible for screening and who were diagnosed with a hearing loss. Each parent was asked to complete a semi-structured questionnaire. The findings showed powerful emotions experienced by parents at diagnosis, including denial and shock. Similarly, Hardonk et al. (2011) found in their study that some parents of children who are DHH denied the diagnosis of hearing loss and felt anxiety about the child's future development. Moreover, some parents do not follow up with service providers, and that is considered a serious threat to success in delivering timely and effective interventions (Hyde, 2005). Indeed, identifying that a child is DHH is often a painful and emotional experience for parents, especially those parents who are hearing and who do not have experience dealing with children who are DHH (Luterman, 2006). Consequently, parents often find themselves in a situation of anger, denial, and guilt while coming to terms with the diagnosis (Marschark, 2007). In sum, the success of early identification programs for children who are identified to be DHH is significantly affected by parents' acceptance and responses (Moeller, 2000).

Parents of children who are DHH frequently need emotional support to deal with the challenges that lie ahead. For example, Hardonk et al.'s (2011) study indicated, from a parents' perspective, that support should transcend the focus on the child's development and be sensitive to the social and psychological issues that parents face. Furthermore, parents prefer to be informed of their child's hearing loss by an audiologist who is a skilled clinician as well as an empathic and supportive counselor (Luterman & Lurtzer-

White, 1999). Emotional support helps parents to become willing and able to make informed decisions about their children's hearing options and communication development (Hyde, 2005). Consequently, parents need greater emotional support during the testing and screening and at the time of diagnosis. This will lead to minimizing parental worry and anxiety at early identification stages.

Although professionals have the capacity to provide fundamental support to parents with children who are DHH following identification, professionals can introduce stress to the parents as well. According to Russ et al.'s (2004) study, parents experienced difficulty communicating with providers and were frustrated by delays in diagnosis. Hence, Russ et al. claimed in their study that providers need more training in how to communicate findings to parents. Flexibility in the professional approach and regular consultations with parents with regard to their needs is necessary (Hyde, 2005).

Throughout the entire process of identification, the parents' perception regarding this service is very important. For example, the Joint Committee on Infant Hearing (JCIH) has recognized the important role of parents as participants providing input into the development of the early identification system (JCIH, 2000). Furthermore, Fitzpatrick et al. (2007) explored parents' perceptions of the effects of early/late identification of hearing loss. A qualitative approach was conducted to examine parents' views through individual interviews. The participants were 17 parents of children who are DHH in Ontario, Canada. Ten children were identified through traditional referral practices and 7 through systematic screening. The authors reported that the parents indicated the benefits of early identification included early access to hearing development and improved communication development for their child. On the other hand, the authors found that the negative aspects of late identification included regret for the parent and parental stress around the child's language gap. Likewise, Luterman and Lurtzer-White's (1999) study was designed to determine the views of parents with children who are DHH on their needs during the identification process**.** A questionnaire was sent to over 200 parents with children who are DHH. The authors indicated that the majority of the parents with children who are DHH supported early identification of hearing loss and would have wanted to know the diagnosis at birth. Only a few parents (17% of the respondents) would have preferred to wait to learn of their child's hearing loss. Overall, parents strongly supported early childhood hearing screening (Fitzpatrick et al, 2007; JCIH, 2000; Luterman & Lurtzer-White, 1999).

While the parents of children who are DHH support early identification systems, their needs throughout the process frequently require consideration. For instance, parents want unbiased information as they gather facts and identify alternatives (Luterman & Lurtzer-White, 1999; Meadow-Orlans et al., 2003). In addition, parents want and need time to process what they experience and the amount of information they receive at the time of diagnosis (Luterman & Lurtzer-White, 1999). DesGeorges (2003) reported that families desire better understanding and accurate information, expedient referrals, sensitivity to complex decisions, and professionals who are more knowledgeable about deafness. Consequently, providing parents with these needs will help them to navigate the process and arrive at thoughtful decisions.

In Saudi Arabia, the early identification of hearing loss services was established several years ago. The purpose of establishing the early identification of hearing loss was to identify children who are DHH at birth, instead of waiting to identify them at the age of 3 or possibly until they enter school (King Abdulaziz Medical City, 2012). According to Habib and Abdelgaffar's (2005) study, the average age of identification of children who are DHH in Jeddah in Saudi Arabia was 5.5 months. Furthermore, the number of screened children in the past few years was 7,504, and 75% of these children completed their audiological evaluation between 4 and 5 weeks of age.

Although the early identification of hearing loss services is available in Saudi Arabia, this service seems to be available only in large hospitals and cities. For example, this service is available in King Abdulaziz Medical City (KAMC), King Fahd Medical City, and King Faisal Medical City in Riyadh, King Fahd Medical City in Jeddah (western regions), and Al-Kober Hospitals and AL-Dammam Hospital in the eastern region. Early identification of hearing loss has been reported not to be effective in all regions of Saudi Arabia, which could influence negatively the effectiveness of early intervention services, including early identification of hearing loss services for children who are DHH (Al-Jifery, 2007).

In the absence of early identification of hearing loss in children, the Ministry of Education in Saud Arabia has provided hearing screening services for children who are in school through School Health Units in each region across the country. Only children who are school age are eligible for screening services (http://www.moe.gov.sa).

Consequently, this identification service only seems to reach a very limited number of children who live in large cities or who are school age. Limited early identification of hearing loss services in some cities, hospitals, or of school age means that many children are at risk of being overlooked. Also, parents of children who were identified with hearing loss will have limited access to the available services such as follow-up services, flexibility in terms of time for meeting with providers, adequate information, and resources to support their child at the time. In fact, limited service in some locations, inadequate information or support, or a delay in obtaining qualifying services may deprive many children and their parents of the potential benefits of these services in Saudi Arabia.

In sum, understanding parents' perceptions and needs will help to determine the areas in which parents have spoken out about the issues they have encountered in the system, what parents wish for their child from the system, and how parents can play a part in advocating for a system in which their needs are met. Indeed, the parents' perceptions related to their experiences that they have encountered in the early identification system perhaps can assist to develop this system for further positive impact (DesGeorges, 2003; Yoshinaga-Itano et al., 1998).

Hearing Technology

Hearing technology includes devices that are designed to aid people with hearing loss to access sound in order to improve communication and learning situations (American Speech-Language-Hearing Association [ASHA], 2015). Hearing technology includes hearing aids and cochlear implants (CIs) as well as less commonly used devices such as frequency modulation (FM) systems. Furthermore, hearing technology plays a significant role in the language development of children who are DHH. For example, children who are DHH and had CIs displayed greater improvement in spoken language performance (Niparko et al., 2010). Furthermore, children who are DHH and receive early cochlear implantation are more likely to achieve age-appropriate spoken language goals (Nicholas & Geers, 2007). Therefore, the approach to language development is increasingly using hearing technology (Nicholas & Geers, 2007; Niparko et al., 2010). In this section, I will focus only on hearing aids and cochlear implant devices because they are the most commonly used devices worldwide, including in Saudi Arabia. The delivery services and need for these devices will be evaluated from parents' perceptions as documented in previous studies.

Hearing aids. These are sound-amplifying devices designed to aid individuals who have a hearing loss. They consist of a microphone that picks up sound, a miniature loudspeaker (receiver) that delivers the amplified sound into the ear canal, amplifier circuitry that makes the sound louder, and batteries that power the electronic parts (ASHA, 2015). Most children who are DHH are candidates for hearing aids (Hyde, 2005). Importantly, the JCIH (2000) recommends that hearing aids be used by 6 months of age whenever feasible.

The service delivery of hearing aids for children who are DHH frequently requires reevaluation. For instance, many children who are DHH experience delays between hearing loss diagnosis and hearing aid fitting (Munoz et al., 2013). Furthermore, Spivak, Sokol et al.'s (2009) study was conducted to determine if the goal of hearing aid fitting by 6 months of age is achieved and to identify barriers to achieving that goal. In their study, screening and follow-up records from 114,121 children born at six hospitals were collected over a six-year period. Interestingly, one of the findings showed that the high return rate of children for follow-up does ensure hearing aid fitting by 6 months of age. Similarly, Munoz, Roberts, Mullings, and Harward (2012) discovered in their study that the experiences of parents related to hearing aids and device management after their children were diagnosed with hearing loss and that a high rate of children who are DHH still had a delay of six months or more from diagnosis to hearing aid fitting. Some children with unilateral hearing loss are at a critical risk of being lost to follow-up (Spivak et al., 2009). Therefore, there is a need to ensure that diagnosis and hearing aid services occur by 6 months of age (Hyde, 2005).

In order to ensure hearing aid service delivery at the early age of the child, parent perceptions are important. For instance, Munoz et al. (2012) surveyed the experiences of parents related to obtaining hearing aids and device management after their children were diagnosed with a hearing loss. A questionnaire was developed to collect information about the timeliness of service delivery, hearing device access, and hearing aid management. The authors reported that hearing aids were used by approximately half of parents prior to obtaining their child's own hearing aids. Furthermore, their findings showed that the most common challenges parents faced in obtaining hearing aids were finding an audiologist and the high cost of the hearing aids. Also, Munoz et al.'s (2013) study was conducted to investigate parent experiences as they access and manage hearing aids for their child. The authors used a cross-sectional population-based survey. Three hundred fifty-two parents from 45 states in the United States with children who are DHH and who were born between 1977 and 2010 completed the survey. Parents reported challenges in obtaining hearing aids included accepting the need for hearing aids and the wait times for an appointment. Another challenge that parents faced was finding an audiologist who works with babies. Nevertheless, almost one-half of the parents of children who are DHH pointed out that they did not receive enough support from their audiologist with respect to how to check the function of their child's hearing aids. Consequently, Munoz et al. (2013) stated that not all licensed audiologists have the necessary equipment and knowledge needed to provide pediatric amplification services. Therefore, parents' perceptions regarding hearing aid delivery services provide us with valuable information about areas that need more investigation to improve the process for children who are DHH. In sum, parents' perceptions are significant and need to be considered in order to prompt the improved provision of hearing aid delivery services.

Cochlear implant (CI). A cochlear implant is an auditory tool that is designed to increase access to and understanding of spoken language for children who are DHH. CIs have both surgically implanted and externally worn parts designed to improve hearing abilities (National Institute on Deafness and Other Communication Disorders, 2015). Furthermore, the spoken language approach with cochlear implant technology is increasingly popular (Hyde & Punch, 2011). In Australia, for example, 70% of children with CIs used speech alone as their preferred mode of communication, and 30% used sign language and speech as their preferred mode of communication (Hyde & Punch, 2011). While CIs have advanced the spoken language skills of many children who are DHH, they are still significantly behind those of their hearing peers of the same age (Geers & Sedey, 2011; Lee, Sung, & van Hasselt, 2002; Niparko et al., 2010). Hence, there is a need to ensure that services for CIs and support are adequate throughout the process of implementation.

Information from parents of children who are DHH about their needs for support and preferences in service delivery is important because professionals in deaf education depend upon parental involvement to carry out intervention activities at home, such as speech and language activities (Geers & Brenner, 2003). Parents' reports of these activities assist professionals to craft intervention goals to advance the children. For instance, Archbold, Lutman, Gregory, O'Neill, and Nikolopoulos (2002) conducted a study about parent perceptions three years after their children received CIs. The study involved parents of 30 children who are DHH and have CIs. Among the findings was that all parents emphasized the need for continuing technical support.

Furthermore, Archbold, Sach, O'Neill, Lutman, and Gregory (2006) investigated parents' perspectives of the process and outcomes from implantation after three years of use in the United Kingdom. The study surveyed parents of 101 children with CIs. The results showed that parents were in strong agreement (greater than 90%) with the notion of the need of an experienced team to guide the CI process as well as the need for regular checking of the device for their child. Similarly, Huttunen et al. (2009) studied the experiences of parents with children who used CIs for between two and three years in Finland. The findings showed that the majority of parents reported a strong need for ongoing monitoring and tuning of the implant system. Consequently, parental perceptions collected in previous studies can inform professionals regarding the quality of fit between parents' needs and their intervention goals.

Parents feel they need more advice and services than they are currently receiving. According to Hyde et al.'s (2010) study of the experience and perspective of parents of children who are DHH relating to decision-making about cochlear implantation for their children, a decision about cochlear implantation is stressful and difficult for parents with children who are DHH. Also, parents indicated that they did not find any support from other agencies and organizations, such as deaf associations or communities, throughout the decision-making stage. Moreover, the findings showed that parents believed that no other options were available for their child. Furthermore, Zaidman-Zait (2008) examined these issues in a study of Canadian parents' needs for support. She discovered that about 20% of the parents had difficulties locating qualified professionals in audiology. Similarly, studies conducted in the United States indicated that speech language pathologists, for example, had no experience or specific training prior to serving children who have CIs (Geers & Brenner, 2003) and felt little confidence in managing the technology or working with children who are DHH and their parents (Compton, Tucker, & Flynn, 2009). Consequently, some parents of children who are DHH often find themselves explaining their child's needs to professionals and advocating for services (Zaidman-Zait, 2008). This situation adds to parents' stress because they spend time and energy educating professionals about their child's needs before they make an ultimate decision regarding services. Therefore, awareness of parents' needs from and concerns about the aspects of the qualified professionals with whom they work enables these professionals the opportunity to support parents during the initial use of CIs.

In Saudi Arabia, hearing technology services are available. For example, the Ministry of Education has established 26 centers and units across the country that offer hearing diagnosis and hearing aids services for children in school (2008). Also, the large hospitals such as King Abdulaziz Hospital, King Faisal Medical City, King Khalid Hospital, King Fahd Medical City, and King Faisal Medical City in Riyadh as well as King Fahd Medical City in Jeddah offer hearing aids services.

Furthermore, the Cochlear Implant Program and service is available in Saudi Arabia. In 2008, for example, the Cochlear Implant Program and service was established in King Abdulaziz Medical City (KAMC) in Riyadh (KAMC, 2010). KAMC (2010) reported that more than 8,000 newborns have been screened, and more than 80 children received a cochlear implant. In addition, the KAMC program provides continuous rehabilitation services such as referral to ear, nose, and throat (ENT), recommendations for the amplification with an appropriate hearing device, and counseling for the parents of children who are DHH (KAMC, 2010). Generally, the cochlear implant service is limited to a certain region such as KAMC, King Abdullah Ear Specialist Center, and King Faisal Medical City in Riyadh.

Although hearing technology services have been developed in Saudi Arabia, there is still little information regarding cochlear implantation or amplification and the existence of services. To investigate the current status of hearing technology services in Saudi Arabia, parents' perceptions are important for identifying to what extent they feel they have benefited from the services provided.

Communication

Communication is about sharing ideas, thoughts, and information from one person to another (Center for Disease Control and Prevention, 2011). Historically, there is more than one communication method used to communicate with children who are DHH, such as cued speech, manually coded English, sign language, spoken language, and bimodal language (sign and spoken language). In this review, I will focus only on sign language and spoken language. This does not mean these two modes are better than the others, but they are considered common methods of communication that parents use in communicating with their children who are DHH. Below is a brief description of each mode of communication.

Sign language. Sign language is a natural language for children who are DHH, as demonstrated by linguistic scholars such as Stokoe (2005) and Wolkomir and Johnson

(1992), that is fully accessible to all people who are DHH. It also contains phonology, morphology, syntax, semantics, and pragmatics, as does spoken language (Mayberry & Squires, 2006). Furthermore, sign language uses a manual mode of communication, or visual language, in which information is expressed in combinations of hand shapes, palm orientations, and movement of the hands, arms, and body in relation to their location of the body as well as facial expressions (Mayberry & Squires, 2006; Petitto, 2000; Senghas & Monaghan, 2002).

Sign language plays an important role in the social development of children who are DHH in acquiring knowledge about the world. For example, Vygotsky (1993) and Zaitseva, Pursglove, and Gregory (1999) observed that sign language is an appropriate tool for the deaf to participate in social life and acquire cultural experience as opposed to spoken language. Also, previous research shows that when families, whether they are deaf or able to hear, use sign language with their children who are DHH, they are able to develop a shared language with their extended family members who are deaf from an early age (Bailies et al., 2009). In addition, the use of sign language enables children to feel confident in their abilities (Mahshie, 1995); at the same time, they feel included in family conversations and are less frustrated (Humphries et al., 2014). For these reasons, some researchers suggest that all children who are DHH should use sign language, regardless of whether they receive a hearing aid or a CI (Humphries et al., 2014). Their parents should help them by signing with them at home as well as finding other children who are DHH so their children can socialize with a common language.

Furthermore, sign language plays a significant role in the cognitive development of children who are DHH. Wolkomir and Johnson (1992) stressed that using sign language with children who are DHH improved their mind’s ability to grasp patterns in space. Also, Lieberman, Borovsky, Hatrak, and Mayberry (2014) indicated that exposing children to language, such as sign language, affects how lexical processing is organized in the brain. However, the failure of children who are DHH to acquire sign language might cause delays or disruptions in the development of cognitive skills that intertwine with linguistic ability (Figueras, Lindsey, & Langdon, 2008; Marschark & Hauser 2008; Remmel & Peters, 2009; Rönnberg, 2003). For this reason, the previous studies claimed that using sign language to communicate with children who are DHH is an excellent way to enhance children’s cognitive development.

Sign language influences the language development of children who are DHH. For example, Lieberman et al. (2014) investigated the impact of linguistic experience on real-time processing of sign language. The findings showed that those who learned sign language in early childhood performed better on narrative comprehension and vocabulary production than those who learned sign language in late childhood. Therefore, it is not surprising that when children who are DHH communicate with their parents by signing in early childhood, their language development is parallel to that of children who are hearing and who communicate using spoken languages with respect to the timing and content of linguistic milestones (Anderson & Reilly, 2002; Mayberry & Squires, 2006; Reilly, 2006).

Although children who are DHH benefit from sign language communication as discussed above, children who are DHH often acquire sign language at a much older age (Ramirez, Lieberman, & Mayberry, 2013). As stated previously, the majority of children who are DHH are born to parents who are hearing (Mitchell & Karchmer, 2005) and do not have a history of using sign language, nor do they use sign language with their children in early childhood (Schein, 1989). Consequently, children who are DHH are often exposed to sign language as a first language at a range of ages well beyond early childhood (Mayberry, 2007). For example, some individuals who are DHH begin to learn sign language when they become adolescents by socializing with people who are DHH. In addition, most parents are hearing and continue to communicate with their children who are DHH through spoken language only because they are convinced by audiologists or speech pathologists that communicating with their children through sign language causes delays in their children's language development. The effect of all these efforts is that DHH children are not able to understand the idea of communication and its purpose. Consequently, they will not be able to develop their language skills easily (Lane et al., 1996).

Spoken language. Spoken language is produced by articulated sound as opposed to sign language (Brooks & Kempe, 2012). It consists of speech production and speech perception. Speech production is a process by which spoken words are produced and when ideas transform into movements and sounds of speech (Jakobson, Fant, & Halle, 1952). Speech perception is defined as a process by which the speech is heard, interpreted, and understood (Blamey & Sarant, 2011).

Children who are DHH have been developing, or are required to develop, their spoken language skills because the majority of DHH children are born to parents who are hearing (Mayberry, 2010; Mitchell & Karchmer, 2005) and who use spoken language in communication at home (Crowe, McLeod, & Ching, 2012). Furthermore, the majority of family members who interact with DHH children in everyday life at home do not know sign language, and most of the time they communicate with children who are DHH only via spoken language. For example, the language of parents, brothers, sisters, and extended family is spoken language. Thus, spoken language is the most efficient means of communication within most families of DHH children.

Spoken language abilities of children who are DHH are diverse. For example, speech perception scores for children who are DHH with CIs were higher than for children who are DHH with hearing aids (Meyer, Svirsky, & Kirk, 1998). However, the comparison of the communication outcomes of children who are DHH with CIs and those with hearing aids showed that both groups' performances were equivalent on most speech recognition and language tests (Eisenberg, Kirk, Martinez, Ying, & Miyamoto, 2004). Furthermore, Connor (2006) examined the communication skills of one young child with CIs. She found that his speech and language skills increased and were very similar to those of a child who is hearing at the same age. Interestingly, the researcher observed that the early use of sign language and gestures support children who are DHH in their communicative efforts. In addition, she reported that the child's use of sign language decreased as his oral communication skills improved.

Nevertheless, most children who are DHH have limited ability in speech production. For example, Fitzpatrick, Crawford, Ni, and Durieux-Smith's (2011) study found speech production is the most impaired for children who are DHH. Speech production abilities of children who are DHH show they rely on their capability of speech perception. DesJardin, Ambrose, Martinez, and Eisenberg's (2009) study found that the relationship between speech perception abilities was significantly correlated with spoken language skills in children who are DHH. The better the speech perception ability of children who are DHH, the better their speech production development (DesJardin et al., 2009).

The parents' role has been considered a highly influential factor in spoken language development of children who are DHH. It accounts for between 22-35% of the factors that influence spoken language outcomes for DHH children (Geers et al., 2008; Moeller, 2000; Sarant et al., 2009). For example, parents' socioeconomic status (SES) and educational level predicted better speech perception and speech production skills in children who are DHH (Geers et al., 2009; Holt & Svirsky, 2008; Niparko et al., 2010). Thus, the delay of spoken language exhibited by children who are DHH was due, in part, to the difficulties parents have in making adaptations for their child who is DHH or scaffolding the environment to facilitate their children's gains in knowledge and communication (Quittner et al., 2010).

Although most of the parents who are hearing want their children who are DHH to speak, they did not want to use sign language (Hyde & Punch, 2011), and not all parents are able to communicate with their children by spoken language. A study conducted by Bailes et al. (2009) emphasized that DHH children in hearing families live without the opportunity to acquire language during their early years when compared to their hearing counterparts. Interestingly, at home, most parents try their best to communicate with DHH children when they do so through spoken language; however, their DHH children try to lip-read whatever their parents and significant others say or act out without understanding the meaning of those words or actions.

In sum, many children who are DHH still lack skills in spoken language (Moores, 2010; Sarant et al., 2009). The studies showed that children who are DHH who received

CIs in early childhood still performed similarly to children who are hard of hearing. Parents' characteristics are considered as the most important factor, and they play a role in the development of spoken language of children who are DHH.

Decision-making. The framework of communication and language development is one of the vital decisions hearing parents should immediately make when it becomes obvious that their children are DHH because deafness and language ability are closely linked (Desselle & Pearlmutter, 1997; Harrison, Dannhardt, & Roush, 1996). However, making the decision is the hardest choice parents face (Jackson et al., 2008), and it is stressful (Hyde et al., 2010). Therefore, hearing parents' decisions about communication methods with their children who are DHH varies.

Professionals play a significant role in parents' decision-making about their communication choice. For example, Jackson and her colleagues (2008) examined parents' experiences with deafness after early identification. They reported that some parents stated that some professionals and agencies forced a communication method on them that the professional felt should be used when communicating with their children at home. Parents felt tremendous pressure from professionals when it came to choosing a communicational method. Furthermore, this issue of the parents' decision-making about communication choices is interesting, though the sad reality is that the majority of hearing parents are misguided by professionals such as audiologists or speech pathologists upon discovering that their children are DHH and require remediation to stem the tide of hearing loss. These professionals persuade the misinformed parents that using sign language with their children causes a delay in their child's language development (Eleweke & Rodda, 2000; Hyde et al., 2010). Therefore, parents want their child to speak, and they do not want to use sign language or other signed communication approaches because they are pushed by the medical profession to not use those approaches. To compound the situation, most of these parents spend months or years visiting these professionals without satisfactory results (Quittner et al., 2010). The effects of all these efforts is that DHH children are not able to understand the idea of communication and its purpose, and they are not able to develop their language skills easily (Lane at el., 1996). Consequently, parents complained that the professionals did not seem concerned about their needs and challenges, but that the professionals simply followed their professional philosophy (Eleweke & Rodda, 2000). Also, they felt that they received biased information from professionals (Young, 2002).

Another aspect that plays a significant role in the choice made by parents about communication with their children is the parents' characteristics. For example, Decker, Vallotton, and Johnson (2012) investigated additional influences on parents' choices. They found that those parents who decided to use either sign language or speech, or both, did not have knowledge of communication development. Similarly, Young (2002) investigated the factors affecting parents in making a decision about their communication choice with their children who are DHH. The findings showed that parents made their decision without previous knowledge. For example, they made crucial choices about how to promote their children's language and communication without realizing the full range of communication options available to them. Furthermore, in their study, Hyde et al. (2010) indicated that parents felt it was difficult to find comprehensive information to guide their decision-making processes about cochlear implantation for their children who are DHH, despite the fact that there was ample information provided by medical and audiological personnel on the issue. In addition, Hyde and his colleagues discovered that parents solely use speech or CIs with their DHH children because they believed that there was no other option for their DHH children to develop their communication ability.

This raised questions about their knowledge of their child's communication needs at an early age (Young & Tattersall, 2007). Therefore, parents need to have the time to fully consider these major decisions before they make a final decision about communication (Hyde et al., 2010). Also, professionals need to provide accurate information to parents so that they can make informed decisions about their children's communication. To sum, the empowerment of parents to be better users and evaluators of that information is crucial in enabling them to make choices that make sense to them.

In Saudi Arabia, two common methods are used in communication with children who are DHH: spoken language and sign language. However, the services for spoken language exist more than sign language. For instance, speech pathology services are available in some hospitals and primary care centers for children at an early age. Also, the number of speech and hearing centers for children of school age has been increased significantly, and there are 26 centers across the country (Ministry of Education in Saudi Arabia, 2008). Although speech pathology services and programs have been developed in Saudi Arabia, there is a need to evaluate these services. According to Alqahtani's (2015) study, some Saudi parents were not provided with any support from the hospital. Some parents left the hospital without any resources or information regarding caring for or communicating with their child at home (Alqahtani, 2015).

On the other hand, the support services of sign language for children and parents seems non-existent for the very young. For example, often children who are DHH acquire sign language from their peers when they begin school or by socializing with deaf people at deaf organizations. Although Saudi parents are willing to support their deaf child, their role in the process of determining communication options is not yet widely appreciated (Alqahtani, 2015). For example, Saudi parents indicated, based on their experiences, that they did not have support and training in sign language (Alqahtani, 2015). This lack of information and support affects their communication and interaction at home with their children who are DHH. In such circumstances, the success of communication services in Saudi Arabia is still quite limited, while the role of parent involvement in the process of the services is not yet widely appreciated. Therefore, there is a need to investigate parents' needs and perception in Saudi Arabia in communication services for their children who are DHH.

Educational Options

According to Zaidman-Zait and Jamieson (2004), information relating to education was one of the most important topics to parents of children who are DHH. Similarly, Porter and Edirippulige (2007) surveyed the patterns of Internet use by these parents who were seeking hearing-loss-related information within the Australian context. At the time of the survey, educational options were one of the most common topics parents searched for on the Internet (54%). Parents wanted to find objective information about education options for their children who are DHH. This information is very important because parents' communication decisions for their children who are DHH are often based on their children's educational placements, for example, whether their child attends a deaf school or a mainstream school (Knoor, Meuleman, & Klatter-Folmer, 2003; Myers et al., 2010). Therefore, information about educational options is important for parents of children who are DHH in light of the children's existing needs and concerns.

Obtaining information about education and communication options available for children who are DHH was identified as the highest parent need for parents of children with cochlear implants, according to Most and Zaidman-Zait (2003). Furthermore, Jamieson, Zaidman and Poon (2011) investigated the needs of parents of school-age children who are DHH in British Columbia, Canada. They used focus groups and questionnaires to collect the data from the parents. The questionnaires concerned background information and parent support needs. The authors reported that parents expressed the need for information about programs and services for their children who are DHH and their eligibility for those programs and services. The parents indicated the need to receive information regarding both services that are currently available and services their child might be eligible to receive in the future. Overall, parents of children who are DHH continue to have pressing concerns regarding educational options and future opportunities for their children (Jamieson et al., 2011; Most & Zaidman-Zait, 2003).

Although the importance of the need for information about educational options for parents with children who are DHH is recognized in the previously mentioned studies, evidence indicates that such information may not be provided to these parents (Eleweke, Gilbert, Bays, & Austin, 2008; Jamieson et al., 2011). For example, parents acknowledged that they know nothing about the existence and availability of programs and services for their children who are DHH (Jamieson et al., 2011). Also, parents explained that professionals for children who are DHH seemed hesitant about giving them as much information as possible (Eleweke & Rodda, 2000) because some of the professionals tend not to be concerned for the parents as a whole (Robinshaw & Evans, 2001). Furthermore, parents complained that the professionals did not care about their needs and challenges (Eleweke & Rodda, 2000). For instance, teachers often decide on educational placement programs and services for children who are DHH without adequately informing and consulting the parents (Morton, 2001). Importantly, evidence indicates that in the absence of clear and adequate information on available supports, parents can encounter difficulties. For example, parents may not be able to make appropriate choices about the communication and educational needs of their children who are DHH (Davila, 2004), nor are parents able to participate effectively in their children's education (Eleweke et al., 2008). Consequently, parents need to be provided with adequate quality of information, consultation, and support services because the limitation of support and services could influence parents' decisions and roles regarding their children's need.

Although the lack of support relevant to the needs of parents and their children who are DHH remains a major factor resulting in the provision of inadequate services (Marschark, 2007), this concern can be met by providing parents with guidance, support, and information that can be applied in the decision-making process concerning their DHH children's needs (Zaidman-Zait, & Jamieson, 2004). Also, the findings of Luckner and Muir's (2001) study of factors contributing to the educational success of children who are DHH in general education settings strongly support the need to provide parents with information that encourages their participation in their children's educational development. The parents considered that the information and support services they received enabled them to contribute positively to their children's success in the school. In addition, the parents indicated that the information they received enabled them to fully appreciate the importance of their involvement and contribution to their children's success. Hence, providing parents with adequate information about support services enables them to make informed choices and participate actively in the educational development of their children who are DHH (Luckner & Muir, 2001).

In Saudi Arabia, education of special need children has existed since 1962, which provided special needs children with education including DHH. In 1964, deaf education was organized with the creation of the Al-Amal (Hope) Institute in Riyadh. Consequently, the Educational Administration of the Deaf was established. Its responsibility was and continues to be to prepare and administer all educational programs for DHH students around the country (Ministry of Education in Saudi Arabia, 2008). The majority of children who are DHH used to attend the deaf schools that existed in most parts of Saudi Arabia. Currently, children who are DHH are educated in both deaf schools and regular public schools, but not in the regular classroom (Haualand & Allen, 2009; Ministry of Education in Saudi Arabia, 2008). For example, in 2008, the mainstream schools for DHH increased to 286 programs and 892 classes, and the number of beneficiaries of public schools for DHH rose to 4,511 students, with 1,831 classroom teachers and 76 speech pathologists. There were 1,711 teachers for specific subjects such as math, computers, art, sports, and science. The total number of teachers for the DHH was 3,618 (Ministry of Education in Saudi Arabia, 2008). Unfortunately, the majority of children who are DHH in Saudi Arabia do not receive educational services before they are 5 years old (Hanafi, 2007; Haualand & Allen, 2009) even though the Saudi disability code (Saudi Arabian Society for Hearing impairment, 2014) indicates that children who are DHH have the right to access all levels of education (pre-school, general, higher or vocational education) that are appropriate to their abilities and needs.

Consequently, limited educational access for most children who are DHH at an early age may negatively affect their social and language development and cause them to fall behind their peers who are hearing in school. However, parents face many challenges in meeting their children's needs alone when the children are very young (Alqahtani, 2015) and usually end up enrolling their children who are DHH in schools after many years of frustration from searching for a solution to meeting their children's daily needs. As a result, children who are DHH often enter school without skills in language and communication, which negatively affects their academic performance and progress (Hanafi, 2007). As reported previously, providing parents with educational options is necessary in order to make appropriate choices about the communication and educational needs of children who are DHH (Davila, 2004). Therefore, considering Saudi parents' needs and perceptions regarding the educational services for their children who are DHH is needed. Their perceptions will inform the stakeholders in deaf education concerning the needs that exist for children with DHH and their parents.

In sum, educational options for children who are DHH are considered one of the common needs for parents of children who are DHH. Providing parents with adequate information and support helps them to access services that address the developmental needs of their children who are DHH.

Social Support

Social support is defined as an interpersonal transaction involving one or more of the emotional concerns, information, and instrumental aid, or information relevant to self-evaluation (House, 1981). Clearly, the birth of a child who has significant hearing loss impacts hearing parents of DHH children, who have been found to experience high levels of parenting stress surrounding such issues as early identification (Russ et al., 2004; Spivak et al., 2009; Yoshinaga-Itano et al., 2000), hearing aid maintenance (Geers & Sedey, 2011; Munoz et al., 2012), communication difficulties (Hyde et al., 2010; Jackson et al., 2008; Quittner et al., 2010), and educational concerns (Jamieson & Zaidman, 2011; Lederberg & Golbach, 2002). Meanwhile, these parents' high levels of stress can negatively influence their child's language development (Quittner et al., 2010). Therefore, parents need to be provided with social support services to help them address these challenges more effectively.

Enhanced social support may have beneficial effects on levels of parental stress. Guralnick, Hammond, Neville, and Connor's (2008) study, for example, investigated the relationship between the sources and functions of social support and various dimensions of child and parent-related stress for 63 mothers of young children with mild developmental delays. The researchers asked the participants to complete assessments of stress and support at two different times and found that there was a strong relationship between parenting support during the early childhood period and parents' stress. Similarly, Asberg, Vogel, and Bowers (2008) explored stress among 35 parents of children diagnosed with DHH and found a positive relationship between social support and reduced stress: the higher the levels of social support, the less often parents' stress occurred. The researchers also indicated that perceived social support and existing modes of communication were significant predictors of parenting stress. The authors concluded that there was a perceived inadequacy of social support related to parenting stress and the parents in their study desired to have access to more social support (Asberg et al., 2008).

The level of parents' need for social supports varies. For example, most parents require information about their child's social and emotional development (Jamieson, Zaidman, & Poon, 2011). According to Jackson's (2011) study, informational resources were the top-ranked sources of support that parents need. However, Hyde et al.'s (2010) study also indicated that a major source of information and support for parents are other parents of children who are DHH, with 55.5% of parents getting their information from parents of children with CIs. Furthermore, Mikkelsen, Nielsen, and Rasmussen (2001) surveyed the support services in Denmark for parents of children who are DHH and reported that other parents of children with hearing loss, relatives, spouses, speech and hearing therapists, and preschool teachers are the most important sources of information and support for them. Hence, previous studies have demonstrated the need for informational resources and support as significant aspects of parent social support (Jackson, 2011).

Fitzpatrick et al.'s (2007) study indicated that parents would like to have access to support from other parents. Compatible with this finding, Nunez and Ceh's (2001) research indicated that 77% of the parents of children who are DHH with CIs emphasized their need to receive information about parent support groups. Furthermore, Jackson (2011) investigated support and resources for parents of children who are DHH in a study that included 456 parents or other adult family members who participated. One of the findings indicated that parents desired additional opportunities to connect with other parents of children with hearing loss. For instance, parents expressed a preference for meetings and discussion with other parents of children who are DHH regarding their child's needs. In addition, Most and Zaidman-Zait (2003) surveyed the needs of parents of children who are DHH with CIs, focusing on their need for information, and asked them the most effective way of meeting that need. One of the findings indicated that parents wanted to receive emotional support from other parents of implanted children and from professionals. Indeed, evidence from several studies has shown that parents need to receive social support from other parents of children who are DHH (Jackson, 2011; Most & Zaidman-Zait, 2003; Nunez & Ceh, 2001).

Parents need to be provided with social-emotional support to deal with the challenges that lie ahead. As found previously in Hardonk et al.'s (2011) study, parents indicated that support from professionals should not only focus on the child's development, but should also be sensitive to the social and psychological issues that parents face. Parents complained, for instance, that professionals did not seem concerned about their needs and challenges (Eleweke & Rodda, 2000). Most and Zaidman-Zait (2003) surveyed 35 mothers of CI candidates or current users on the relative importance of topics in a parent-targeted intervention program, especially the desired timing and manner of service delivery as well as the team members with whom the parents preferred to work. This study showed that 36.4% of the mothers reported that they lacked emotional support, and the evidence indicated a great need for such support. The authors concluded that there is a strong need to alert professionals who may tend to neglect the emotional issues of parents of children who are DHH. Consistent with this finding, Mikkelsen et al.'s (2001) study concluded that there is a need for early social-emotional support for qualified advisers and for enhanced cooperation between advisers and parents. Therefore, parents need to be provided with social-emotional support at different stages, which will help them to become more willing and able to make informed decisions about their children's hearing options and communication development (Hyde, 2005). In sum, previous studies have demonstrated the need of social-emotional support as a core aspect of parent support (Hyde, 2005; Jackson, 2011; Most & Zaidman-Zait's, 2003).

In Saudi Arabia, many hospitals, rehabilitation centers, speech and hearing centers, and deaf organizations across Saudi Arabia have indicated that one of their missions is to provide individuals who are DHH with social and psychological support services. For example, more than 12 deaf organizations and clubs have been established in all regions of Saudi Arabia to help deaf individuals integrate into their community and society (Saudi Deaf Sports Federation, 2009). Although many of these agencies' websites indicate social and psychological support for children who are DHH and their parents, some Saudi parents explained that they did not have enough support from these agencies (Alqahtani, 2015). Similarly, Hanafi's (2007) study indicated that the majority of people with disabilities, including children who are DHH, did not have access to psychological services at an early age in Saudi Arabia. In addition, there was a lack of coordination among these agencies involved in early intervention services (4th International Conference on Disability and Rehabilitation, 2014). This gap might cause limitations in providing children who are DHH and their parents with full access to the available services and options. Therefore, social support should be in existence and ensured for children who are DHH and their parents individually and institutionally at an early age (Saudi Arabian Society for Hearing impairment, 2014). With regard to evaluating the current status of social support services in Saudi Arabia, parents' perceptions are important to identify to what extent they feel they have benefited from the services provided.

In conclusion, previous studies have documented the various aspects of support needed for parents of children who are DHH, including their need to obtain information about early identification (Hardonk et al., 2011; Spivak et al., 2009; Yoshinaga-Itano, 2003), hearing technology (Hyde & Punch, 2011; Munoz et al., 2013; Niparko et al., 2010), communication (DesJardin et al., 2009; Mueller & Sepulveda, 2014), the educational options available for their children (Eleweke et al., 2008; Jamieson et al., 2011; Zaidman-Zait & Jamieson, 2004), and the need for them to receive social support (Asberg et al., 2008; Hyde, 2005; Jackson, 2011).

Summary

When the majority of children who are DHH are raised by parents who are hearing (Mayberry, 2010; Mitchell & Karchmer, 2004b), challenges are created. This results in added responsibilities for parents to help their children who are DHH to overcome their poor language skills, understand how to communicate clearly, and experience the world around them. Consequently, parents need to be provided with appropriate support services for their children who are DHH in order to best serve their children's language and communication needs. These support services for children who are DHH and parents should be adequately provided after the hearing loss is identified in order to avoid a language delay in the children and to have a language with which to participate in human society (Burke et al., 2011; Humphries et al., 2013; Kushalnagar et al., 2010). Therefore, the needs of parents' perceptions about children who are DHH is obvious when one looks at the type of support services for the parents when their child is identified with a hearing loss. The previous sections included topics related to the perceptions of parents with children who are DHH regarding the needs and support services that professionals in deaf education may need to know in order to effectively assist the development of these services and needs for children who are DHH and their parents. These topics included the early identification of hearing loss, hearing technology, communication methods, education options for children who are DHH, and supporting service. Overall, consideration of parents' perceptions and needs of the support services for children who are DHH allows professionals to understand and infuse the deaf education system beyond only the professional perspective.

CHAPTER III

METHODOLOGY

This chapter includes six sections. The first and second sections highlight the description of the setting and participants in this study. The third and fourth sections focus on the instrument that was used to collect the data and the translation method. The fifth section describes the procedures that were used to collect the data. Finally, this chapter concludes with a description of the statistical method used to analyze the data.

Setting

The setting of this study was in the participants' homeland in Saudi Arabia. The majority of Saudi families are of Arabic ethnicity and middle class background. Furthermore, many Saudi families have extended families who get together frequently. Nevertheless, the deaf culture in Saudi Arabia is existence. It has history, language (Saudi sign language), communities, and societies. Furthermore, the deaf population has increased significantly and is estimated to be approximately a half million, according to a leader for Saudi deaf people in a TV program on May 7, 2012 (leader's name, 2012). Deaf organizations have been playing an important role in deaf education, and they include the Prince Selman Center for the Handicapped and Saudi Arabia's associations for hearing impairment and deaf clubs across the country. These organizations help both deaf and hearing people develop and learn Saudi sign language by offering Saudi sign language workshops and activities. They also build and represent deaf culture to hearing people by linking deaf and hearing communities around the country.

Participants

The selection of participants was based on convenience sampling. The participants were Saudi citizens who have children who are DHH and live in the Kingdom of Saudi Arabia. The age of the children ranged from birth to 18 years. The children's degree of hearing loss ranged from mild to profound hearing loss. Therefore, the survey was sent to parents who met the specific criteria described above.

In order to determine the appropriate sample size, the researcher used G-power statistical software analysis. G-Power software is primarily a useful power analysis used to determine how many participants are needed in order to obtain significant results. The effect size .40 was suggested according to the literature (Cohen, 1988). The alpha (p-value) was .05, which is appropriate for our field. The effect size was at .80 power level, and that is certainly an adequate level to achieve in accordance with Cohen's (1988) standard. As $F(2,03), p\ .05, f\ .80, f_{adjusted}\ .40$ input were calculated on G-power software, at least 102 parents with children who are DHH were needed because the researcher expected to have a large effect size. One hundred seventy-six surveys were collected. Nineteen surveys were eliminated during the analysis because many responses were incomplete. Surveys from 158 Saudi parents of children who are DHH throughout the Kingdom of Saudi Arabia were analyzed. Seventeen parents responded through a printed survey. One hundred forty-one parents were electronically surveyed through the Qualtrics website which was sent via social media. These parents were recruited via 12 deaf organizations, clubs, and social media such as Twitter and Facebook.

Research Instrument

A survey was used to gather quantitative data from hearing parents of children who are DHH in the Kingdom of Saudi Arabia. This survey was named the Survey of Saudi Arabian Parents and Their Needs in Deaf Education and Services (SAPNDES). Most of the items (31 items) were adopted from other surveys developed and used by other researchers (Bakar, Rickards, & Griffin, 2006; Dalzell, Nelson, Haigh, Williams, & Monti, 2007; Jabery, Arabiat, Khamra, Betawi, & Jabbar, 2014; Jackson, 2011; Young, Gascon-Ramos, Campbell, Bamford, 2009). However, some items (10 items) were developed by the author on the basis of a literature review in deaf education (e.g., Hardonk et al., 2011; Hyde et al., 2010; Jamieson et al., 2011; Mueller & Sepulveda, 2014).

The SAPNDES survey consisted of three sections (see Appendix B). The first section asked demographic information about parents such as gender, age, economic level, and educational level. The second section asked for demographic information about the child who is DHH, such as hearing status, grade, communication methods, sensory device, degree of hearing loss, and age at identification. Both the first and second sections provided each participant with multiple-choice items (male, female) and (below high school, high school, university degree), where participants have to choose one of the items that applies to his/her status. The third section consisted of five types of services provided in relation to a child who is DHH, such as early identification, hearing technology, communication, educational options, and social support. This section also included three columns. The first column used a 3-point Likert scale that ranged from “Yes,” “No,” and “Do not know/Not sure” that asked parents of children who are DHH to rate the services they received. The second column used a 5-point Likert scale that ranged from “Very Dissatisfied” to “Very Satisfied” that asked parents to rate their satisfaction with received services. The third column used a 5-point Likert scale that ranged from “Very Important” to “Unimportant” that asked parents to indicate the importance of specific aspects of support services. There were 15 items in this section taken and reframed from reviewing relevant studies (e.g., Brown, Baker, Rickards, & Griffin, 2006; Dalzell et al., 2007; Jabery et al., 2014; Jackson, 2011; Young et al., 2009). For example, the researcher adopted 4 items from Brown et al.’s (2006) study (Items 10, 11, 13, 14), 3 items from the Dalzell et al. (2007) study (Items 8, 9, 18), 4 items from Jabery et al.’s (2014) study (Items 2, 22, 23, 24), 1 item from Jackson’s (2011) study (Item 25), and 3 items from Young et al.’s (2009) study (Items 6, 7, 21). The last section of the survey used an open-ended question asking parents to add any comments that might be needed for future consideration. The Arabic version of this survey was estimated to take around 15 minutes to complete.

Translation for the Instrument

Since this study took place in the Kingdom of Saudi Arabia, the survey was translated from English into Arabic by the researcher. The researcher used two types of translation methods: (a) forward translation, and (b) focus group translation.

First, the forward translation method was used. Two translators who are bilingual speakers (Arabic and English) translated the instrument independently. The role of the translators was to produce a translated version in the target language (Acquadro, Conway, Hareendran, & Aaronson, 2008). The first translator is “native” Arabian. The objective was to produce a translation that reflects the language by the layman who is less influenced by an academic objective. The second translator has a background in the area of special education. The goal was to produce a translation providing equivalence from a measurement perspective (Acquadro et al., 2008). After completing the translation, each translator was required to submit a written report summarizing all choices made and remaining uncertainties. A cover letter was attached to the survey and explained the purpose of the study.

Second, the focus group translation method was used. The goal was to ensure the quality of the survey translation. This method consisted of multiple translators (N = 3) who are bilingual speakers in Arabic and English at the University of Northern Colorado. Those translators came from different majors such as education professionals and methodologists. Their role was to identify and resolve any discrepancies between the forward translation and the original questionnaire. For example, a focus group was conducted to gauge the survey's readability level by discussing the meaning of some words and questions in the survey, such as cochlear implant, auditory, mild-moderate, and sensory device. This process took several iterations, but resulted in a complete translated version of the questionnaire. After considering the suggestions of the focus group members, changes were made in the final draft of the Arabic translated scales that was eventually provided to the target population of the study.

Content Validity

In order to check the accuracy of the survey prior to distribution, it was resent to Saudi parents (N = 3) after it was translated into Arabic. The researcher asked parents for feedback about the items in the survey. This process helped to ensure that the participant understood the survey's items as well as fitting the target population in this study.

Data Collection

Copies of the survey forms were personally and electronically delivered to the administrator of each Saudi deaf organization (Saudi Association for the Hearing Impaired and Saudi Club) and social media such as Twitter and Facebook. The researcher sent a letter to the organization and club administration via email asking them to distribute the survey and letter to all parents who met the qualification for the survey. This letter described the purpose and the importance of the study for Saudi deaf future generations and families. The researcher asked the deaf organizations and clubs participating to send printed surveys with cover letters explaining the purpose and the importance of the study to all participants. Furthermore, the organizations and clubs provided a pre-stamped envelope for sending and returning the printed survey to and from the parents. The instructions in the cover letter asked each participant to fill out the survey, insert it in the envelope, seal the envelope, and send it back to the deaf organizations and clubs. Parents were also provided with the researcher's cell phone number and email in the cover letter in case immediate help was needed. Two weeks after distributing the survey, each organization and club administrator received a phone call reminder from the researcher to encourage parents to send back the completed surveys as well as to follow up with organizations and club administrators about the collection process. Three weeks later, the researcher collected all completed surveys.

The survey was made available to parents through the Qualtrics website. The responses were completely voluntary. Therefore, the researcher also sent the survey electronically via social media.

Data Analysis

As mentioned previously, there were five research questions for this study. In order to answer all five research questions, data were analyzed using the Statistical Package for the Social Sciences (SPSS version) program (Pallant, 2013). The researcher presented descriptive statistics on all demographic data of the parents as well as for the child's characteristics, such as the frequencies and percentages. Other than the demographic data, the researcher performed descriptive statistics to answer the first research question. Frequency and percentage of services received for their child who is DHH were presented in the results section. The results described which services were most received among the participants in the study.

For the second question, the researcher presented the means and standard deviations for all of the items. In the second research question, the researcher was interested in examining participants' level of satisfaction towards the services received using the 5-point Likert-scale (1 = very dissatisfied to 5 = very satisfied).

For the third research question, the researcher presented the frequency, percentage, and rating averages for all of the items. In the third research question, the researcher determined which services were needed the most by participants using the 5-point Likert scale (1 = unimportant to 5= very important).

For the fourth research question, the researcher was interested in examining the relationship between some selected items of the child's characteristics and participants' level of satisfaction. The child's characteristics of interest were gender and hearing status. For each level of satisfaction, the researcher used two-way ANOVA test to determine the relationship between the gender and hearing status of the child and parents' level of satisfaction.

Similarly, for the fifth research question, the researcher was interested in examining the relationship between some selected items of the child's characteristics and the importance of services to parents. The child's characteristics of interest were the same as in Research Question 4 (i.e., gender and hearing loss state of the child). For importance of the services, the researcher used two-way ANOVA test to determine whether there was a significant relationship between the gender and hearing status of the child and parents' level of importance of services and support for their children who are DHH. The researcher used the α-value = 0.05 as a cut-off level of significance for all statistical analysis.

CHAPTER IV

RESULTS

The purpose of this study was to investigate the needs and perceptions of parents of children who are DHH in regard to the support and services provided in Saudi Arabia. Information was gathered by surveying Saudi parents of children who are DHH throughout the Kingdom of Saudi Arabia. The results of this study are reported in this chapter. Particularly, results relating to the research questions and demographic information regarding the population sampled are provided.

Reliability Data Collection

The reliability of scales was determined through the computation of measures of internal consistency where there were sufficient subjects to permit it. Cronbach's alpha was computed for these scales. The reliability of scores in this study were as follow: satisfaction = 0.87; importance = 0.98.

Validity Data Collection

In order to determine the validity for the scales used in this study, construct validity and content validity of the Saudi Parents Needs in Deaf Education Scale was measured. Content validity and construct validity were determined.

Content Validity

In order to check the accuracy of the instrument, it was sent to Saudi parents (N = 3) after it was translated into Arabic. The researcher asked parents for feedback about the items in the instrument. This process helped to ensure that participants understood the instrument's items as well as that it fit the target population in this study.

Construct Validity

The 25 items of the Saudi Parents Needs in Deaf Education Scale were subjected to factor analysis (FA) using SPSS. Inspection of the correction matrix revealed the presence of many coefficients of .3 and above. The Kaiser Meyer-Olkin value was .099.

Descriptive Data

Characteristics of Parent Respondents

Demographic characteristics of parent respondents are provided in Table 1. One hundred fifty-eight Saudi parents of children who are DHH throughout the Kingdom of Saudi Arabia responded. Ninety (56.96%) surveys were completed by fathers, and 68 (43.04%) surveys were completed by mothers. The majority of respondents (80.87%, n = 126) were parents who are hearing with children who are DHH. However, 19.22% (n = 30) of respondents were parents who are DHH with children who are DHH. Additionally, most parents (64.18%) had one child who is DHH. Other parents (35.82%) had more than one child who is DHH.

Table 1

Demographic Characteristics of Parent Respondents

Characteristic	Number and Percentage
Number of parent respondents0 (N = 158)	
Father	90 (56.96%)
Mother	68 (43.04%)
Parents' age (N = 157)	
Less than 25	11 (7.00%)
26-35	55 (35.03%)
36-45	61 (38.85%)
46 or more	30 (19.12%)
Number of children who are DHH (N = 148)	
1	95 (64.18%)
2	34 (22.97%)
3	17 (11.48%)
4	2 (1.37%)
Region (living) (N = 156)	
Large city	107 (68.58%)
Small city	40 (25.64%)
Suburban	1 (0.65%)
Village	8 (5.13%)
Parent's education level (N = 151)	
PhD	3 (1.98%)
Master	15 (9.93%)
Bachelor	60 (39.73%)
Some college	24 (15.89%)
High school	40 (26.49%)
Did not complete high school	9 (5.98%)
Employment status (N = 156)	
Yes	114 (73.07%)
No	42 (26.93%)
Economic status (N = 155)	
Upper class	7 (4.52%)
Middle class	124 (80.00%)
Lower class	24 (15.48%)
Parent's hearing status (N = 156)	
Deaf	13 (8.33%)
Hard of hearing	17 (10.89%)
Hearing	126 (80.78%)

More than half of parents (68.58%) reported living in a large city. Other parents were living in small cities (25.64%), villages (5.13%), and suburban areas (0.65%). Furthermore, parents' educational levels in this study were as follows: 26.49% (n = 40) of the parents have a high school education, 39.73% (n = 60) have a bachelor's degree, 15.89% (n = 24) have some college, 9.93% (n = 15) have a master's degree, 1.98% (n = 3) have a PhD, and 5.98% (n = 9) did not complete high school. Most parents (67.53%) reported having postsecondary education.

In regard to economic level, the majority of participants (80%) fell in the middle income level. Additionally, 114 (73.07%) were reported as employed, and 42 parents (26.93%) were reported as unemployed.

Characteristics of the Children Who are Deaf and Hard of Hearing

Characteristics of the children are provided in Table 2. The children whose hearing status was provided were identified as hard of hearing or deaf. Sixty-two percent were male and 37% were female. Approximately 35.09% of children who are DHH had been identified with hearing loss before the age of 6 months old; 32.45% of children were identified prior to the age of 18 months; and 24.5% of children had been identified no later than the age of 48 months. Few children (7.96%) were identified later than the age of 48 months. The majority of children (69.92%) were reported to have either a profound or severe degree of hearing loss. Some participants (12.44%) reported the degree of hearing loss of their children as unknown. Among the variety of hearing devices that the children were reported using, cochlear implants were the most common (47.71%). Some children (17%) were reported as non-users of a hearing device. In regard to children's primary method of communication at home, sign language (12.98%), spoken language

(38.31%), and both sign and spoken language (39.61%) were not all used equally. In regard to children's grade at the time the parents completed the survey, 85.05% of children were reported being school-age children, with the remaining 14.95% being non-school-age children.

Table 2

Demographic Characteristics of Children

Characteristic	Number and Percentage
Child's hearing status (N = 154)	
Deaf	64 (41.56%)
Hard of hearing	90 (58.44%)
Child's gender (N = 153)	
Male	96 (62.75%)
Female	57 (37.25%)
Child's age when identified as deaf or hard of hearing (N = 151)	
Birth to 6 months	53 (35.09%)
7-18 months	49 (32.45%)
19-48 months	37 (24.5%)
>48 months	12 (7.96%)
Degree of hearing loss of children (N = 153)	
Mild (20-40dBHL)	10 (6.53%)
Moderate (40-70dBHL)	17 (11.11%)
Severe (70-90dBHL)	47 (30.71%)
Profound (90+dBHL)	60 (39.21%)
Do not know	19 (12.44%)
Hearing device (N = 153)	
Hearing aids	54 (35.29%)
Cochlear implant	73 (47.71%)
No use of hearing device	26 (17%)
Child's communication way at home (N = 154)	
Sign language	20 (12.98%)
Spoken language	59 (38.31%)
Sign and spoken language	61 (39.61%)
Other	14 (9.10%)
Child's grade (N = 154)	
Kindergarten	40 (25.97%)
Elementary school	53 (34.41%)
Middle school	8 (5.19%)
High school	15 (9.74%)
University	15 (9.74%)
Other	23 (14.95%)

Research Questions

Research Question 1

The first research question asked:

> Q1 What types of services are being received and would like to receive by Saudi parents of children who are deaf or hard of hearing (DHH) in Kingdom of Saudi Arabia?

In order to answer the first question, descriptive statistics were used to describe which services are most frequently received by participants in the study. The frequency and percentage of services received by parents for their children who are DHH are presented in the results. Table 3 shows that 45.6% of parents reported receiving early identification services for their children who are DHH in Saudi Arabia. However, 51% of parents said that they did not receive early identification services for their children who are DHH. This result shows that early identification services were not available for more than half of the participants.

Table 3

Responses by Parents Regarding Type of Services Provided for Child Who is Deaf and Hard of Hearing

Type of Services Provided for Child Who is DHH	Is/Was This Service Available?	Frequency	Percent
Early identification services	Yes	72	45.6%
	No	81	51.3%
	Don’t know/not sure	0	0%
	Total	153	96.8%
	Missing	5	3.2%
	Total	158	100%
Hearing technology services	Yes	94	59.5%
	No	59	37.3%
	Don’t know/not Sure	0	0%
	Total	153	96.8%
	Missing	5	3.2%
	Total	158	100%
Communication services	Yes	52	32.9%
	No	98	62%
	Don’t know/not Sure	1	0.6%
	Total	151	95.6%
	Missing	7	4.4%
	Total	158	100%
Educational options services	Yes	45	28.5%
	No	106	67.1%
	Don’t know/not Sure	0	0%
	Total	151	95.6%
	Missing	7	4.4%
	Total	158	100%
Social support services	Yes	40	25.3%
	No	113	71.5%
	Don’t know/not Sure	1	0.6%
	Total	154	97.5%
	Missing	4	2.5%
	Total	158	100%

Furthermore, the output shows the majority of Saudi parents (59.5%) with children who are DHH reported that hearing technology services were available for their children who are DHH in Saudi Arabia. However, more than one-third of parents (37.3%) reported that they did not receive hearing technology services for their children who are DHH. This result demonstrates that hearing technology services were still not available for some parents of children who are DHH.

Regarding the descriptive data collected on communication, educational services, and social support services, most parents indicated that these services were not available for their children who are DHH (i.e., 62% for communication services, 67.1% for educational services, and 71.5% for social support services). However, approximately one-third of the participants reported that they received these services for their children who are DHH (i.e., 32.9% for communication services, 28.5% for educational options services, and 25.3% for social support services). Additionally, few participants (.6%) knew or were not sure if social support and communication services were available.

Overall, based on the descriptive analysis, the results for this study showed that all five types of services for children who are DHH and their parents were available in KSA. However, these results indicated that these services were not available for more than half of the participants, even though they were being received by some participants of children who are DHH in KSA.

Research Question 2

The second research question asked:

> Q2 How satisfied are the Saudi parents of children who are DHH regarding the services received?

Parent satisfaction is displayed in Figure 1.

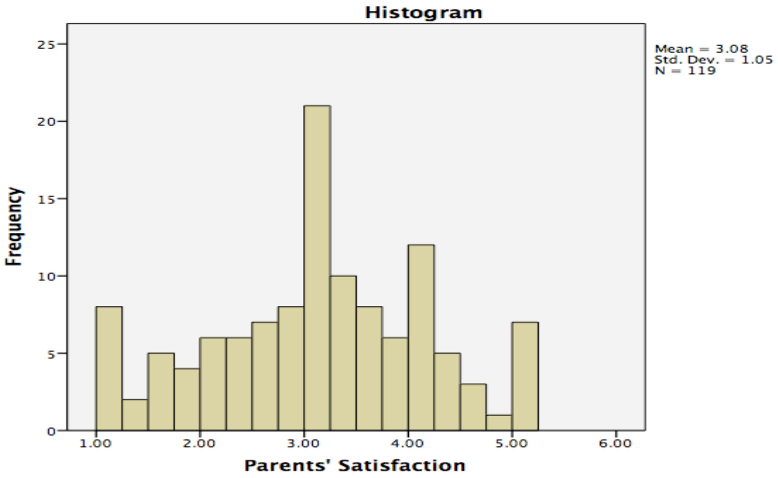

Figure 1. Parent satisfaction.

In the second research question, the researcher was interested in examining participants' level of satisfaction towards the services received, using the 5-point Likert-scale (1 = very dissatisfied to 5 = very satisfied). Descriptive statistics were used, which include means and standard deviations of all of the items in each service (average) and inference about the population means satisfaction for each item in the service. The satisfaction section in the survey included 25 items that measure parents' satisfaction with the received services. The parents' satisfaction divided the parents' responses into three satisfaction levels: (a) high satisfaction level with a range of 3.67-5.00; (b) average satisfaction level with a range of 2.34-3.66; and (c) low satisfaction level with a range of 1-2.33 (Jabery et al., 2014). Therefore, the mean of parents' satisfaction with early identification service items was 3.19 (SD = 1.27; range 3.01-3.36), reflecting a slight average degree of satisfaction. Also, the mean of parents' satisfaction with hearing technology service items was 3.27 (SD = 1.30; range 2.97-3.66), reflecting a slight average degree of satisfaction. Similarly, the mean of parents' satisfaction with communication service items was 3.32 (SD = 1.37; range 3.10-3.52), reflecting a slight average degree of satisfaction. Likewise, the mean of parents' satisfaction with educational options service items was 2.94 (SD = 1.43; range 2.74-3.05), reflecting a slight average degree of satisfaction.

Moreover, the mean of parents' satisfaction with social support services items was 3.01(SD = 1.36; range 2.84-3.24), reflecting a slight average degree of satisfaction. Finally, the overall mean of parents' satisfaction with all services items was 3.14 (SD = 1.34; range 2.74-3.66), reflecting a slight average degree of satisfaction. Table 4 illustrates parental satisfaction with services provided.

Table 4

Parent's Level of Satisfaction Regarding Services Received (Ranked by Means: Highest-Lowest)

Survey Item	Mean	SD	Response	NA*	Satisfaction Level
Early identification services:					
Early access to hearing diagnosis service	3.32	1.251	71	87	Average
Process of the hearing of diagnosis	3.36	1.228	70	88	Average
Follow- up services with professionals as needed	3.12	1.266	72	86	Average
Communication regarding services	3.25	1.273	71	87	Average
Written information provided by the provider	3.08	1.275	72	86	Average
Flexibility in terms of time for meeting with professionals	3.01	1.378	71	87	Average
Hearing technology services:					
Hearing aids	3.25	1.216	7100	87	Average
Cochlear implant	3.66	1.417	64	94	Average
The professional allowed me to make my own decisions regarding the type of hearing technology that would like for my child.	3.23	1.245	77	81	Average
Training you on how to manage the child's device at home	2.97	1.341	86	72	Average
Communication services:					
Information service about different communication methods for children who are DHH.	3.40	1.333	48	110	Average
The professionals allowed me to make decisions regarding the communication method for my child	3.52	1.260	46	112	Average
The professionals give advice on the communication method that I chose for my child	3.40	1.421	45	113	Average
Training service on communication with child who is DHH	3.20	1.471	45	113	Average
Training service on sign language	3.10	1.411	41	117	Average
Educational services:					
Information about the availability of programs and services	3.02	1.357	45	113	Average
Guiding family about availability of educational options locally	2.74	1.465	43	115	Average
Information service about eligibility for programs and services	3.05	1.511	43	115	Average
Decision-making service regarding my education placement	2.98	1.388	42	116	Average

Table 4 (continued)

Survey Item	Mean	SD	Response	NA*	Satisfaction Level
Emotional services:					
Emotional support from service professionals	2.91	1.311	34	124	Average
Listen to your needs and challenges of my child.	2.91	1.357	34	124	Average
Professionals provide resources and information regarding our needs.	2.97	1.425	34	124	Average
The professionals cooperate effectively with family	2.84	1.293	31	127	Average
Introducing you to other family with children who are DHH	3.23	1.407	31	127	Average
Provide access to adults who are DHH for mentoring	3.24	1.393	33	125	Average

Note: Likert ratings were given values ranging from 1 to 5 corresponding to ‘‘not very satisfied’’ to ‘‘very satisfied,’’ respectively; means are based on these values. *Not Applicable 1

Table 5 illustrates Test of Normality data for parents’ satisfaction by region.

Table 5

Test of Normality Data for Parents’ Satisfaction by Region

Test by Region	Statistic	df	Sig.
Kolmogorov-Smirnov*			
Large	.067	82	.200**
Village	.255	7	.189
Small	.106	29	.200**
Shapiro-Wilk			
Large	.973	82	.081
Village	.921	7	.476
Small	.956	29	.260

*Lilliefors Significance Correction; **lower bound of the true significance.

Additionally, a one-way ANOVA was conducted to determine if the parents’ level of satisfaction regarding the services and support was different based on the region where parents live. Participants were classified into three groups: parents with children who live in a village (*n* = 7), parents of children who live in a small city (*n* = 29), and parents of children who live in a large city ($n = 82$). There were no outliers, as assessed by boxplot; data were normally distributed for each group, as assessed by Shapiro-Wilk test ($p > .05$); and there was homogeneity of variances, as assessed by Levene's test of homogeneity of variances ($p = .81$). Data are presented as mean ± standard deviation.

Table 6

Mean and Standard Deviation by Region for Parents' Level of Satisfaction

					95% Confidence Interval for Mean			
Region	N	Mean	SD	Std. Error	Lower Bound	Upper Bound	Minimum	Maximum
Large	82	3.0166	1.06342	.11744	2.7830	3.2503	1.00	5.00
Village	7	2.8980	1.00694	.38059	1.9667	3.8292	1.00	4.19
Small	29	3.3420	1.02706	.19072	2.9514	3.7327	1.00	5.00
Total	118	3.0896	1.05313	.09695	2.8976	3.2816	1.00	5.00

The result showed that parents' level of satisfaction of services and support for their children who are DHH was not statistically significantly different among these three groups of regions, $F(1,14) = 8.316$, $p > 0.32$. Parents' satisfaction score increased from the village ($M = 2.89$, $SD = 1.00$), to the large city ($M = 3.01$, $SD = 1.06$), and the small city ($M = 3.34$, $SD = 1.02$), in that order. Tukey post hoc analysis revealed that there were not statistically significant differences between the parents' level of satisfaction and the regions.

Table 7

One-Way ANOVA for Parents' Level of Satisfaction by Region

Level of Satisfaction	Sum of Squares	df	Mean Square	F	Sig.
Between groups	2.542	2	1.271	1.149	.321
Within groups	127.220	115	1.106		
Total	129.762	117			

Table 8

Multiple Comparisons of Region with Parents' Level of Satisfaction

(I) Region	(J) Region0	Mean Diff (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Large city	Village	.11865	.41416	.956	-.8647	1.1021
	Small city	-.32543	.22724	.328	-.8650	.2141
Village	Large city	-.11865	.41416	.956	-1.1021	.8647
	Small city	-.44409	.44293	.577	-1.4958	.6076
Small city	Large city	.32543	.22724	.328	-.2141	.8650
	Village	.44409	.44293	.577	-.6076	1.4958

Research Question 3

The third research question asked:

Q3 What are the most needed services perceived by parents with children who are DHH in the Kingdom of Saudi Arabia?

In the third research question, the researcher was interested in determining which services are needed the most by parents of children who are DHH using the 5-point

Likert scale (1 = unimportant to 5 = very important). Descriptive statistics, such as the percentages, means, and standard deviations, were used to answer this research question.

Based on descriptive analysis, all aspects of services, including the aspects of early identification services, hearing technology services, communication services, educational services, and social support services in the survey were rated as very important or important by 75% or more of the parents of children who are DHH, with little variation in the distribution of ratings. All of the average rating scores for aspects of early identification services, hearing technology services, communication services, educational services, and social support services were high, with average numeric ratings from 3.64 to 4.36 on the 5-point scale. However, the majority of parents expressed their most needed services for early identification service (60%), hearing technology service (60%), and educational services (51.1%). However, communication and social support services obtained the lowest percentages and rating average. For example, the highest percentage of communication services was 41.7%, with the lowest mean rating of 3.64. Similarly, the highest percentage of social support services was 38.9%, with the lowest mean rating of 3.72.

Furthermore, among the early identification services, around 60.3% of parents believed that the process of hearing diagnosis is the most needed service in early access to early identification services. However, the lowest percentage, written information provided by the professionals (47.9%), was far behind the next lowest percentage: communication regarding the services (53.4%).

Moreover, approximately 60% of parents think that providing them with choices of hearing technology devices and training them on how to manage the child's device at home is the most important service among hearing technology services. Interestingly, hearing aids service had the lowest percentage (54.5%), far behind the next lowest percentage: cochlear implant (58.7%).

Nevertheless, about half of the parents responded that most aspects of educational services were needed: (a) information about the availability of programs and services (50%); (b) guiding families about the availability of educational options locally (50%); and (c) decision-making services regarding the education placement for children who are DHH (51.1%).

Although, parents reported that communication services are less needed, compared with other services, 40% of parents considered two communication services important: (a) training services in communication with a child who is DHH, and (b) allowing parents to make decisions regarding communication. Similarly, there were three aspects of social support services that 38.9% of parents rated very important, even though social support services were considered less needed compared with other services: (a) emotional support from service professionals, (b) professionals provide resources and information regarding our needs, and (c) professionals cooperate effectively with the family. A complete listing of the percentages and distribution of the most needed services ratings is provided in Table 9.

Table 9

Ratings of Parents' Most Needed Services for Children Who are Deaf and Hard of Hearing in Saudi Arabia (Distribution, Percentage)

	Rating							
Service	Very Important	Important	Somewhat Important	Somewhat Unimportant	Unimportant	NA*	Total N	Avg. Rating (1-5)
Early identification service								
Early access to early identification	45(58.9%)	17(23.3%)	6(8.2%)	4(5.5%)	3(4.1%)	85(53.8%)	158	4.27
Process of the hearing diagnosis	44(60.3%)	16(21.9%)	5(3.2%)	4(5.5%)	4(5.5%)	85(53.8%)	158	4.26
Follow-up services with professionals needed	43(58.9%)	17(23.3%)	7(9.6%)	3(4.1%)	3(4.1%)	85(53.8%)	158	4.29
Communication regarding services	39(53.4%)	24(32.9%)	5(6.8%)	3(4.1%)	2(2.7%)	85(53.8%)	158	4.30
Written information provided by provider	35(47.9%)	26(35.6%)	8(11.0%)	2(2.7%)	2(2.7%)	85(53.8%)	158	4.23
Flexibility in terms of time for meeting with professionals	42(57.5%)	21(28.8%)	6(8.2%)	2(2.7%)	2(2.7%)	85(53.8%)	158	4.36
Hearing technology service								
Hearing aids	42(54.5%)	23(29.9%)	6(7.8%)	2(2.6%)	4(5.2%)	81(51.3%)	158	4.26
Cochlear implant	44(58.7%)	17(22.7%)	7(9.3%)	2(2.7%)	5(6.7%)	83(52.5%)	158	4.24
Professional allowed me to make my own decisions regarding the type of hearing technology that I would like for my child	52(59.1%)	22(25.0%)	8(9.1%)	3(3.4%)	3(3.4%)	70(44.3%)	158	4.33
Training you on how to manage the child's device at home	53(60.0%)	18(20.5%)	8(9.1%)	3(3.4%)	6(6.8%)	70(44.3%)	158	4.24

Table 9 (continued)

Service	Rating						Total N	Avg. Rating (1-5)
	Very Important	Important	Somewhat Important	Somewhat Unimportant	Unimportant	NA*		
Communication services								
Information service about different communication methods for children who are DHH	18(36.7%)	21(42.9%)	5(10.2%)	2(4.1%)	3(6.1%)	109(69.0%)	158	4.00
The professionals allowed me to make decisions regarding the communication method for my child	20(41.7%)	16(33.3%)	6(12.5%)	2(4.2%)	4(8.3%)	110(69.6%)	158	3.96
The professionals give advice on the communication method that I chose for my child	18(37.5%)	19(39.6%)	4(8.3%)	5(10.4%)	2(4.2%)	110(69.6%)	158	3.96
Training service on communication with child who is DHH	19(40.4%)	16(34.0%)	5(10.6%)	4(8.5%)	3(6.4%)	111(70.3%)	158	3.94
Training service on sign language	16(34.0%)	15(31.9%)	7(14.9%)	1(2.1%)	8(17.0%)	111(70.3%)	158	3.64
Educational services								
Information about the availability of programs and services	23(50.0%)	12(26.1%)	7(15.2%)	1(2.2%)	3(6.5%)	112(70.9%)	158	4.11
Guiding family about availability of educational options locally	22(50.0%)	13(29.5%)	6(13.6%)	3(6.8%)	0(0%)	114(72.2%)	158	4.23
Information service about eligibility for programs and services	21(48.8%)	12(27.9%)	6(14.0%)	3(7.0%)	1(2.3%)	115(72.8%)	158	4.14
Decision-making service regarding my education placement	23(51.1%)	12(26.7%)	6(13.3%)	3(6.7%)	1(2.2%)	113(71.5%)	158	4.18

Table 9 (continued)

Service	Rating Very Important	Important	Somewhat Important	Somewhat Unimportant	Unimportant	NA*	Total N	Avg. Rating (1-5)
Social support services								
Emotional support from service professionals	14(38.9%)	12(33.3%)	5(13.9%)	4(11.1%)	1(2.8%)	122(77.2%)	158	3.94
Listen to your needs and challenges of my child	13(36.1%)	11(30.6%)	5(13.9%)	6(16.7%)	1(2.8%)	122(77.2%)	158	3.81
Professionals provide resources and information regarding our needs	14(38.9%)	9(25.0%)	5(13.9%)	5(13.9%)	3(8.3%)	122(77.2%)	158	3.72
The professionals cooperate effectively with family	14(38.9%)	10(27.8%)	5(13.9%)	4(11.1%)	3(8.3%)	122(77.2%)	158	3.78
Introducing you to other family with children who are DHH	12(33.3%)	13(36.1%)	5(13.9%)	3(8.3%)	3(8.3%)	122(77.2%)	158	3.78
Provide access to adults who are DHH for mentoring	12(33.3%)	11(30.6%)	7(19.4%)	4(11.1%)	2(5.6%)	122(77.2%)	158	3.75

Note. Early identification services (average for *very important*--56.15%, n = 41) (average for *important*--27.63%, n = 20), overall average (83.78%, n = 61); hearing technology services (average for *very important*--58.07%, n = 48), (average for *important*--24.52%, n = 20), overall average (82.59%, n = 68); communication services (average for *very important*--38.06%, n = 19), (average for *important*--36.34%, n = 17.4), overall average (74.4%, n =3 6); educational services (average for *very important*--49.97%, n = 22.25), (average for *important*--27.55%, n = 12.25), overall average (77.52%, n = 34); social support services (average for *very important*--36.56%, n = 13.16), (average for *important*-- 30.56%, n = 11), overall average (67.12%, n = 24).
*Not applicable.

Research Question 4

The fourth research question asked:

> Q4 Is there any relationship between the child's characteristics and parents' level of satisfaction in the Kingdom of Saudi Arabia?

For the fourth research question, the researcher was interested in examining the relationship between the child's gender and hearing status on the parents' satisfaction level of services and support for their children who are DHH. A two-way ANOVA was conducted to examine the effects of the child's gender and hearing status on the parents' satisfaction level of services and support. Residual analysis was performed to test for the assumptions of the two-way ANOVA. Outliers were assessed by inspection of a boxplot, normality was assessed using Skewness and Kurtosis, and homogeneity of variances was assessed by Levene's test.

There were no outliers, residuals were normally distributed as assessed by Skewness and Kurtosis, and there was homogeneity of variances ($p = .537$). The interaction effect between gender and the child's hearing status in the parents' satisfaction level of services and support was not statistically significant, $F(1,114) = .155$, $p = .695$, partial $\eta^2 = .001$. Therefore, an analysis of the main effect for hearing status was performed, which indicated that the main effect was not statistically significant, $F(1,114) = 2,25$, $p < .136$, partial $\eta^2 = .019$. Similarly, an analysis of the main effect for gender was performed, which indicated that the main effect was not statistically significant, $F(1,114) =.474$, $p < .492$, partial $\eta^2 = .004$.

All pairwise comparisons were run and reported with 95% confidence intervals, and *p*-values were Bonferroni-adjusted. The unweighted marginal means of "Parents'

Satisfaction" scores for deaf and hard of hearing were 1.32 (*SE* = .05) and 1.43 (*SE* = .046), respectively.

Also, the unweighted marginal means of "Parents' Satisfaction" scores for males and females were 1.40 (*SE* = .04) and 1.35 (*SE* = .057), respectively. Overall, there is no statistically significant relationship between the child's gender and hearing status in the parents' level of satisfaction of services and supports for their children who DHH. These results are illustrated in Table 10.

Table 10

Two-way ANOVA for Parents' Satisfaction by Child's Gender and Hearing Status

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected model	.360[a]	3	.120	.881	.453	.023
Intercept	203.256	1	203.256	1490.036	.000	.929
Child's hearing status	.307	1	.307	2.253	.136	.019
Child's gender	.065	1	.065	.474	.492	.004
Child hearing status* child's gender	.021	1	.021	.155	.695	.001
Error	15.551	114	.136			
Total	245.569	118				
Corrected total	15.911	117				

[a] R^2 = .023 (adjusted R^2 = -.003).

Research Question 5

The fifth research question asked:

Q5 Is there any relationship between the child's characteristics and the importance of services to parents in the Kingdom of Saudi Arabia?

For the fifth research question, the researcher was interested in examining the relationship between the child's gender and hearing status in the importance of services to parents with children who are DHH in the Kingdom of Saudi Arabia. A two-way ANOVA was conducted to examine the effects of gender and children's hearing status on the importance of services to parents. Residual analysis was performed to test for the assumptions of the two-way ANOVA. Outliers were assessed by inspection of a boxplot, normality was assessed using Skewness and Kurtosis, and homogeneity of variances was assessed by Levene's test. There were no outliers, residuals were normally distributed as assessed by Skewness and Kurtosis, and there was homogeneity of variances ($p = 1.00$).

The interaction effect between gender and the child's hearing status in the importance of services to parents was not statistically significant, $F(1,112) = .852$, $p = .358$, partial $\eta^2 = .008$. Therefore, an analysis of the main effect for hearing status was performed, which indicated that the main effect was not statistically significant, $F(1,112) = .801$, $p < .373$, partial $\eta^2 = .007$. Similarly, an analysis of the main effect for gender was performed, which indicated that the main effect was not statistically significant, $F(1,112) = .151$, $p < .698$, partial $\eta^2 = .001$.

All pairwise comparisons were run and reported with 95% confidence intervals, and *p*-values were Bonferroni-adjusted. The unweighted marginal means of the importance of services to parents' scores for the child's hearing status deaf and hard of hearing were 1.56 (*SE* = .042) and 1.61 (*SE* = .035), respectively. In addition, the unweighted marginal means of the importance of services to parents' scores for child's gender were 1.60 (*SE* = .033) and 1.57 (*SE* = .044), respectively.

Overall, there is no statistically significant relationship between children's characteristics (gender and hearing status) and parents' level of importance of services and support for their children who are DHH. These results are illustrated in Table 11.

Table 11

Two-way ANOVA for Importance of Services to Parents by Child's Gender and Hearing Status

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected model	.105[a]	3	.035	.446	.720	.012
Intercept	291.986	1	261.986	3352.609	.000	.968
Child's hearing status	.063	1	.063	.801	.373	.007
Child's gender	.012	1	.012	.151	.698	.001
Child hearing state*	.067	1	.067	.852	.358	.008
Error	8.752	112	.078			
Total	304.337	116				
Corrected total	8.857	115				

[a] R^2 = .012 (adjusted R^2 = -.015).

Open-Ended Question about Additional Desired Parent Support

Written comments by parents on an open-ended question regarding additional desired support was requested. Only a few comments were collected from the open-ended question in the survey. They were then translated from Arabic to English. After that, each comment was assigned to a specific category of services, including early identification, hearing technology, communication, educational options, social support, and more support and centers, as guidelines (Marshall & Rossman, 1999), and a code for each category of service was created as recommended in order to organize the data

(Glesne, 1999). Table 12 presents a complete listing of the related categories and numerical coding.

Table 12

Comments in Open-ended Question about Additional Desired Parents' Support

Services	Number of Occurrences
Early identification services (EI)	
Not enough support for DHH children after identification.	2
No accurate diagnosis for children who are hard of hearing.	1
Hearing technology (HT)	
Need cochlear implant association that involves professionals and parents.	1
Need more support in schools for children who have a cochlear implant.	1
Need hearing centers with adequate professionals	1
Need more support and training on how to convince our child to keep wearing his hearing aids	1
Communication services (CS)	1
Need flexible schedule with speech pathologists	1
Need speech centers with adequate professionals	5
Educational option services (EO)	
Educational services are still weak	1
Parents do not have support in education and services.	1
Need more information and guidelines for appropriate education placement for our child	1
Social support services (SS)	
Need more support to integrate DHH in hearing society	1
Social support services are very weak	1
More support and centers (SC)	
Need more support in all aspects of services	6
Need more rehabilitation centers	1
No specialized center for DHH	1
No support for children who are hard of hearing and their parents."	1

Regarding the identification and diagnosis themes, parents complained about the services. For example, parents commented that there was "not enough support for DHH children after identification" and "no accurate diagnosis for children who are hard of hearing."

Regarding the hearing technology services, parents' comments mentioned a desire for a "cochlear implant association that involves professionals and parents," "more support and training on how to convince our child to keep wearing his hearing aids," and "more support in school for children who have a cochlear implant." Importantly, one parent suggested the need for "hearing centers with adequate professionals." Furthermore, other parents identified specific needs in communication services, such as "need more professionals in speech pathology" and "need flexible schedule with speech pathologists."

In educational services, one parent complained that "parents do not have support in education and services." Another one expressed the notion that "educational services are still weak." Importantly, parents asked for "more information and guidelines for appropriate education placement for our child." Similarly, parents were not satisfied with social support services. As one stated, "Social support services are very lack."

Nevertheless, parents wrote about the importance of establishing more specialized centers and community-based support. As they stated, "no specialized center for DHH," "not enough speech pathology centers," "need more rehabilitation centers," "need hearing centers," and "need more support to integrate DHH in hearing society". Additional comments expressed a desire for having adequate numbers of professionals who are highly trained. For example, several parents' comments were "need hearing centers with adequate professionals" and "need speech centers with adequate professionals." Finally, parents' written comments across a variety of services highlighted the desire for more support such as "need more support in all the aspects of services" and "no support for children who are hard of hearing and their parents."

CHAPTER V

DISCUSSION

This chapter includes information on the discussion of the findings of this study and their relevance to previous literature. In addition, it includes a discussion on limitations of the study and, finally, implications and recommendations for future research.

Many of the studies reviewed showed the positive impact of parents' roles in the growth and development of children and youth who are DHH (Hadjikakou & Nikoklaraizi, 2008; Mitchell & Karchmer, 2004a), interaction (Berke, 2013; Cramer-Wolrath, 2011), and language development (Bailes et al., 2009; Holt & Svirsky, 2008; Niparko et al., 2010). Also, parents' perceptions regarding the services and programs for their children who are DHH is considered beneficial since parents are capable of determining the effectiveness and the suitability of the services and programs for their children who are DHH (Levesque et al., 2014; Sarant & Garrard, 2013; Yoshinaga-Itano, 2004). Therefore, the overarching purpose of this study was to investigate the needs and perceptions of parents of children who are DHH in regard to the support and services provided in the Kingdom of Saudi Arabia (KSA).

A survey was developed by the researcher to assess Saudi parents' needs and perceptions in regard to the support and services provided in KSA. One hundred fifty-eight Saudi parents of children who are DHH throughout the KSA were surveyed.

Parents were asked to complete the survey. The survey questions were related to parent needs and perceptions in five areas of service: early identification, hearing technology, communication, educational options, and social support.

The findings of this study indicated that all five types of services were reported as being received by some Saudi parents of children who are DHH in KSA. For example, some parents reported that these services were received for their children who are DHH (e.g., 45.6% for early identification services, 59.5% for hearing technology services, 32.9% for communication services, 28.5% for educational options services, and 25.3% for social support services). Consequently, the results of this study demonstrate that all types of services are available and being received by some Saudi parents of children who are DHH in KSA.

Although, these services are being received by parents, most parents of children who are DHH in KSA who participated in this study indicated that they did not receive some of these services. For example, half of the parents (51%) said that they did not receive early identification services for their children who are DHH. In addition, parents' comments in the open-ended questions section expressed "no early identification service was available for my child." These findings are similar to previous studies from Saudi Arabian (Alqahtani, 2015; Yoshinaga-Itano et al., 2000).

Furthermore, the findings of this study indicated that most parents (59.5%) received hearing technology services for their children who are DHH in KSA. However, more than one-third of parents (37.3%) reported that they did not receive hearing technology services for their children who are DHH. Moreover, the majority of parents reported that the communication services, educational services, and social support services were not available for their children who are DHH (i.e., 62% for communication services, 67.1% for educational services, and 71.5% for social support services). Therefore, these results indicate that these types of services are still not provided for all parents of children who are DHH in KSA.

Two possible explanations might be assumed regarding the absence of these services for many children who are DHH and their parents in KSA. First, because these services are limited to a certain region and medical cities such as King Faisal Medical City in Riyadh, King Fahd Medical City in Jeddah (western region), and Al-Kober Hospitals and AL-Dammam Hospital in the eastern region (Al-Jifery, 2007; King Abdulaziz Medical City, 2012), this may deprive many children and their parents of the potential benefits of these services in Saudi Arabia if the families live far away from where the services are provided. Secondly, Saudi parents with children who are DHH may not know about the existence of services because parents left the hospital without any resources or information regarding these services (Alqahtani, 2015). As a result, more research investigating the appropriateness and availability of these services for parents and children who are DHH must be conducted within the field of deaf education in KSA.

Parents' satisfaction with each service was slightly on the average level of satisfaction. The mean of parents' satisfaction with services at the time of this study was 3.14 (SD = 1.34 satisfied; range 2.74-3.66). However, an examination of the overall results indicates that parents were neither dissatisfied or satisfied (mean = 3.08; SD = 1.05) on most items on the survey. However, it is important to note that there were quite a few parents who were very dissatisfied or dissatisfied as well as many who were satisfied or very satisfied. Furthermore, parents were less satisfied with items that targeted educational options and social support services. For example, educational options was 2.94 (SD = 1.43) and social support was 3.01 (SD = 1.36; range 2.84-3.24) compared with the other services items. This finding of low mean rankings for education and social support services, in particular, was also of interest and may warrant further investigation into why Saudi parents assigned low rankings on educational and social services. Additionally, parents' comments in the open-ended question section indicated that parents were less satisfied with educational option services and social support services. For example, parents stated that educational and social support services still lack sufficient resources and information, even though informational resources were the top-ranked sources of support that parents need. Compatible with this finding, this lack of support in sources and information is consistent with results from several studies that have shown such sources and information may not be provided to parents (Eleweke et al., 2008; Jackson, 2011; Jamieson & Zaidman, 2011; Porter & Edirippulige, 2007). Therefore, this concern can be addressed by providing parents with guidance, adequate quality of information, and consultation services because limitations of support and services could influence parents' decisions and roles regarding their children's needs (Zaidman-Zait, & Jamieson, 2004).

Furthermore, this study also found that some parents who have received early identification services, hearing technology services, and communication services complained about them, even though the parents' overall satisfaction regarding these services was on average. For example, the finding indicated that some parents did not receive enough support after early identification of the hearing loss with their children who are DHH. In addition, this finding of the study pointed out that some parents were not satisfied with the diagnosis of early identification of their children who are DHH. These results are similar to the findings of Yoshinaga-Itano and her colleague's study (2000) that some children who are DHH are overlooked by inadequate audiological assessments. Moreover, the findings indicated that parents were dissatisfied with some hearing technology and communication services. For example, one parent wrote "no audiologist in my area." The results in this study are consistent with the findings of previous studies that parents of children who are DHH have less access to these services and more dissatisfaction with specialists (Compton et al., 2009; Geers & Brenner, 2003; Munoz et al., 2013; Munoz et al., 2012; Zaidman-Zait, 2008). Consequently, these findings of the lack of services and support affect are seen as a major issue connected to Saudi parents' level of satisfaction.

The findings of this study showed no statistically significant difference between the regions of the parents on the parents' level of satisfaction of services and support for their children who are DHH. Similarly, the findings of this study demonstrated no statistically significant relationship between the child's gender and hearing status on the parents' level of satisfaction of services and support for their children who are DHH because there may be limitations in the sample size or lack of parents' knowledge to confirm children's level of hearing status.

Regarding the most needed services perceived by parents of children who are DHH in the Kingdom of Saudi Arabia, the majority of parents in this study rated most of the items that focused on early identification services, hearing technology services, communication services, educational services, and social support services as very important or important. This means all aspects of these services on the survey were reported to be the most needed services perceived by parents with children who are DHH in the KSA. Indeed, it was expected that the majority of participants in this study would report these services as the most needed services because these services were identified within the literature in deaf education as major services that parents with children who are DHH needed (Archbold et al., 2002; Davila, 2004; DesGeorges, 2003; Hyde & Punch, 2011; Jackson, 2011; Jamieson & Zaidman, 2011; Luterman & Lurtzer-White, 1999; Meadow-Orlans et al., 2003; Most & Zaidman- Zait, 2003; Nunez & Ceh, 2001; Quittner et al., 2010).

Interestingly, the findings of this study showed communication services and social support services obtained the lowest rating with items that targeted the most needed services perceived by parents compared with other services in this study. A possible explanation of this finding is that parents may feel that communication services and social support services are less important than other services of support. In addition, this result suggests that the early identification services, hearing technology services, and educational options services should currently be given priority from the government and other stakeholders to better serve the children who are DHH and their parents.

Although parents reported that communication services are a less needed service compared with other services, parents ranked two services within communication services as the most needed services: (a) training parents in communication with a child who is DHH, and (b) allowing parents to make decisions regarding the communication. These needs are similar to the findings reported in other studies (e.g., Jackson et al., 2008; Young, 2002) that parents did not have enough support and training in communication, and their role in the process of determining communication options is not yet widely appreciated (Alqahtani, 2015). This is evidence that Saudi parents need more support in all aspects of communication services, especially training in communication and decision-making regarding the communication.

The results of this study also showed three aspect of social support service ranked as the most needed services perceived by Saudi parents in the KSA, even though social support services were considered less needed services compared with other services: (a) emotional support from service professionals, (b) professionals provide resources and information regarding our needs, and (c) professionals cooperate effectively with the family. Consistent with these findings, several studies have shown that parents need to receive social-emotional support from professionals at different stages (Hardonk et al., 2011; Mikkelsen et al., 2001; Most & Zaidman-Zait, 2003), for enhanced cooperation between advisers (Mikkelsen et al., 2001), and resources and information regarding their need (Most & Zaidman-Zait, 2003). Hence, these findings demonstrate that various aspects of social support are still needed for Saudi parents of children who are DHH, including their need to obtain information and support from professionals.

Importantly, within the parents' comments in the open-ended question section, parents frequently asked for more support information and guidelines for appropriate services for children who are DHH as well as adequate and qualified specialists. It is interesting to note the similarities found between the desire for needed services mentioned by parents in this study and the recommendations by DesGeorges (2003). DesGeorges recommended that parents desire better understanding and accurate information, sensitivity to complex decisions, and professionals who are more knowledgeable about deafness. Consequently, Saudi parents with children who are DHH still need to be provided with adequate quality of information, consultation, qualified specialists, and support services because the limitations of support and services could influence parents' decisions and roles regarding their children's needs and development.

Although early identification services, hearing technology services, communication services, educational option services, and social support services appear to be important domains for Saudi parents, this does not imply that the survey of Saudi parents' needs in deaf education and services consisted of an exhaustive list including all aspects of parents' needs and support. For instance, parents' written comments mentioned a desire for establishing a cochlear implant association that involves professionals and parents with children who are DHH. This finding highlights the parents' need for representation of their voices and opinions in the planning and provision of these services for their children who are DHH. Also, it indicates the willingness of parents to collaborate and work with professionals in developing the service delivery system for their children who are DHH.

Moreover, most parents' comments across a variety of services highlighted the importance of establishing more specialized centers and community-based support. A possible explanation is that what parents need may be a unified and governmental effort to provide, organize, and monitor such types of important services to better serve the parents and their children who are DHH.

Nevertheless, the researcher was interested in exploring if there was a relationship between children's characteristics (i.e., gender and hearing status) in the importance of services to parents with children who are DHH in the KSA. Indeed, there was no statistically significant relationship between children's characteristics and the importance of services to parents with children who are DHH in the KSA. This research shows that all parents of both deaf and hard of hearing children, both male and female, desired the same services for their children. Therefore, the findings of this study might be might be attributed to the unequal distribution of participants, thus implying a possible lack of variability across parents' responses. Given this result, more study investigating the effects of these factors in the importance of services to parents with children who are DHH must be conducted within the field of deaf education in KSA.

Implications

The results of this dissertation study highlight some possible implications regarding the services and support for children who are DHH and their parents in KSA. Many of these possible implications are consistent with topics identified in the literature review. First, model programs are needed to identify and connect parents of children who are DHH with other parents and with available services across the KSA. Second, the results of this study emphasized the necessity for immediately increasing professional availability in the services and needs of children who are DHH. Therefore, what is needed is to increase parents' involvement in services and support for children who are DHH. Furthermore, it is recommended to establish family-centered practices in order to provide parents of children who are DHH with information, resources, and training about their children's needs and services. The final implication is directed toward the government and other stakeholders in Saudi Arabia to provide and organize all aspects of services for children who are DHH. This can occur by establishing an early intervention system and program that will assist in introducing a comprehensive service delivery system.

Limitations

It is important to mention that this dissertation study had limitations. The first limitation of this study was that the deaf organizations and centers who helped distribute the survey may not have been known by other parents. Consequently, it is clear that more research about parents' needs and support in KSA must be conducted.

Second, the survey used in collecting the data in the present study was not formally field-tested in a large-scale national study. Also, the nature of the survey design did not have space for views and options within each service, which might allow parents to add suggestions for improving each service or consider new services that were not listed on the survey because this survey did not consist of an exhaustive list that included all aspects of parents' needs and support. In addition, this survey focused only on the parents' (father's or mother's) perceptions, while other family members' perceptions within the same were not solicited; therefore, it cannot be supposed that other family members would have perceptions like those of the study sample.

Third, the proportion and rates of parents' responses were not equivalent across the services in the survey. This is clear when observing the higher numbers of response ratings in early identification services compared to educational services or social support services. This causes the unequal distribution of participants among other variables investigated (e.g., child's degree of hearing loss, child's sensory device, or child's age).

The final limitation was the result from this study indicating that children's gender and hearing status were not found to be significant with parents' satisfaction and the importance of services to parents in the KSA. Therefore, this concern must also be called into question.

Further Research

The results of this dissertation study provide useful information about the needs and perceptions of parents of children who are DHH in regard to the support and services provided in KSA. However, more research is needed in order to obtain a better understanding of parents' needs and perceptions for children who are DHH in KSA. For example, further study is needed to examine Saudi parents' perceptions and satisfaction regarding the support and services for their children who are DHH in KSA because parents' perceptions and satisfaction cannot be generalized only from the findings of this study, and more research investigating parents' perceptions and satisfaction of these services may warrant follow-up in future studies within the field of deaf education in KSA.

Parents of children who are DHH in KSA who participated in this study indicated that they did not receive some important services. Hence, a qualitative study may be needed to investigate in greater detail the topics with which parents are satisfied or dissatisfied.

Furthermore, follow-up studies to identify the reason why the parents gave some services low quality ratings may be beneficial, allowing parents to provide further rationale or explanation for their ratings. Moreover, the results of this dissertation study underscore the need for additional research to investigate the number of specialists, specialist centers, and qualifications of specialists in deaf education in KSA.

Additional research would be the continued development of the survey instrument designed to assess parents' needs and perceptions regarding the services and support for their children who are DHH in KSA. The current survey instrument does not include all aspects of services and support for parents and children who are DHH. Finally, since the results from this dissertation study indicated that children's gender and hearing status were not found to be significant with parents' satisfaction and the importance of services to parents in the KSA, further research is needed to explore other factors such as parents' education and income.

Summary

Through a survey, this study investigated the needs and perceptions of parents of children who are DHH in regard to the support and services provided in Saudi Arabia. The findings indicated that all types of services are available and being received by some Saudi parents of children who are DHH in KSA. However, this finding might indicate that these types of services are not provided for all parents of children who are DHH in KSA. Furthermore, the results of this study also pointed out parents, overall, exhibited an average level of satisfaction towards services and support regarding the services received for their children who are DHH.

Most parents in this study recognized all aspects of services listed as the most needed services for children who are DHH and their parents in KSA. This study also found that children's gender and hearing status were not significant factors in terms of parents' satisfaction and the importance of services to parents in the KSA. Nevertheless, parents in this study expressed some problems and offered some solutions in order to improve the services and support for children who are DHH. This highlights the need to consider parents' views and opinions in the planning and provision of services and support for children who are DHH.

Overall, this study provides the field of deaf education with a new perception and view that currently does not exist in KSA. The findings are valuable in supporting children who are DHH with services that can be helpful for professionals to better serve the parents and their children who are DHH. Hopefully, it will result in increased awareness of the needs of parents and their children who are DHH and provide newly created available resources for professionals and parents alike in KSA.

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APPENDIX A

COVER LETTER FOR PARTICIPATION

UNIVERSITY OF
NORTHERN COLORADO

Dear Parent,

A study is being conducted for my dissertation at the University of Northern Colorado. I am asking you to take part in this study. I am looking at the needs and perceptions of parents of children who are DHH in regard to the support and services provided in Saudi Arabia. For your participation, you will be asked to complete the attached consent form and survey.

Please know your participation is highly valued in learning about the needs and challenges for children who are DHH and their parents in regard to the support and services provided in Saudi Arabia, as very little is known. Please help me learn more about your perceptions of the support and services provided. Just return the completed survey and the signed consent form, using the enclosed self-addressed stamped envelope. Should you have any questions or concerns regarding the consent form or the survey, please feel free to contact me.

I appreciate your willingness to participate in this study.

Sincerely,
Abdulaziz Alqahtani, M.Ed., Deaf Education
Campus Box 141
Special Education Department
College of Education
University of Northern Colorado
Greeley, CO 80639-0139

APPENDIX B

A SURVEY OF SAUDI ARABIAN PARENTS AND THEIR NEEDS IN DEAF EDUCATION AND SERVICES (ENGLISH VERSION)

A Survey of Saudi Arabian Parents and Their Needs in Deaf Education and Services

I: Demographic Characteristics of the Parents:

1.What is your relationship to the child?

○ Father
○ Mother
○ Deaf

2. Indicate your hearing status:

○ Hearing
○ Hard of Hearing
○ Deaf

3. Number of children in your family_________

4. Number of children who are deaf or hard of hearing in your family_____

5. How would describe the area where you live?

○ Large city
○ Suburban
○ Rural
○ Small city
○ Other (please specify)

6. What is the name of your city?__________

7. What is the highest level of formal education you have completed?

○ Did not complete high school
○ High school
○ Some college
○ Completed Bachelor's Degree
○ Some graduate school
○ Completed graduate school (MA or PhD)

8. Do you work?

○ Yes
○ No

9. What are the occupations of the adults who work in your family?_________

10. The economic level of the family:

○ Low class.
○ Middle class.
○ Upper class.

II: Demographic Characteristics of the Children:

11. For your child who is deaf or hard of hearing, please indicate his/her degree of hearing loss:

○ Deaf
○ Hard of Hearing

12 The child’s gender:

○ Male
○ Female

13 At what age was your child identified as deaf or hard of hearing?

○ Birth to 6 months
○ 7-18 months
○ 19-48 months
○ > 48 months

14 Degree of hearing loss of your child who is deaf or hard of hearing:

○ Mild (20-40dBHL)
○ Moderate (40-70dBHL)
○ Severe (70-90dBHL)
○ Profound (90+dBHL)
○ Do not know

15 If your child uses a sensory device or devices, which do they use (you can choose more than one)?

○ Hearing aids.
○ Cochlear implant
○ Other _________

16 Which of the following best represents how your child communicates at home? (Mark all that apply)

○ Sign language only
○ Spoken Language only
○ Spoken language and Sign language together
○ Other _________

17 The grade of each child in your family who is deaf or hard of hearing___

18 Age of each child who is deaf or hard of hearing in your family____

III: Need and Services

Instruction:

If you answer “NO” to the question in part (i) below, skip part (ii), then answer part (iii).

a. Early Identification Services for Deaf/Hard of Hearing in Saudi Arabia

19. Does anyone in your family (both children and/or adults) use identification services for deaf and hard of hearing?

○ Yes
○ No
○ Do not know

If so, please indicate how satisfied you are with the following kinds of deaf and hard of hearing services:

	Very Dissatisfied	Dissatisfied	Neither Satisfied nor Dissatisfied	Satisfied	Very Satisfied	Not Applicable
Early access to hearing diagnosis service.	○	○	○	○	○	○
The diagnosis process.	○	○	○	○	○	○
Follow-up services.	○	○	○	○	○	○
Communication regarding services.	○	○	○	○	○	○
Written information provided by the professionals.	○	○	○	○	○	○
Flexibility of service scheduling.	○	○	○	○	○	○

20.How important is it to you to receive information and support regarding the following kinds of deaf and hard of hearing services?

	Unimportant	Somewhat unimportant	Somewhat Important	Important	Very important
Early access to hearing diagnosis service.	○	○	○	○	○
The diagnosis process.	○	○	○	○	○
Follow-up services.	○	○	○	○	○
Communication regarding services.	○	○	○	○	○
Written information provided by the professionals.	○	○	○	○	○
Flexibility of service scheduling.	○	○	○	○	○

b. Hearing Technology Service:

21. Does anyone in your family use hearing technology services for deaf and hard of hearing?

○ Yes
○ No
○ Do not know

If so, please indicate how satisfied you are with the following kinds of deaf and hard of hearing services:

	Very Dissatisfied	Dissatisfied	Neither Satisfied nor Dissatisfied	Satisfied	Very Satisfied	Not Applicable
Hearing aids.	○	○	○	○	○	○
Cochlear Implant.	○	○	○	○	○	○
The professional allowed me to make my own decisions regarding the type of hearing technology that would like for my child.	○	○	○	○	○	○
Professional helped me how to manage my child device at home	○	○	○	○	○	○

22.How important is it to you to receive information and support regarding the following kinds of deaf and hard of hearing services?

	Unimportant	Somewhat Important	Somewhat Important	Important	Very Important
Hearing aids.	○	○	○	○	○
Cochlear Implant.	○	○	○	○	○
The professional allowed me to make my own decisions regarding the type of hearing technology that would like for my child.	○	○	○	○	○
Professional helped me how to manage my child device at home.	○	○	○	○	○

C. Communication Service:

23. Does anyone in your family get communication services for deaf and hard of hearing?

○ Yes
○ No
○ Do not know

If so, please indicate how satisfied you are with the following kinds of deaf and hard of hearing services:

	Very Dissatisfied	Dissatisfied	Neither Satisfied nor Dissatisfied	Satisfied	Very Satisfied	Not Applicable
Information about different communication methods (e.g., sign language, spoken language, and total communication) for children who are DHH.	○	○	○	○	○	○
The professionals allowed me to make decisions regarding the communication method for my child.	○	○	○	○	○	○
The professionals give advices on communication method that I chose for my child.	○	○	○	○	○	○
Ways to play with my child.	○	○	○	○	○	○
Training service on sign language	○	○	○	○	○	○

24. How important is it to you to receive information and support regarding the following kinds of deaf and hard of hearing services?

	Unimportant	Somewhat Unimportant	Somewhat Important	Important	Very Important
Information about different communication methods (e.g., sign language, spoken language, and total communication) for children who are DHH.	○	○	○	○	○
The professionals allowed me to make decisions regarding the communication method for my child.	○	○	○	○	○
The professionals give advices on communication method that I chose for my child.	○	○	○	○	○
Ways to play with my child.	○	○	○	○	○
Training service on sign language	○	○	○	○	○

d. Educational Options Service:

25. Are Educational Options Service available for deaf and hard of hearing at early age?

○ Yes
○ No
○ Do not know

If so, please indicate how satisfied you are with the following kinds of deaf and hard of hearing services:

	Very Dissatisfied	Dissatisfied	Neither Satisfied nor Dissatisfied	Satisfied	Very Satisfied	Not Applicable
Information about the availability of programs and services for my child.	○	○	○	○	○	○
Information about eligibility for those programs and services.	○	○	○	○	○	○
Availability of educational options locally.	○	○	○	○	○	○
Decision-making regarding my child's education placement.	○	○	○	○	○	○

25. How important is it to you to receive information and support regarding the following kinds of deaf and hard of hearing services?

	Unimportant	Somewhat Unimportant	Somewhat Important	Important	Very Important
Information about the availability of programs and services for my child.	○	○	○	○	○
Information about eligibility for those programs and services.	○	○	○	○	○
Availability of educational options locally.	○	○	○	○	○
Decision-making regarding my child's education placement.	○	○	○	○	○

e. Social Support Services:

26. Are Social Support service for deaf and hard of hearing children and their parents available?

○ Yes

○ No

○ Do not know

If so, please indicate how satisfied you are with the following kinds of deaf and hard of hearing services:

	Very Dissatisfied	Dissatisfied	Neither Satisfied nor Dissatisfied	Satisfied	Very Satisfied
Emotional support from service professionals.	○	○	○	○	○
Listen to my needs and challenges of my child.	○	○	○	○	○
Professionals provide resources and information regarding our needs.	○	○	○	○	○
The professionals cooperate effectively with me.	○	○	○	○	○
Introducing you to other family with children who are deaf or hard of hearing.	○	○	○	○	○
Provide access to adults who are deaf or hard of hearing for mentoring.	○	○	○	○	○

27. How important is it to you to receive information and support regarding the following kinds of deaf and hard of hearing services?

	Very Unimportant	Somewhat Unimportant	Somewhat Important	Important	Very Important
Emotional support from service providers.	○	○	○	○	○
Listen to my needs and challenges of my child	○	○	○	○	○
Professionals provide resources and information regarding our needs.	○	○	○	○	○
The professionals cooperate effectively with me.	○	○	○	○	○
Introducing you to other family with children who are deaf or hard of hearing.	○	○	○	○	○
Provide access to adults who are deaf or hard of hearing for mentoring.	○	○	○	○	○

If you have further comments, please enter them in this box:

Thank you for your participation.

Please return the survey in the stamped envelope provided.

APPENDIX C

A SURVEY OF SAUDI ARABIAN PARENTS AND THEIR NEEDS IN DEAF EDUCATION AND SERVICES (ARABIC VERSION)

UNIVERSITY OF
NORTHERN COLORADO

عزيزي ولي الأمر

السلام عليكم ورحمة الله وبركاته
أتمنى من سعادتكم المشاركة بأرائكم حول الخدمات المقدمة للأطفال الصم وضعاف السمع من خلال إكمال الاستبيان التالي والذي يتعلق بالدراسة التي بعنوان:

"نموذج آراء الأسر السعودية عن الخدمات المقدمة للأطفال الصم وضعاف السمع في المملكة العربية السعودية"

مشاركتكم تساهم في معرفة وتطوير إحتياجات الصم وضعاف السمع وأولياء أمورهم.

مع خالص الإحترام والتقدير

أخوكم الباحث
عبدالعزيز بن عبدالله القحطاني
قسم التربية الخاصة- كلية التربية- جامعة الطائف
قسم التربية الخاصة- كلية التربية- جامعة شمال كولورادو
alqa4085@bears.unco.edu
alghatani_aziz@yahoo.com

أوافق
لا أوافق

الأب
الأم

٢. العمر:(عمر الأب أوعمر الأم)

25 فما دون

26-35

36-45

46 فأعلى

٣. عدد الأطفال في العائلة:

٤. عدد الأطفال الصم أوضعاف السمع في العائلة:

٥. كيف تصف المنطقة التي تعيش فيها؟

مدينة كبيرة

مدينة صغيرة

ضاحية

قرية

٦. ما اسم مدينتك/مدينتكِ؟

٧. المستوى التعليمي:

أمي (لم يلتحق بالمدرسة)
دون ثانوية عامة
ثانوية عامة
دبلوم
بكالوريوس
ماجستير
دكتوراة

---

٨. هل تعمل/تعملين؟

نعم
لا

---

٩. المستوى الاقتصادي للأسرة:

الطبقة المتدنية (العادية)
الطبقة المتوسطة
الطبقة العليا

---

١٠. حالتك أو حالتكِ السمعِية:

أصم
ضعيف سمع
سامع

ثانياً: المعلومات الأساسية حول الطفل

١١. الحالة السمعية لطفلك:

أصم
ضعيف سمع

---

١٢. جنس الطفل:

ذكر

انثى

---

١٣. عمر الطفل:

---

١٤. عمر الطفل عند اكتشاف فقدان السمع:

٦ أشهر فما دون

من ٦ أشهر إلى سنة ونصف

من سنة ونصف إلى أربع سنوات

أربع سنوات فأعلى

---

١٥. درجة فقدان السمع عند الطفل:

بسيط (٢٠-٤٠ ديسبل)

متوسط (٤٠-٧٠ ديسبل)

شديد (٧٠-٩٠ ديسبل)

شديد جدا (٩٠ ديسبل فما فوق)

غير متأكد

---

١٦. المُعينات السمعية التي يستخدمها الطفل:

السماعات

زراعة القوقعة

لا يستخدم معين سمعي

---

١٧. طريقة التواصل التي يستخدمها الطفل:

لغة الإشارة

اللغة المنطوقة (الكلام)

لغة الإشارة واللغة المنطوقة معاً

أخرى

١٨. المرحلة الدراسية:

روضة

ابتدائي

متوسط

ثانوي

جامعي

أخرى

ثالثاً:الاحتياجات والخدمات

ا. خدمات التشخيص المبكر للفقدان السمعي:

هل كانت خدمة التشخيص المبكر للفقدان السمعي متوفرة لطفلك الأصم أو ضعيف السمع؟

نعم
لا
غير متأكد

إذا كان كذلك، ما مدى **رضاك** عن الخدمات التالية للتشخيص المبكر للفقدان السمعي للصم وضعاف السمع؟

	غير راضٍ أبداً	غير راضٍ	لا راضٍ ولا مستاء	راضٍ	راضٍ جداً	لا ينطبق
خدمات فحص السمع.	○	○	○	○	○	○
عملية تشخيص الفقدان السمعي.	○	○	○	○	○	○
خدمات المتابعة بعد تشخيص الفقدان السمعي.	○	○	○	○	○	○
خدمات التواصل مع مقدمي خدمات التشخيص السمعي.	○	○	○	○	○	○
خدمات المعلومات التوعوية						

والارشادية عن فقدان السمع.	○	○	○	○	○	○
خدمات الحصول على مواعيد مع مقدمي خدمات التشخيص السمعي.	○	○	○	○	○	○

ما مدى **أهمية** الحصول على معلومات ودعم أكثر بشأن خدمات التشخيص السمعي للصم وضعاف السمع بالنسبة لك ؟

	غير مهم	غير مهم إلى حد ما	مهم نوعا ما	مهم	مهم جداً
خدمات فحص السمع.	○	○	○	○	○
عملية تشخيص الفقدان السمعي.	○	○	○	○	○
خدمة المتابعة بعد تشخيص الفقدان السمعي.	○	○	○	○	○
خدمات التواصل مع مقدمي خدمات التشخيص السمعي.	○	○	○	○	○
خدمات التوعية والارشاد عن فقدان السمع.	○	○	○	○	○
خدمات الحصول على مواعيد مع مقدمي خدمات التشخيص السمعي.	○	○	○	○	○

ب. خدمات المُعينات السمعية: (السماعات أو زراعة القوقعة)

هل كانت خدمة المُعينات السمعية متوفرة لطفلك الأصم أو ضعيف السمع؟

نعم
لا
غير متأكد

إذا كان كذلك، ما مدى **رضاك** عن خدمات المعينات السمعية التالية للصم وضعاف السمع؟

	غير راضٍ أبداً	غير راضٍ	لا راضٍ ولا مستاء	راضٍ	راضٍ جداً	لا ينطبق
السماعات.	○	○	○	○	○	○
زراعة القوقعة.	○	○	○	○	○	○
خدمات اختيار المُعين السمعي المناسب للطفل من قِبل	○	○	○	○	○	○

الأسرة.						
خدمات تعليم كيفية إصلاح المعين السمعي للطفل في المنزل.	○	○	○	○	○	○

ما مدى **أهمية** الحصول على معلومات ودعم أكثر بشأن خدمات المعينات السمعية للصم وضعاف السمع بالنسبة لك ؟

	غير مهم	غير مهم إلى حد ما	مهم نوعا ما	مهم	مهم جداً
السماعات.	○	○	○	○	○
زراعة القوقعة.	○	○	○	○	○
خدمات اختيار المُعين السمعي المناسب للطفل من قِبل الأسرة.	○	○	○	○	○
خدمات تعليم كيفية إصلاح المعين السمعي للطفل في المنزل.	○	○	○	○	○

ج. خدمات التواصل:

هل خدمة كيفية التواصل مع الصم وضعاف السمع متوفرة؟

نعم
لا
غير متأكد

إذا كان كذلك، ما مدى **رضاك** عن خدمات التواصل التالية مع الصم وضعاف السمع؟

	غير راضٍ أبداً	غير راضٍ	لا راضٍ ولا مستاء	راضٍ	راضٍ جداً	لا ينطبق
خدمات تعريف الأسرة بطرق التواصل المختلفة للصم وضعاف السمع (على سبيل المثال: لغة الإشارة، اللغة المنطوقة، التواصل الكلي).	○	○	○	○	○	○
خدمات مساعدة الأسرة على اختيار الطريقة التواصلية للطفل.	○	○	○	○	○	○
خدمات التوعية والإرشاد حول كيفية التواصل مع الطفل.	○	○	○	○	○	○

خدمات التدريب على التواصل مع الطفل باللعب.	○	○	○	○	○	○
خدمات التدريب على لغة الإشارة.	○	○	○	○	○	○

ما مدى **<u>أهمية</u>** الحصول على معلومات ودعم أكثر بشأن خدمات التواصل مع الصم وضعاف السمع بالنسبة لك ؟

	غير مهم	غير مهم إلى حد ما	مهم نوعا ما	مهم	مهم جداً
خدمات تعريف الأسرة بطرق التواصل المختلفة للصم وضعاف السمع (على سبيل المثال: لغة الإشارة، اللغة المنطوقة، التواصل الكلي).	○	○	○	○	○
خدمات مساعدة الأسرة على اختيار الطريقة التواصلية للطفل.	○	○	○	○	○
خدمات التوعية والإرشاد حول كيفية التواصل مع الطفل.	○	○	○	○	○
خدمات التدريب على التواصل مع الطفل باللعب.	○	○	○	○	○
خدمات التدريب على لغة الإشارة.	○	○	○	○	○

د.الخدمات التعليمية:

هل هناك خدمات إرشادية للأسر للتعرف على البرامج التعليمية المناسبة للأطفال الصم وضعاف السمع (مثل: معاهد الصم، الفصول الملحقة بالمدارس العامة)؟

نعم
لا
غير متأكد

إذا كان كذلك، ما مدى **<u>رضاك</u>** عن الخدمات التعليمية التالية للصم وضعاف السمع؟

	غير راضٍ أبداً	غير راضٍ	لا راضٍ ولا مستاء	راضٍ	راضٍ جداً	لا ينطبق
خدمات مساعدة الأسرة على اختيار برامج التعليم المناسبة للطفل قبل الإلتحاق بالمدرسة.	○	○	○	○	○	○

خدمات التوجية والإرشاد الأسري بالبرامج التعليمية المحلية المناسبة للطفل الأصم أو ضعيف السمع.	○	○	○	○	○	○
خدمات توفير المعلومات حول شروط القبول في تلك البرامج والخدمات التعليمية.	○	○	○	○	○	○
مساعدة الأسرة في اتخاذ القرار المناسب بشأن البيئة التعليمية المناسبة لاحتياج طفلهم.	○	○	○	○	○	○

ما مدى **أهمية** الحصول على معلومات ودعم أكثر عن الخدمات التعليمية التالية للصم وضعاف السمع بالنسبة لك ؟

	غير مهم	غير مهم إلى حد ما	مهم نوعا ما	مهم	مهم جداً
خدمات مساعدة الاسرة على اختيار برامج التعليم المناسبة للطفل قبل الإلتحاق بالمدرسة.	○	○	○	○	○
خدمات التوجية والإرشاد الأسري بالبرامج التعليمية المحلية المناسبة للطفل الأصم أو ضعيف السمع.	○	○	○	○	○
خدمات توفير المعلومات حول شروط القبول في تلك البرامج والخدمات التعليمية.	○	○	○	○	○
خدمات مساعدة الأسرة في اتخاذ القرار المناسب بشأن البيئة التعليمية المناسبة لاحتياج طفلهم.	○	○	○	○	○

هـ.الخدمات الإجتماعية:

هل الخدمات الإجتماعية لأسر الصم أو ضعاف السمع متوفرة؟

نعم
لا
غير متأكد

إذا كان كذلك، ما مدى **رضاك** عن الخدمات الإجتماعية التالية لأسر الصم وضعاف السمع؟

	غير راضٍ أبداً	غير راضٍ	لا راضٍ ولا مستاء	راضٍ	راضٍ جداً	لا ينطبق
خدمة الدعم النفسي والمعنوي لأسر الصم وضعاف السمع من قِبل المتخصصين.	○	○	○	○	○	○
خدمة الإستماع والإنتباه إلى الاحتياجات والتحديات التي تواجه الاسر مع الأطفال الصم وضعاف السمع.	○	○	○	○	○	○
خدمة توفرالمصادر والمعلومات المتعلقه باحتياجات أسر الأطفال الصم وضعاف السمع.	○	○	○	○	○	○
طريقة تعاون المتخصصين مع أسر الأطفال الصم وضعاف السمع.	○	○	○	○	○	○
خدمة التعارف والتواصل بين أسر الأطفال الصم وضعاف السمع.	○	○	○	○	○	○
مساعدة الأسرة في التواصل مع مجتمع الصم وضعاف السمع.	○	○	○	○	○	○

ما مدى **أهمية** الحصول على معلومات ودعم أكثر عن الخدمات الاجتماعية التالية لأسر الصم وضعاف السمع بالنسبة لك ؟

	غير مهم	غير مهم إلى حد ما	مهم نوعا ما	مهم	مهم جداً
خدمة الدعم النفسي والمعنوي لأسر الصم وضعاف السمع من قِبل المتخصصين.	○	○	○	○	○
خدمة الإستماع والإنتباه إلى الاحتياجات والتحديات التي تواجه الأسر مع الأطفال الصم وضعاف السمع.	○	○	○	○	○
خدمة توفر المصادر والمعلومات المتعلقه باحتياجات أسر الأطفال الصم وضعاف السمع.	○	○	○	○	○
تعاون المتخصصين مع أسر	○	○	○	○	○

الأطفال الصم وضعاف السمع.					
خدمة التعارف والتواصل بين أسر الأطفال الصم وضعاف السمع.	○	○	○	○	○
مساعدة الأسرة في التواصل مع مجتمع الصم وضعاف السمع.	○	○	○	○	○

ملاحظات إضافية:

شاكراً لكم جهدكم وتعاونكم

APPENDIX D

CONSENT FORM

UNIVERSITY OF
NORTHERN COLORADO

CONSENT FORM FOR PARTICIPANTS IN RESEARCH

UNIVERSITY OF NORTHERN COLORADO

Project Title: Saudi Parents' Needs in Deaf Education in the Kingdom of Saudi Arabia

Principal Investigator: Abdulaziz Alqahtani PhD Student, Deaf/Hard of Hearing Program School of Special Education	**Principal Investigator's Academic Advisor:** Dr. John Luckner Professor and Coordinator, Deaf/Hard of Hearing Program School of Special Education
Address: Campus Box 141 Special Education Department College of Education University of Northern Colorado Greeley, CO 80639-0139 E-mail: alqa4085@bears.unco.edu	Address: 501 20th St. Campus Box 141 University of Northern Colorado Greeley, CO 80639-0248 (970) 351-1672 John.luckner@unco.edu

About the Study:

I am a graduate student at the University of Northern Colorado. I am conducting research on Saudi Arabian parents and their needs in deaf education and services. I would like you to consider participating in this study. There is a clear need for professionals in deaf education to listen to the perceptions and needs of parents of children who are deaf and hard of hearing (DHH) in order to learn how they perceive the support and service programs for their child and what they expect from professionals and from the programs. The current study is designed to meet this need by documenting the needs and concerns of Saudi parents with regard to deaf education services they have been receiving in the Kingdom of Saudi Arabia.

This Study:

1. In this study, you will be asked to share your perceptions as a parent of a child who is DHH. You will record all your answers on the survey.
2. It is anticipated that your participation would take approximately 15 minutes.
3. You will not receive payment at the completion of the survey and your participation is voluntary.

Language:

The Arabic language will be the primary language used in the survey.

Risks:

Although the risk for participating in this survey is small, you might feel some sadness regarding the needs and challenges for the children who are DHH in regard to the support and services provided in Saudi Arabia. The researcher does not anticipate any increased physical risk due to participation.

Benefits:

Your participations in this study may contribute information that has yet to be accounted for in academic studies, or it may encourage other researchers to duplicate this study in one form or another, which might extend the number and potency of literature reviews in the field of deaf education. Also, your participations in this study will assist other researchers and professionals in understanding the challenges parents face raising their children who are DHH. Finally, your participation in this study will present parents' perceptions to inform professionals in deaf education how they perceive the support and service programs for their child and what they expect from professionals and from programs.

Confidentiality:

Data will be kept confidential. No one will know anything about your name or any other identifying information that will follow your participation because data will be reported in terms of code summaries only. You will never be identified individually and no personal identifying information will be marked on any of the surveys. Completed surveys will be stored in a locked file cabinet in the office of the researcher's faculty adviser. Upon completion of data entry, all original surveys will be destroyed.

Costs and Compensation of the Participation:

Your participation in this study will be voluntary. If you decide not to participate in the study, you have the full right to refuse. You may withdraw from the study at any time before or during data collection, for any reason, and without penalty.

Results:

A copy of the outcome of the study will be given to all participants in order to inform them of the study's results, if they ask.

Contacting the Researcher or the IRB:

Contact the researcher, Abdulaziz Alqahtani, if you have questions about any risk to you because of participation in this study. Use the phone number or e-mail account at the top of this consent form. If you have any concerns about your selection or treatment as a research participant, please contact Sherry May, IRB Administrator, Office of Sponsored Programs, 25 Kepner Hall, University of Northern Colorado, Greeley, CO 80639; 970-351-1910.

Intent to Participate:

If you want to be in my research and answer the survey about Saudi parents and their needs in deaf education, sign your name below and write today's date next to it. Thanks!

I have read the Informed Consent Form and agree to participate in the study conducted by ***Abdulaziz Alqahtani****. I understand that I can withdraw from this study at any time without penalty or prejudice. I understand that I will not receive payment or reimbursement for my participation.*

Parent's Signature ____________________________________ Date ________________

Researcher's Signature ________________________________ Date ________________

APPENDIX E

FOLLOW-UP EMAIL LETTER FOR PARTICIPANTS

UNIVERSITY OF
NORTHERN COLORADO

FOLLOW-UP LETTER

Dear Director of the Deaf Organization/Club,

Approximately four weeks ago, you were sent a letter, consent form, and survey for a dissertation study examining the needs and perceptions of parents of children who are DHH in regard to the support and services provided in Saudi Arabia. I want to ensure you have had an opportunity to participate in this study. If you still have a copy of the consent form and survey, please sign and complete the information and return it in the self-addressed stamped envelope provided.

Please know your participation is highly valued in learning about the needs and challenges for children who are DHH and their parents in regard to the support and services provided in Saudi Arabia, as very little is known. Should you have any questions or concerns regarding the consent form or the survey, please feel free to contact me.

Again, thank you for taking the time to complete this survey.

Sincerely,
Abdulaziz Alqahtani, M.Ed., Deaf Education
Campus Box 141
Special Education Department
College of Education
University of Northern Colorado
Greeley, CO 80639-0139

APPENDIX F

LETTER OF APPRECIATION

UNIVERSITY OF
NORTHERN COLORADO

LETTER OF APPRECIATION

Dear Director of the Deaf Organization/Club,

Thank you for your participation in this study. I know your participation is highly valued in learning about the needs and challenges for children who are DHH and their parents in regard to the support and services provided in Saudi Arabia. If you are interested in knowing the results of this dissertation study, information will be sent to you upon its completion.

Warm regards,

Abdulaziz Alqahtani, M.Ed., Deaf Education
Campus Box 141
Special Education Department
College of Education
University of Northern Colorado
Greeley, CO 80639-0139