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Reality of counseling in pediatric audiology clinical practice

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Reality of Counseling in Pediatric Audiology Clinical Practice

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Abstract

The overwhelming nature of hearing loss identification often causes families to experience grief and confusion. Children as young as nine months old with severe hearing loss have the option to undergo cochlear implantation (CI) surgery with the hopes of restoring normal hearing. Pediatric audiologists accompany families through the identification of hearing loss and the learning process that coincides with this surgery. Despite knowledge that parents of children with communication disabilities will experience a sense of loss and have moderate to severe cyclic emotional reactions, little is known about how audiologists manage the emotional needs of families, if they feel prepared to do so, or if they encounter opportunities to do so in clinical practice. The purpose of this study was to assess the reality of pediatric audiology clinical practice, specifically the counseling that pediatric audiologists provide to parents. Participants were audiologists who provide CI and hearing aid services to pediatric patients in various health service settings, such as hospitals, speech-language clinics or ear-nose-throat clinics. Audiologists reported high confidence in every topic except for a handful, such as communicating with parents in the depression stage of the grief cycle. Most audiologists received a counseling course as a part of their graduate education in audiology, however 61% of counseling courses did not involve role-play experiences and can be considered ineffective courses. A linear regression revealed a significant relationship between an audiologist's confidence in providing emotional support in initial appointments and the percent of pediatric patients an audiologist sees in their average patient load ($b = .011$, and $p = .001$). Years of experience and completion of counseling coursework did not predict confidence in providing personal adjustment counseling. 77% of audiologists agreed that personal-adjustment counseling is within the scope of audiology, but only 61% of audiologists reported that they have the necessary skills to provide adequate personal-adjustment counseling.

Introduction

Ninety percent of infants identified with severe hearing loss at birth are born to parents with no known family history of hearing disorders. The incidence of congenital hearing loss is high, in fact, three out of every 1,000 children born will have a hearing impairment.[28] A pediatric audiologist is a hearing health care provider serving a population of 0-18 year old. They are the first professional to confirm and describe a child's hearing loss to their family, and they are the most qualified to do so.[19, 23] This responsibility requires audiologists to be proficient and experienced in providing information that might be upsetting, stress-evoking, and even painful for some families.[3] Families with normal hearing often experience grief and confusion as they approach the learning curve of raising a deaf or hard of hearing child.

Children with severe hearing loss have the option to undergo cochlear implantation (CI) surgery, with the hopes of restoring normal hearing through the implantation of this prosthetic device. Cochlear implants have become a viable option for those with severe to profound sensorineural hearing loss.[13] Children born with severe hearing loss can be implanted as young as nine months old.[13] According to the Food and Drug Administration, approximately 65,000 of these devices were implanted in pediatric patients in the United States by December 2019.[13] The job of a pediatric audiologist is to accompany families through the identification of hearing loss, implantation and programming of this device, and the learning process that coincides with this major surgery. Due to the journey that cochlear implantation requires, parents of these patients look to their audiologist as the primary contact for care during this time. Despite the knowledge that parents of children with communication disabilities will experience a sense of loss and have moderate to severe cyclic emotional reactions,[34] little is known about how audiologists manage the emotional needs of families undergoing this difficult process, if they feel prepared to do so, or if they encounter opportunities to do so in clinical practice.

Counseling in Audiology: Our Definition

Many health care providers who are not formally trained in clinical psychology implement personal adjustment counseling in their practice.[16] Some of these professionals are pediatric audiologists. In this study counseling in audiology is broken down into three domains: aiding decision making, communicating new information, and personal adjustment.[3]

The first domain, aiding decision making, includes guidance on device and fitting selection, communication modes, and educational options. The second domain, communicating new information, includes realistic expectations of language development and schooling following CI implantation. It refers to presenting and facilitating the new responsibilities of a family raising a hearing impaired child. These responsibilities include but are not limited to optimizing the listening environment of the child, implementing listening strategies, and advocating for them in their schooling years. The third domain, personal adjustment, is defined as proficiency in walking families through the stages of grief, such as: shock and denial, pain and guilt, anger and bargaining, depression, reconstruction and working through, and acceptance and hope.

Aiding decision making, communicating new information, and personal adjustment counseling all fall within the basic scope of practice for an audiologist. Communicating in terms of the first two domains, such as the type and severity of audiometric results is a routine matter to audiologists, and is frequently communicated via a rehearsed verbal template, where the details of several tests are explained in non-technical terminology. The fundamentals of communicating new information and aiding decision making are developed through four years of graduate training in equipment, technology, anatomy, psychoacoustics, electrophysiology, specialized clinical areas, best practice treatment, etc.

The interprofessional nature of cochlear implantation allows audiologists to have support from ENT doctors and surgeons during the entire cochlear implant process. Representatives from hearing aid and cochlear implant manufacturers are available to provide training for audiologists

and answer questions about new products. Therefore, audiologists are well supported in terms of the devices they fit and the programming they provide.

The support and preparation that audiologists receive for the last domain within our definition of counseling in audiology, personal adjustment counseling, is more ambiguous. Parents with normal hearing who have children with severe hearing loss are a very unique population. These children by right of their birth can belong to the deaf community, a community their parents do not belong to.[20] These parents have the option to integrate sign language into their home and choose the Deaf world for their child, or they can choose to pull them out of this community and into the hearing world by implanting them with cochlear implants.[20] This is not to say that a deaf person who wears hearing aids or cochlear implants is not a part of the deaf community. It is however to say that choosing not to embrace sign language will have a pivotal effect on a child's ability to participate in deaf culture.[20] A definition of counseling that does not include assisting families with the emotions that accompany an identification of hearing loss is too restrictive.[27]

Few studies have acknowledged the needs of these parents that only an audiologist can fulfill. A counseling psychologist is more than capable of working through grief with these parents, but how much more effective would an audiologist be? (A professional who already sees this family very often, understands the extent of the decisions they need to make, and can anticipate the hurdles that will emerge along the journey). "Thus, audiologists—the professionals most qualified to counsel those with difficulties relating to hearing problems—need to be equipped with counseling skills".[13] A patient-centered approach to communication, where an authentic relationship is developed and an audiologist attends to a patient's emotional and audiological needs, leads to improved adherence to treatment, self-management and satisfaction of the parents of pediatric patients.[17]

Unfortunately, many audiologists lack confidence in their ability to successfully provide personal adjustment counseling. A lack of training and experience in this area is likely

responsible for these feelings of concern and/or discomfort. [8, 25, 28, 32] The American Speech-Language Hearing Association (ASHA)'s practice policy *"Guidelines for audiologists providing informational and adjustment counseling to families of infants and young children with hearing loss birth to 5 years of age"* acknowledges that "it is within the scope of practice in audiology to infuse emotional support during interactions with families".[5] They continue by warning audiologists to be observant of families suffering for long periods of time, although no data exists to help audiologists anticipate the proportion of parents who require additional emotional support in clinical practice. The final line of this policy states *"*Our current body of counseling literature is largely based on late identification of hearing loss in children, not our current reality of early detection in the newborn period. As such, there is a great need for more current investigations into the counseling process and its effectiveness for families with newly identified infants with hearing loss. The foundation of outcomes studies upon which EHDI policies were implemented must be expanded. To the extent possible, counseling families during crucial periods of parenting should be evidence based and outcome directed".[5]

Aims

The long term goal of this research is to further existing literature on the current reality of practice for pediatric clinical audiologists. Families notified of the reality of their child's hearing impairment following their hearing screening at birth are in need of much more than best practice audiology. Following an identification of hearing loss in an infant or child, families will follow up with their audiologist several times due to the necessity of their services early on in the identification process. Despite the fact that pediatric audiologists are first and foremost diagnosticians, they have the potential to play a pivotal role in the personal adjustment of parents. A patient-centered approach leads to improved patient satisfaction, adherence to treatment, and self-management. Despite this knowledge, little is known about the nature of pediatric audiologist-patient communication throughout diagnosis and management planning.[18] It is our

hope that the responses from audiologists measured in our questionnaire will inform the audiology community about how we currently serve our patients and where there is room for improvement. Also, we hope to inform graduate training in terms of the necessity and benefit of time spent on counseling coursework.

The goal of this specific questionnaire is to better understand audiologists' practice in cochlear implants for children (0-18 years old) beyond programming the equipment. We hope to accomplish this by developing a questionnaire to assess the reality of pediatric audiology clinical practice in the counseling that pediatric audiologists provide to the parents of cochlear implant recipients throughout the diagnostic and implantation journey. Specifically, we aimed to 1) explore the likelihood of audiologists to provide counseling services in various situations and the amount of effort committed to their provision; 2) assess selected aspects of counseling (such as confidence, recognized importance of providing counseling, and proportion of caseload that requires counseling) to learn more about the reality of clinical practice; 3) we hope to identify how factors such as years of experience, completion of counseling coursework, and percentage of case load in pediatrics correlate with the likelihood of providing these services. Our questionnaire probed pediatric audiologists on the following topics: emotional support; personal adjustment counseling; grief; resources available for families; graduate preparation; scope of practice; inter-professional relationships; realistic expectations; device selection; and low SES resources, in hopes to uncover trends in the provision of counseling in clinical practice.

Research Questions

In hopes to reveal the audiologist perspective to the results cited by Muñoz, K et al. in 2015, the research questions to be examined include the following:

1. How confident are audiologists in engaging in personal adjustment counseling?

2. What percentage of audiologists' case load is experiencing emotional distress and would benefit from their audiologist addressing these emotional concerns?

3. How important is audiologist's guidance for patients who are experiencing the distress accompanied by hearing loss identification?

4. How do the following factors correlate (if, at all) with audiologists' likelihood of offering patient counseling: 1. years of experience practicing audiology, 2. completion of counselling coursework, 3. percent of average patient load in pediatrics.

Methodology

This questionnaire exists within the research lab of Dr. Yingjiu Nie, Ph.D. and her ongoing research of audiologists' practices in cochlear implant services. More specifically, this study began as a continuation of a previous questionnaire probing cochlear implant audiologists on programming variability. The aim of this questionnaire was to again probe cochlear implant audiologist, but to focus on counseling in clinical practice rather than the programming of the CIs themselves. In addition, this study focused on pediatric cochlear implant audiologists, and how they interacted with the families of children with hearing loss.

Methods are presented below in the form of a flow chart for readability. Each step of the development and implantation process are bolded. See "Appendix VI: Methods Narrative" for a more detailed account of the process of developing, distributing, and analyzing our questionnaire.

Defining Areas of Interest

First Draft of Questionnaire Topics

(4 Topics Identified, 2 Chosen)

First Draft of Questionnaire Questions

See Appendix II: First Draft of Questions.

(Questions gathered from dissertation committee and advisors.)

Organizing Questionnaire Questions

Define Counseling in Audiology

"In this study counseling can be broken down into three domains: aiding decision making, communicating new information, and personal adjustment. Aiding decision making includes guidance on device selection. Communicating new information includes realistic expectations of language development and schooling following CI implantation and refers to presenting and facilitating the new responsibilities of a family raising a hearing impaired child. These responsibilities include but are not limited to optimizing the listening environment of the child, implementing listening strategies, and advocating for them in their schooling years. Personal Adjustment is defined as proficiency in walking families through the cycles of grief, such as: shock and denial, pain and guilt, anger and bargaining, depression, reconstruction and working through, acceptance and hope."

Separate Definition into Domains

Categorize questions by domain

See Appendix II: First Draft of Questions

Formulated a Researchable Question

"What is the reality of counseling in audiology clinical practice, specifically counseling through decision making, delivering information, and personal adjustment?"

First Literature Review

Searched ComDisDome, ASHA Full-Text Journals, ERIC, PubMed, and Google Scholar

11 Articles identified

First Reading Phase

9 areas of subject matter identified in common through 11 articles

9 areas were organized into "Topics" for the Comprehensive Literature Review:

(1)Evidence that families of hearing impaired children benefit from personal adjustment counseling. (2) Evidence for the necessity of this study. (3) Evidence that audiologists would benefit from a course in counseling. (4) Evidence about audiologist's scope of practice. (5) Evidence that clinicians have better outcomes if they counsel patients well. (6) Data about informational counseling. (7) Data about personal adjustment counseling. (8) Calls for further research. (9) History of the profession of audiology.

Second Reading Phase

Evidence within each study was highlighted and numbered as Topic 1-9.

Third Reading Phase

Evidence from 11 articles converted into an electronic format. Data from studies was organized underneath each topic.

Second Literature Review

A second literature review was initiated with tighter criteria for publication date, as majority of 11 articles was published over ten years ago. Four more articles were identified, read**,** and organized.

Second Draft of Questionnaire Questions

Second list of questionnaire questions was drafted considering the new information the literature introduced. Included 61 questions.

(See Appendix III: Second Draft of Questions)

Formatting Questionnaire

The format is as follows: The questionnaire presents one topic at a time and then asks three questions about this topic. Questions were formatted to be answered on a five point Likert scale.

[Topic]

1. *How confident are you in executing this in clinical practice?*
2. *How often do you engage in this in clinical practice?*
3. *How important is this topic in clinical practice?*

Finalizing Questionnaire

Finalized questionnaire *(See Appendix V: The Questionnaire)* was converted into QuestionPro where a shareable link was used to distribute it to participants.

Institutional Review Board (IRB) Protocol 22-2679 protocol submitted and approved.

Recruitment

Audiologist who provide amplification services to pediatric patients in various health services settings were identfied by published professional provider lists and word of mouth.

Participants were contacted via email and asked if they were interested in completing the questionnaire

(see Appendix IV: Recruitment Email).

QuestionPro questionnaire link was provided to 35 participants who expressed interest.

17 participants completed this questionnaire. The effective response rate was 49%.

Seven participants reported seeing 20% or less pediatric patients in their average patient load. Four participants saw pediatric patients for 40% of their average patient load, and the remaining six participants saw between 60-100% of pediatric patients. Half of the participants worked in a medical center and the other half worked in private clinics, schools, and university clinics.

Analysis

Participants responded to questions on a five point Likert Scale. As numbers increase from 1 to 5, colors change from red (1) to orange (2) to yellow (3) to green (4 and 5).

Key
5 (100%) = Extremely / Always / Strongly Agree
4 (80%) = Very / Very Often / Agree
3 (60%) = Moderately / Sometimes / Neutral
2 (40%) = Slightly / Rarely / Disagree
1 (20%) = Never / Not at all / Strongly Disagree

Data was coded without identifying information and analyzed using Excel and IBM SPSS 27 Descriptive statistics, Spearman correlations, and linear regression were conducted. Specifics of analysis and results will be described in the results section for readability.

See "Appendix VI: Methods Narrative" for more detail

Results

Result 1: General Emotional Support.

This questionnaire begins with questions about general emotional support in pediatric audiology appointments. Participant's median responses to all questionnaire questions can be seen in Figures 1 and 9. The median of all the responses in the General Emotional Support section were "green" such that audiologists rated high confidence, high frequency, and high importance across all general emotional support questions. In initial diagnostic appointments audiologists reported feeling very confident in providing the emotional support that family members required in response to the news of their child's hearing impairment. They also reported being very confident in providing an environment for parents to process grief and in communicating emotionally charged information to parents.

There was little variability in the confidence that audiologists reported across all subtopics in general emotional support. They always provided emotional support in these initial appointments, always attempted to provide this environment, and often communicated emotionally charged information. They rated their role in providing emotional support in initial appointments and creating an environment for the processing of grief as extremely important.

They also considered their role in communicating emotionally charged information as very important.

Key

5 = Extremely / Always / Strongly Agree
4 = Very / Very Often / Agree
3 = Moderately / Sometimes / Neutral
2 = Slightly / Rarely / Disagree
1 = Never / Not at all / Strongly Disagree

Block 1: General Emotional Support	Confidence (%)	Frequency (%)	Importance (%)
In initial diagnostic appointments	Very (37) Q1=3 M=4 Q3=5	Always (60) Q1=4 M=5 Q3=5	Extremely (47) Q1=4 M=4 Q3=5
Providing an environment for processing through grief	Very (47) Q1=3 M=4 Q3=4	Always (60) Q1=4 M=5 Q3=5	Extremely (63) Q1=4 M=5 Q3=5
Communicating emotionally charged information	Very (57) Q2=3 M=4 Q3=4	Very Often (57) Q1=3 M=4 Q3=4	Extremely (42) Q1=3 M=4 Q3=5

Block 2: Personal Adjustment-Counseling: Communicating with Parents in the Stages of the Grief Cycle	Confidence in Executing Counseling (%)	Frequncy of Encounter (%)	Importance of Executing Counseling (%)
Shock and denial	Very (47) Q1=3 M=4 Q3=4	Very Often (47) Q1=3 M=3 Q3=4	Extremely (58) Q1=4 M=5 Q3=5
Pain and guilt	Very (50) Q1=3 M=4 Q3=4	Sometimes (61) Q1=3 M=3 Q3=3	Extremely (56) Q1=4 M=5 Q3=5
Anger and bargaining	Very (61) Q1=3 M=4 Q3=4	Sometimes (50) Q1=2 M=3 Q3=3	Extremely (50) Q1=4 M=4.5 Q3=5
Despair	Moderately (50) Q1=2.5 M=3 Q3=3	Rarely (38) Q1=2 M=2.5 Q3=3	Very (33) Q1=3.25 M=4 Q3=5
Acceptance and hope	Extremely (50) Q1=4 M=4.5 Q3=5	Very Often (72) Q1=4 M=4 Q3=4	Extremely (56) Q1=4 M=5 Q3=5

Rate Your Level of Agreement: Grief	Average Answer (%)
Grief is linear?	Disagree (89) Q1=1 M=2 Q3=2
Grief is cyclic?	Agree (50) Q1=4 M=4 Q3=5
Personal-adjustment counseling is within the scope of practice	Agree (50) Q1=4 M=4 Q3=4.75
There is adequate time during appointments for emotional counseling	Disagree (50) Q1=2 M=2.5 Q3=3.75
I have the skills for adequate personal-adjustment counseling	Agree (61) Q1=3 M=4 Q3=4
I received a counseling course	Yes (67)
My counseling course involved role-play experiences	No (61)

Figure 1. Participant's Responses to Questionnaire Questions in Block 1: General Emotional Support, and Block 2: Personal Adjustment Counseling. The median, first and third quartile for responses. See legend for Likert scale values. As numbers increase from 1 to 5, colors change from red (1) to orange (2) to yellow (3) to green (4 and 5)

Little variability was seen in reports of frequency or importance. A Spearman's Rho correlation revealed that a correlation between confidence in providing emotional support in initial appointments and confidence in communicating emotionally charged information

approached significance ($r^2 = .453$, $p = .051$). Audiologists reported that on average they spent 60% of appointment time providing informational counseling and 40% of appointment time providing personal adjustment counseling, seen in Figure 2.

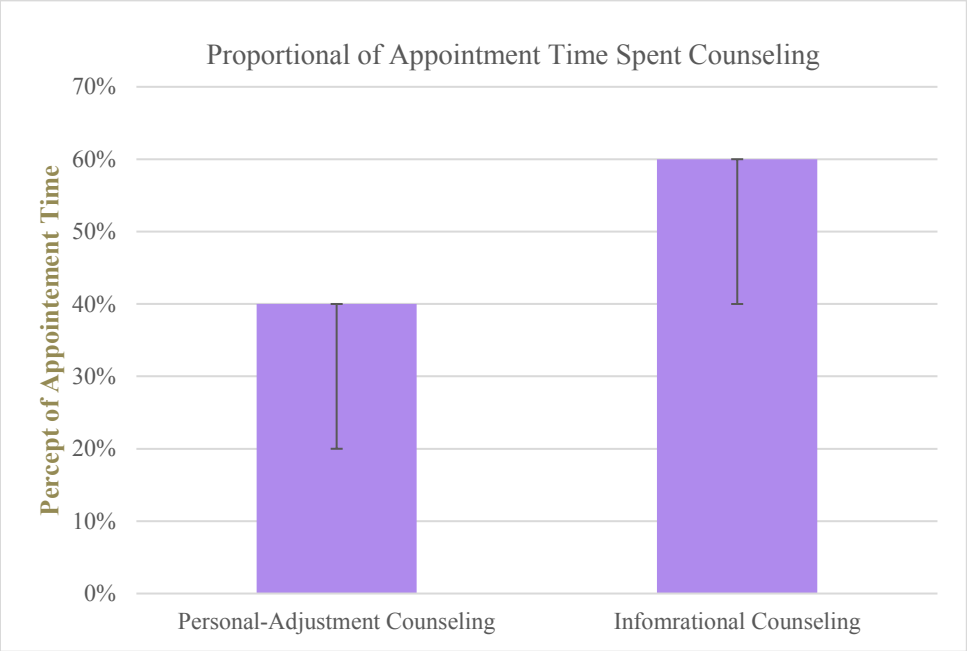

Figure 2. Proportional of Appointment Time Spent Counseling. Audiologists spent 60% of appointment time providing informational counseling and 40% of appointment time providing personal adjustment counseling. Error bars refer to first and third quartiles.

Result 2: Personal Adjustment Counseling: Communicating with Parents in Stages of the Grief Cycle, a Descriptive Analysis

The next block of the questionnaire examined the audiologists' confidence in communicating with family members of pediatric patients who are managing specific emotions of grief in response to the onset of their child's hearing impairment. Stages of grief are broken down into experiencing specific emotions understood within Elisabeth Kübler-Ross's stages of grief: "shock and denial", "pain and guilt", "anger and bargaining", "despair", and "acceptance and hope".[31] The median of audiologist's confidence when communicating with parents enduring grief varied depending on the stage, as seen in Figure 3. The frequency that audiologists saw each stage of grief varied as well, as seen in Figure 4.

In Figure 3, when asked to rate their level of confidence for counseling family members experiencing each stage of grief, audiologists reported they were very confident when communicating with families experiencing the first three stages, "shock and denial",

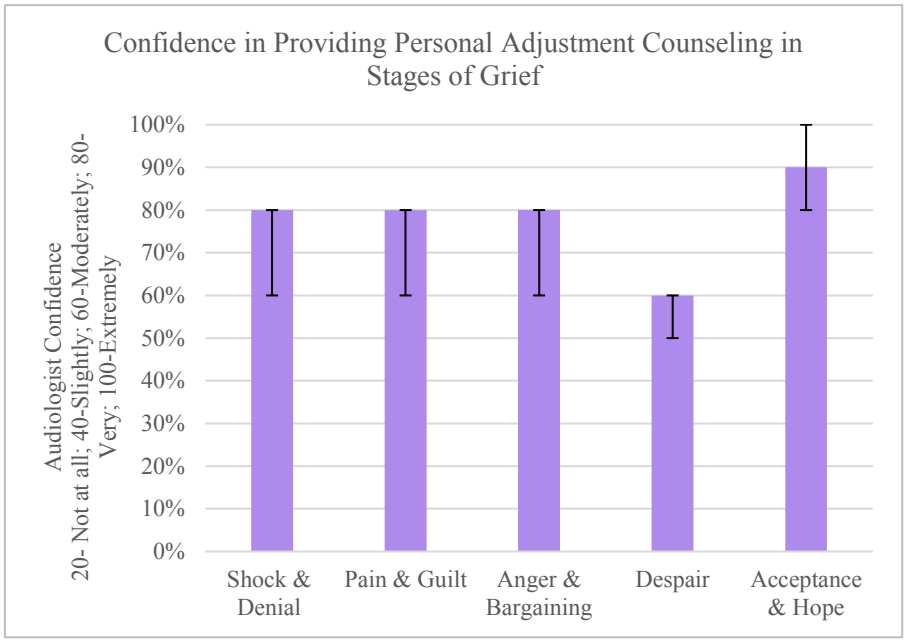

Figure 3. Audiologists reported high confidence when navigating emotional situations. They feel least confident encountering a parent experiencing 'despair'. Error bars refer to first and third quartiles.

"pain and guilt", and "anger and bargaining", with little variability seen in the response set. Audiologists reported seeing patients experiencing these first three stages "sometimes" (first 3 columns of Figure 4). Seen in the last column, audiologists reported high confidence when communicating with families experiencing the stage of "acceptance and hope" and saw patients experiencing "acceptance and hope" very often. Audiologists reported only moderate confidence when communicating with families experiencing "despair" with medium variability. The frequency that an audiologist encountered family members experiencing "despair" varied, seen in the forth column. However, on average they reported "rarely" encountering this, as seen in Figure 4. Audiologists perceived that their guidance was "extremely important" when family members experienced each stage of grief in response to the news of their child's hearing impairment, with little variability.

Spearman correlations were performed amongst the audiologist's reported confidence when communicating with families experiencing each of the five stages of grief. Significant relationships are visualized in Figure 8. Statistically significant correlations were revealed between the median confidence in three stages, including "shock and denial", "anger and bargaining", and "acceptance and hope". Confidence in "shock and denial" and "anger and bargaining" were significantly correlated (r^2 = .739, p= .001), "anger and bargaining" and "acceptance and hope" were significantly correlated (r^2 = .497, p= .036), and "shock and denial" and "acceptance and hope" were significantly correlated (r^2 = .697, p= .001). Audiologist's confidence when counseling parents experiencing the remaining two stages, "pain and guilt" and "despair" were not significantly correlated; their confidence in these two stages also did not correlate with that in the aforementioned three stages (i.e., "shock and denial", "anger and bargaining", and "acceptance and hope").

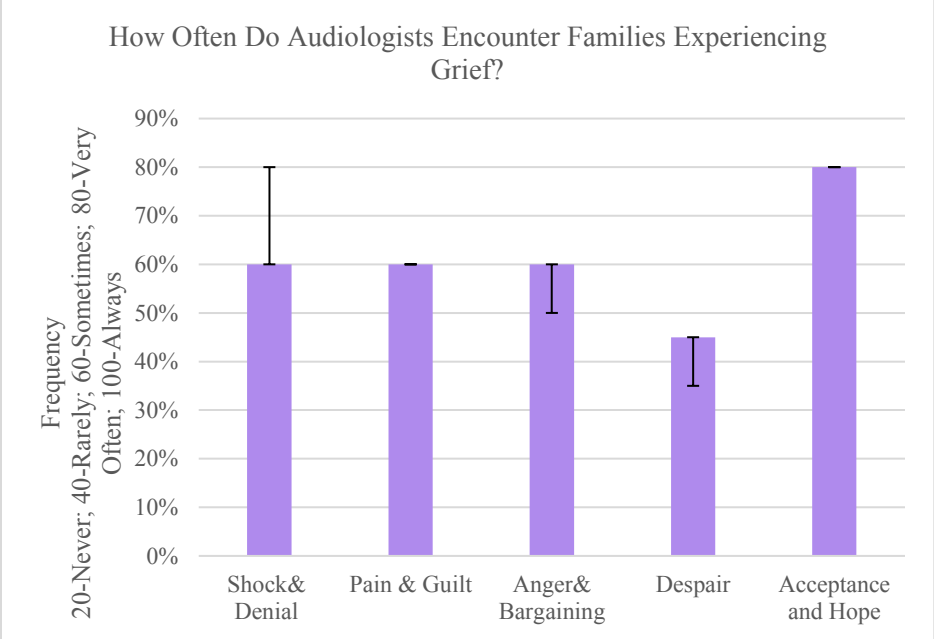

Figure 4. How Often Do Audiologists Encounter Families Experiencing Grief? They encounter the first 3 stages "sometimes", encounter grief "rarely" and encounter "acceptance and hope" very often. Error bars refer to first and third quartiles.

When asked about the process of grieving, 100% of audiologists either disagreed or strongly disagreed that the grief cycle that hearing parents of pediatric patients' experience is linear; 88% agreed or strongly agreed that grief was instead cyclic in nature. As seen in Figure 5, 87% of audiologists agreed or strongly agreed that personal adjustment counseling is within the scope of practice of a pediatric audiologist. However, only 61% of audiologists agreed that they have the skills necessary to provide adequate personal adjustment counseling.

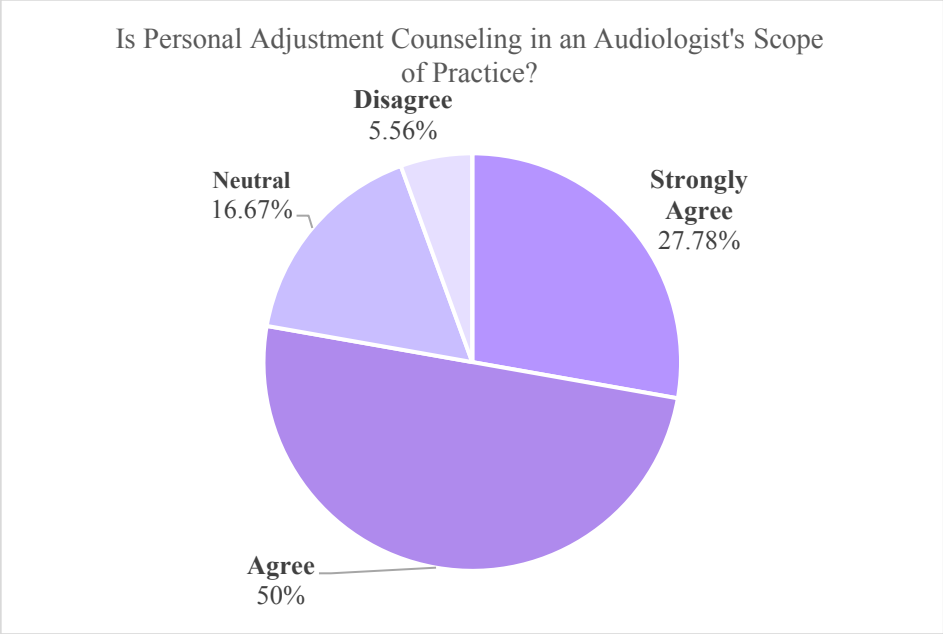

Figure 5. Is Personal Adjustment Counseling in an Audiologist's Scope of Practice? 77% of audiologists agreed that personal adjustment counseling is within the scope of audiology. The other 22% were neutral / disagreed.

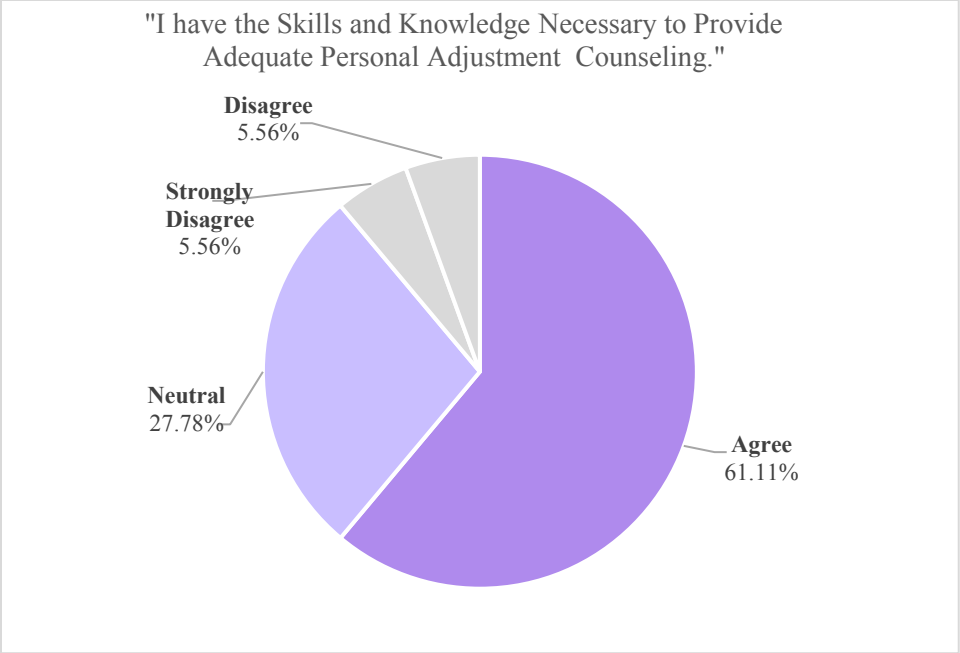

Figure 6. "I have the Skills and Knowledge Necessary to Provide Adequate Personal Adjustment Counseling." 39% of audiologists reported that they did not have the necessary skills to provide adequate personal adjustment counseling.

Audiologists reported various perspectives about whether or not they had adequate appointment time for personal adjustment counseling. Half reported that they did not have enough time. The other half ranged from agreeing to strongly agreeing that they had enough appointment time to counsel families. 67% of audiologists received a counseling course as a part of their graduate education in audiology, however most of their counseling courses (61%) did not involve role-play experiences (Figure 7).

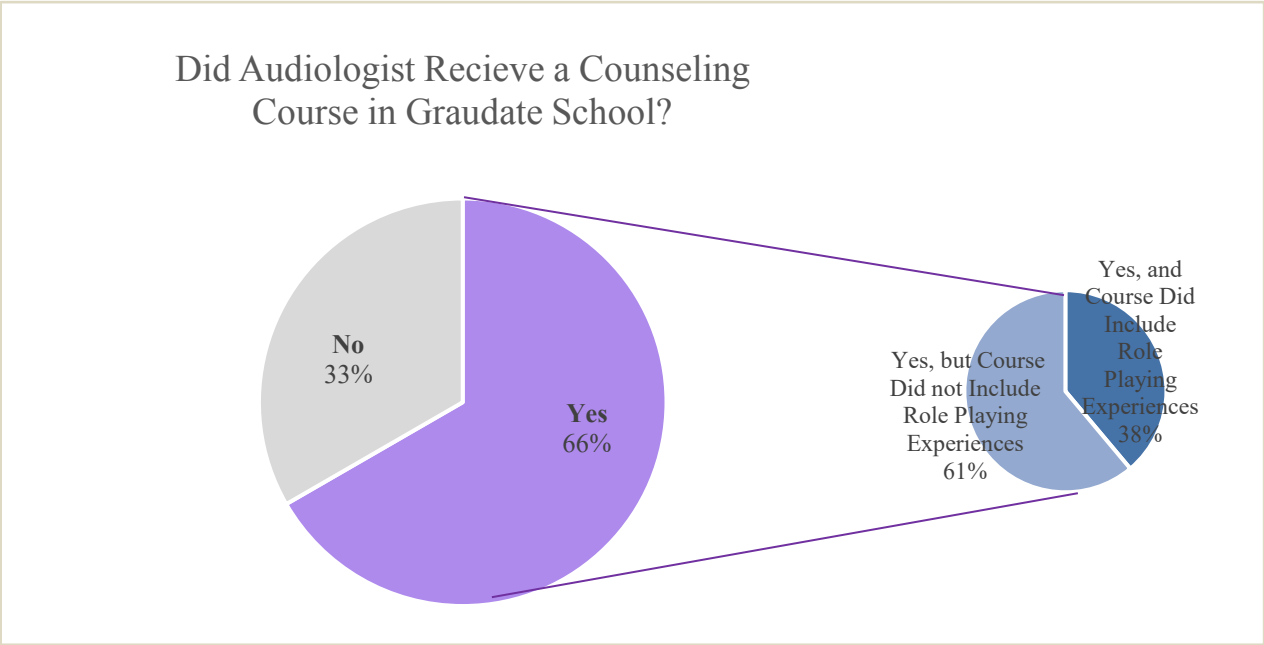

Figure 7 Did Audiologists Receive a Counseling Course in Graduate School? Over half of audiologists survived reported that they did receive a counseling course as a part of graduate school, though 61% of those audiologists reported that their course was ineffective because it did not include role playing experiences.

Result 3: Personal Adjustment Counseling: Communicating with Parents in Stages of the Grief Cycle, a Linear Regression

A linear regression was performed to understand what percent of the variability in counseling confidence can be explained by predictor variables collected in our questionnaire. The independent variables 1. “Years of experience practicing audiology”, 2. “completion of counseling coursework”, and 3. “percent of average patient load in pediatrics” were tested with a linear regression to measure to what degree they predict audiologist's confidence when counseling parents of pediatric patients. The dependent variables that were used to measure confidence can be seen in Figure 8 and Table 1. The three variables seen in the center of Figure 5 include the three general areas of emotional support.

The dependent variables examined are median confidence in providing emotional support in initial appointments “initial”, median confidence in providing an environment suited for the processing of grief “env”, and median confidence in communicating emotionally charged

information "emotion" (such as initially communicating the identification of a hearing loss in a pediatric CI patient of hearing parents). The four other variables around the perimeter of Figure 8 are median confidence in stages of the grief cycle. A Spearman's correlation of these dependent variables (these three general measures of confidence and the confidence in each of the four stages of grief) was performed and it revealed statistically significant correlations between dependent variables depicted by lines connecting them in Figure 8, and p-values with a "**" indication in Table 1. Two of these general measures, "env" and "initial" were significantly correlated with each other (ρ = .723, p=.001). Due to this correlation, for purposes of increased power, the measure of "env" was removed as a dependent variable in the linear regression.

Dependent Variable Search: Quantifying Audiologist's Confidence Spearman R^2 Values

		"Initial"	"Emotion"	"ENV"	"Shock and Denial"	"Pain and Guilt"	"Anger and Bargaining"	"Despair"
"Initial"	ρ	1	.490	.723**	.740**	.199	.731**	.350
	Sig. (2-tailed)		.054	.002	.001	.460	.001	.184
"Emotion"	ρ	.490	1.000	.511*	.573*	-.166	.712**	.511*
	Sig. (2-tailed)	.054	.	.043	.020	.540	.002	.043
"ENV"	ρ	.723**	.511*	1.000	.577*	-.179	.592*	.597*
	Sig. (2-tailed)	.002	.043	.	.019	.508	.016	.015
"Shock and Denial"	ρ	.740**	.573*	.577*	1.000	.378	.802**	.424
	Sig. (2-tailed)	.001	.020	.019	.	.149	<.001	.102
"Pain and Guilt"	ρ	.199	-.166	-.179	.378	1.000	.137	-.014
	Sig. (2-tailed)	.460	.540	.508	.149	.	.612	.958
"Anger and Bargaining"	ρ	.731**	.712**	.592*	.802**	.137	1.000	.426
	Sig. (2-tailed)	.001	.002	.016	<.001	.612	.	.100
"Despair"	ρ	.350	.511*	.597*	.424	-.014	.426	1.000
	Sig. (2-tailed)	.184	.043	.015	.102	.958	.100	.

Note: ρ = Spearman's rho. * p < .05. ** p < .01

*Table 1. Dependent Variable Search: Variables to Quantify Audiologist's Confidence Spearman Rho. Correlations between dependent variables that are used to quantify audiologist confidence. P-values from the Spearman Rho correlation of dependent variables. ** Indicates correlation is significant at a 0.01 level (2-tailed). Significant correlations are illustrated in Figure 8.*

Dependent Variable Search: Quantifying Audiologist's Confidence Spearman Rho Values Illustrated

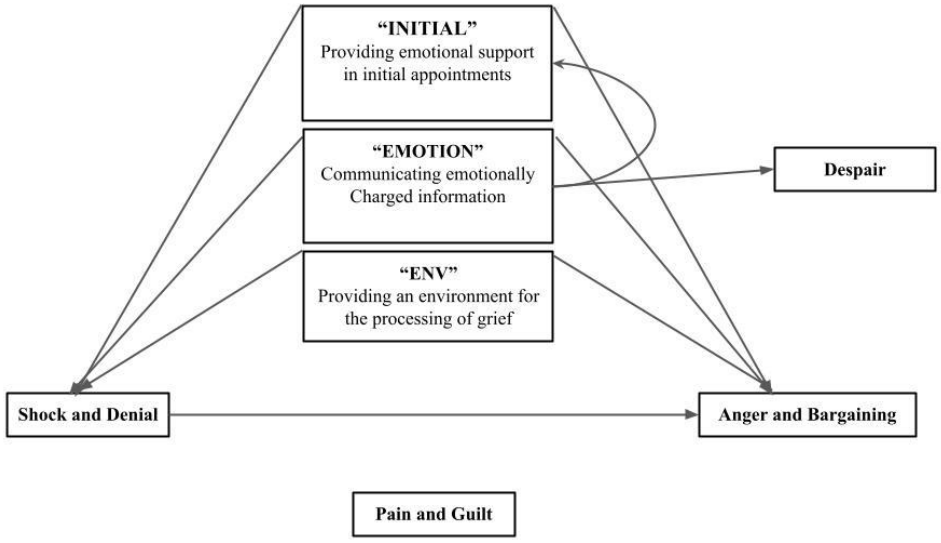

Figure 8. Dependent Variable Search: Quantifying Audiologist's Confidence Spearman Rho Illustrated. Boxes represent seven separate dependent variables that are used to quantify audiologist's confidence when providing personal adjustment counseling. Significant Spearman Correlations between variables are illustrated by connection with a line.

Confidence in communicating with families experiencing "shock and denial" and "anger and bargaining" were significantly correlated with each other ($\rho = .802$, $p < .001$). "Despair" was not correlated with any other stage of the grief cycle but was significantly correlated with an audiologist's confidence in communicating emotionally charged information, "emotion" ($r^2 = .615$, $p=.007$). Confidence communicating with families experiencing "guilt" was not correlated with any other dependent variable.

Six multiple linear regression models were analyzed, respectively for the dependent variables of 1) confidence in providing emotional support in initial appointments "initial", 2) confidence in communicating emotionally charged information "emotion", 3) confidence communicating with parents who are experiencing 'shock and denial', 4) 'pain and guilt', 5) 'anger and bargaining', and 6) 'despair'. For the purposes of our exploratory research, we did not adjust for multiple correlations because we are more interested in trends than specific confidence

values. We anticipate that meaningful results will come from our analysis, and that results will approach significance with more participants.

A linear regression revealed a significant relationship between audiologist's confidence in providing emotional support in initial appointments "initial" and the audiologist's "percent of average patient load in pediatrics" with a correlation of b= 1.175, and p= .029, seen in Table 2. The two other independent variables, "years of experience practicing audiology" and "completion of counseling coursework" were not significantly correlated with their confidence in providing emotional support in initial appointments, "initial". "Years of experience practicing audiology", "completion of counseling coursework", and "percent of average patient load in pediatrics" did not predict an audiologist's confidence when communicating emotionally charged information, "emotion". These three independent variables were also not related to an audiologist's confidence when communicating with parents experiencing "pain and guilt", "anger and bargaining', or "despair", or "shock and denial".

Variables	B	R^2	Significance	N
"Initial" and "Percent of average patient load in pediatrics"	1.175	.338	.029	13

Table 2. Significant results from linear regression. One significant relationship was found between audiologist's confidence in providing emotional support in initial appointments "initial" and the audiologist's "percent of average patient load in pediatrics".

Result 4: Interprofessional Relationships

Figure 9 illustrates participant's median responses to all questionnaire questions in block 3, 4, and 5. As seen in Figure 9, when probed about interprofessional relationships, audiologists reported similar experiences when communicating with speech language pathologists (SLPs) and physicians, but very different experiences when communicating with counseling psychologists.

Audiologists reported high confidence when communicating with SLPs and physicians about the progress of a patient, with little variability.

Block 3: Interprofessional Relationships	Confidence (%)	Frequency (%)	Importance (%)
Communicating with an speech language pathologist	Extremely (61) Q1=4 M=5 Q3=5	Very Often (50) Q1=4 M=4.5 Q3=5	Extremely (72) Q1=4.25 M=5 Q3=5
Communicating with physicians	Very (50) Q1=4 M=4 Q3=5	Very Often (39) Q1=3 M=4 Q3=4.75	Extremely (61) Q1=4 M=5 Q3=5
Communicating with a counseling psychologist	Moderately (39) Q1=2 M=3 Q3=3	Rarely (39) Q1=1 M=2 Q3=2.75	Moderately (39) Q1=3 M=3 Q3=4.75
Referring out to a counseling psychologist	Moderately (61) Q1=2.25 M=3 Q3=3	Occasionally (50) Q1=1.25 M=3 Q3=3	Very (50) Q1=3 M=4 Q3=4

Block 4: Informational Counseling	Confidence (%)	Frequency (%)	Importance (%)
Evaluating a family's ability to comply with responsibilities	Very (67) Q1=4 M=4 Q3=4		Extremely (63) Q1=4 M=5 Q3=5
Use of a social worker in the CI candidacy process		Very Often (28) Q1=1.25 M=3 Q3=4.75	Extremely (50) Q1=5 M=4.5 Q3=5
Is there a social worker on your team?	Yes (56) Q1=5 M=4.5 Q3=4		
Communicating about what receiving a cochlear implant(s) entails	Extremely (56) Q1=4 M=5 Q3=5	Always (61) Q1=3.25 M=5 Q3=5	Extremely (78) Q1=5 M=5 Q3=5
Communicating realistic expectations of language development	Extremely (44) Q1=4 M=4 Q3=5	Always (39) Q1=4 M=4 Q3=5	Extremely (67) Q1=4 M=5 Q3=5
Providing advice about creating a language rich environment	Very (50) Q1=4 M=4 Q3=5	Very Often (39) Q1=3.25 M=4 Q3=5	Very (50) Q1=4 M=4 Q3=5
Facilitating the device selection process	Extremely (44) Q1=5 M=4 Q3=5	Always (61) Q1=4 M=5 Q3=5	Very (39) Q1=3 M=4 Q3=4.75

Block 5: Low Socioeconomic Status	Confidence (%)	Frequency (%)	Importance (%)
Identifying families who are in low-SES	Moderately (39) Q1=3 M=3.5 Q3=4	Very Often (50) Q1=3 M=4 Q3=4	Very (56) Q1=4 M=4 Q3=4
Providing low-SES specic services	Moderately (44) Q1=3 M=3.5 Q3=4	On average, 45 Q1=54 M=25 Q3=73	Extremely (39) Q1=3 M=4 Q3=5

Rate Your Level of Agreement: Low-SES	Average Answer (%)
My office provides interpretation services	Yes (89) Q1=5 M=5 Q3=5
My office contributes effort to accommodate low-SES families	Strongly Agree (61) Q1=4 M=5 Q3=5
My office has a program in place to exclusively serve low-SES patients	Strongly disgree (33) Q1=1 M=2 Q3=3
I collaborate interprofessionally to provide services for low-SES families	Agree (56) Q1=4 M=4 Q3=5

Figure 9. The median, first and third quartile for responses to all questions in Block 3,4, and 5. See legend in Figure 1 for Likert scale values. As numbers increase from 1 to 5, colors change from red (1) to orange (2) to yellow (3) to green (4 and 5).

However, audiologists reported only moderate confidence when communicating with counseling psychologists. Audiologists reported they communicated with SLPs, and physicians very often, but rarely communicated with psychologists. They reported being updated frequently

by SLPs, occasionally by physicians, and rarely by psychologists about patient progress, as seen in Figure 10.

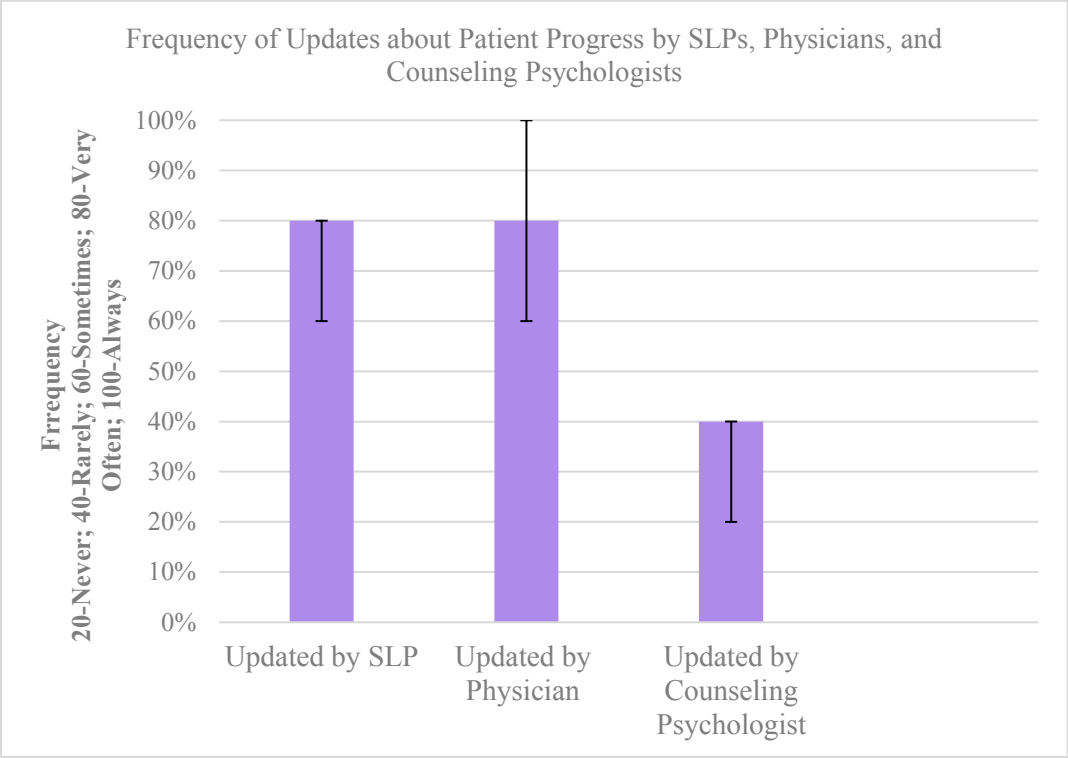

Figure 10. Frequency of Updates about Patient Progress by SLPs, Physicians, and Counseling Psychologists. Audiologists reported they communicated with SLPs, and physicians very often, but rarely communicated with psychologists. Error bars refer to first and third quartiles.

Audiologists reported communication with SLPs and physicians as very important with little variability. The importance of communication with psychologists was reported on a spectrum of moderately important (40% of participants) to extremely important (28% of participants). Half of audiologists reported that it was very important for the families of pediatric patients to receive counseling from psychologists and report referring parents for counseling. Some audiologists (28%) reported never doing this. Audiologists reported moderate confidence when referring a patient to a counseling psychologist for further grief and acceptance counseling.

Result 5: Informational Counseling

When considering counseling related to evaluating a family's ability to comply with responsibilities that cochlear implants require, what receiving this device will entail, choosing a device, and expectations for language after implantation, results revealed that audiologists are very or extremely confident. They communicated about these topics very often or always in clinical appointments. They rated their role in communicating about these topics as extremely important. Audiologists reported the highest confidence and highest frequency in communicating about what receiving a cochlear implant entails and facilitating the device selection process.

When facilitating device selection, audiologists reported that they always encouraged parents to make their own decision when selecting a device, unbiased by their personal opinion. Audiologists reported that their opinion sometimes influenced the decision of brand selection and external sound processor style, but that their guidance was very important in this process as seen in Figure 11.

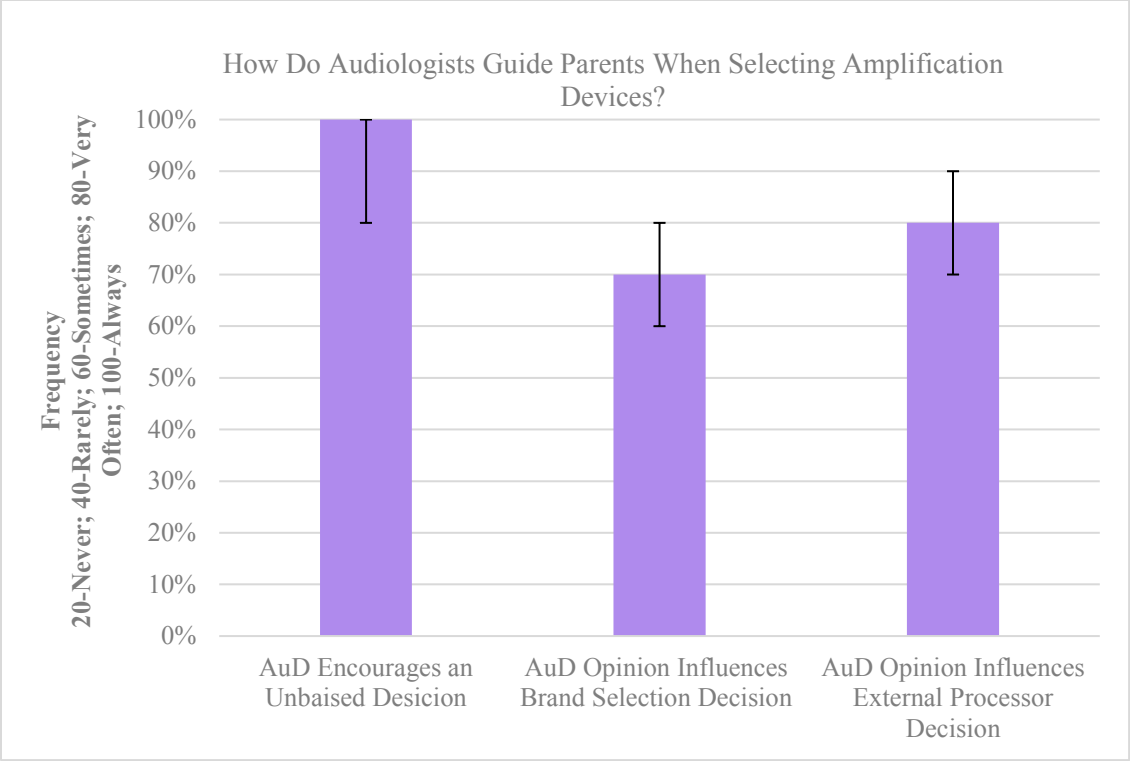

Figure 11. How do Audiologists guide Parents When Selecting Amplification Devices? Although audiologist encouraged parents to make their own decision when selecting a device, unbiased by their personal opinion, audiologist regard their guidance as "very important". Error bars refer to first and third quartiles.

Result 6: Serving Low Socioeconomic Status Patients

When probed about serving families who have a low socioeconomic status (SES), audiologists encountered these families very frequently, reported that identifying them was very important, but were only moderately confident doing so, with little variability. Audiologists reported that the services provided to low SES families were only slightly different than the services provided to their general patient base. The services that are provided most frequently for low SES families are scheduling accommodations and interpretation services, seen in Figure 12.

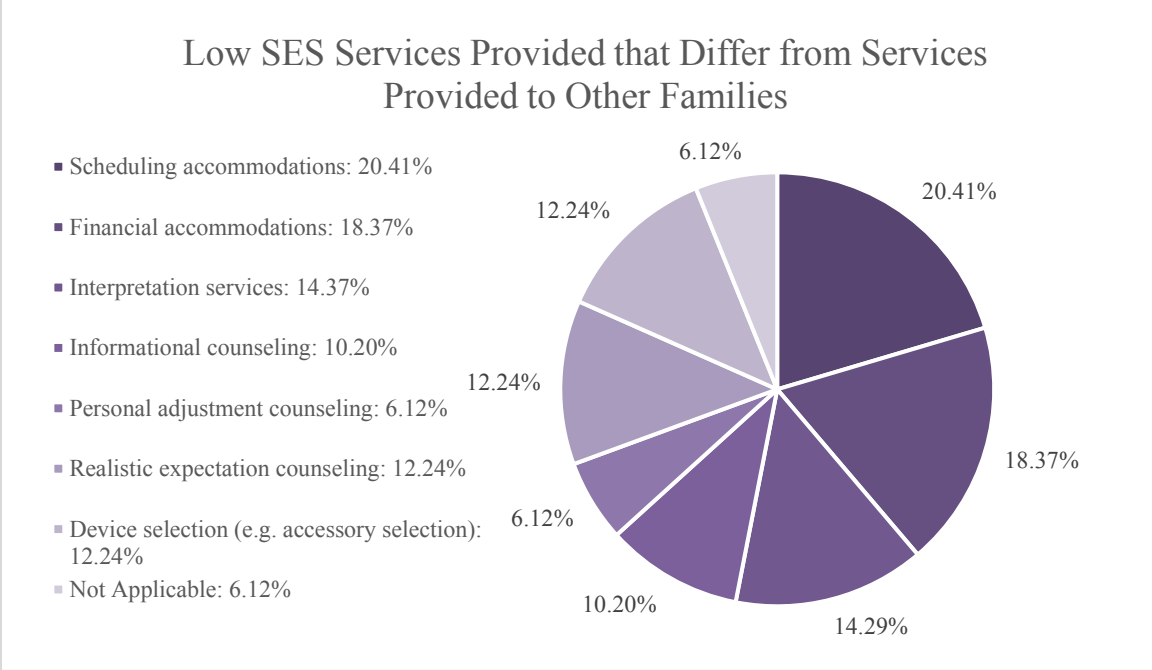

Figure 12. Low SES Services Provided that Differ from Services Provided to Other Families. The services that are provided most frequently for low SES families are scheduling accommodations and interpretation services.

Audiologists were moderately confident in providing these services. This confidence measure was spread upward, with another 48% reporting high confidence. Audiologists reported that providing low SES specific services was extremely important, and 94% reported that they collaborated with other professionals to provide services for low-SES families. 64% of audiologists strongly agreed that their office contributed effort to accommodate these families. However, on average audiologists strongly disagreed when asked if their office had a program in place to exclusively serve low-SES patients. 89% of audiologists reported that their office provides interpretations services, and 80% of these services are provided in person (20% provided over the phone), seen in Figure 13.

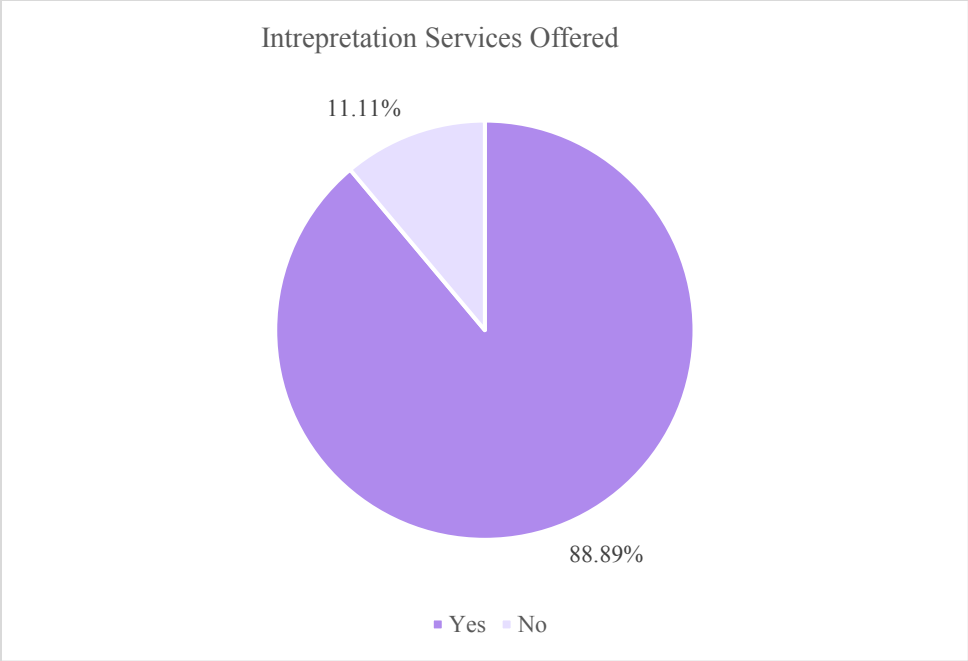

Figure 13. Interpretation Services Offered. 89% of audiologists reported that their office provides interpretations services, and 80% of these services are provided in person (20% provided over the phone).

Discussion

We distributed a questionnaire to pediatric audiologists with hopes to identify numerous factors affecting the likelihood of providing counseling services, (such as “years of experience practicing audiology”, “completion of counseling coursework”, and “percent of average patient load in pediatrics”) to learn more about the reality of clinical practice. Our questionnaire probed pediatric audiologists on the following topics: emotional support; personal adjustment counseling; grief; resources available for families; graduate preparation; scope of practice; inter-professional relationships; realistic expectations; device selection; and low SES resources, in hopes to uncover trends in the provision of counseling in clinical practice.

Our results revealed that the percent of an audiologist’s patient load in pediatrics was significantly correlated with confidence in providing personal adjustment counseling. In 2008 a found that the impact of experience played a significant role in the counseling performance of new versus experienced clinicians, however in our study the only variable that was significantly correlated with confidence in providing personal adjustment counseling was percent of patient load in pediatrics. Years of experiences in clinical practice and completion of a counseling course in graduate school were not significantly correlated to high confidence when counseling.

When asked general questions about navigating emotional situations during clinical appointments, audiologists reported high confidence. When asked how important an audiologist's guidance is when parents are experiencing an emotional reaction, audiologists consistently reported their role was highly important. Given this result, we can assume that audiologists are likely to attempt use their depth of knowledge in the subject of audiology to advise their interpersonal skills, responding with empathy, being keenly aware of the needs of the patient, and anticipating those needs based on the reality of their patient’s impairment all scenarios where a patient is experiencing an emotional reaction during a clinical appointment.[5] In 2015 when Karen Muñoz, Ed.D. and her colleagues asked parents of hearing impaired children to report the challenges they faced on a daily basis, they included daily hearing aid management and emotional

adjustment,[26] supporting audiologist's report that providing personal adjustment counseling to parents is important and relevant.

In the second block of the questionnaire when audiologists were probed about navigating appointments when patients are experiencing more specific emotions, their confidence becomes more variable. Audiologists are confident when counseling parents experiencing the beginning stages of the cycle of grief, such as the initial shock and pain and the guilt they may feel before they understand the etiology of hearing loss. Audiologists feel the least confident when they encounter a parent experiencing the 'despair' stage of the grief cycle.

Figure 5 displays that an audiologist's confidence when communicating with a parent experiencing despair is only correlated with the responses to one other question: their confidence when communicating emotionally charged information to parents "emotion". Possible explanations for this lack of confidence include that despair is a complex emotion, this emotion is seen least often in clinical appointments, and audiologists rate their role in counseling parents experiencing despair as less important in comparison to the rest of the stages of grief. Mary Friehe, Ph.D. published an article in 2003 for the purpose of preparing speech language pathologists to aid these parents. She found that society may not validate a family's grieving process while they work through this recurring sense of loss associated with a communication disorder.[15] Due to this juxtaposition, it is important that families are given permission to grieve by a clinician, specifically their audiologist. She called for further research to understand how clinician's counsel patients experiencing each stage of grief. Dr. Friehe calls for further research on episodi in response to a communication disorder. Our results suggest that audiologists may have room to improve here in order to serve parents in all stages of grief equally.

In order for audiologists to deliver appropriate personal adjustment counseling to parents, it is necessary they can predict and understand the emotions that parents may feel. A study in 1999 which examined the steady hearing-aid return rate explored why adult patients frequently reported dissatisfaction with the quality of patient's interactions with audiologists as one of

several reasons for returning their hearing aids. Oftentimes in conversations between patients and audiologists, patients do not seek technical information, but rather express an emotional concern about their hearing loss. The ability to tell the difference is necessary to respond properly to patients in need.[12] They determined that audiology graduate students had great trouble differentiating between content messages and emotional messages from patients and responding to each type of message appropriately. Eighty-eight percent of the time, students provided content-heavy responses to messages of emotion from patients (a conversation mismatch). This indicated audiologists would likely provide technical information in response to a non-technical (emotional) comment. In doing so unintentionally present themselves as maintaining an uncaring professional distance, or "wearing an expert mantle" instead of building authentic relationships.[12]

Our study revealed that audiologists appear to have an adequate understanding of the emotions that accompany hearing loss, as audiologists seem to understand that grief is cyclic. The term episodic grief was introduced in counseling psychology literature over fifty years ago. It is less well defined and has been conceptualized best as a pervasive cyclic experience., Our study revealed100% of audiologists either disagreed or strongly disagreed that the grief cycle that hearing parents of pediatric patients travel through is linear and 88% agreed or strongly agreed that grief was instead cyclic in nature. . Audiologists reported that on average 40% of appointment time is spent on personal adjustment counseling. It is unclear as to whether or not there is adequate appointment time to address the emotions of family members, as responses were varied.

Seventy-seven percent of audiologists either agreed or strongly agreed that personal adjustment counseling is within the scope of audiology. The other 22% were either neutral or disagreed that this is within our scope of practice. ASHA's scope of practice for audiologists clearly states that it is within the scope of practice in audiology to infuse emotional support during interactions with families.[3,7] Despite clear guidelines in the ASHA's audiology scope of practice, literature reveals that some professionals have a misunderstanding of personal

adjustment counseling, and “believe it is solely the role of a counseling psychologist to serve patients who have chronic issues with life adjustment.[11] However, the goal of counseling is not to resolve our patients’ issues, but rather acknowledge they exist in an empathetic manner. In 1957, Carl Rogers, the father of client-centered therapy, hypothesized that if there is a relationship between the therapist and patient in which the therapist communicates empathy, that relationship alone may be capable of producing positive change in the client. Counseling skills are preeminent in establishing and maintaining strong relationships with parents of patients.[7,11] If an audiologist is aware that a positive relationship alone can produce a greater acceptance of their child’s hearing loss and increase the effectiveness of treatment,[11] the audiologist should unquestionably prioritize personal adjustment counseling. Our results support the possibility of a misunderstanding of counseling in the field of pediatric audiology seen in the literature.

“The discrepancy between the scope of practice and available practice guidelines persists, as there are no practice guidelines related to necessary knowledge and skills for counseling. ASHA’s scope of practice for audiologists also states that there isno data to establish whether counseling training is sufficient in preparing audiologist to counsel patients".[34,1] In 2003 a questionnaire of SLP student’s opinion about their scope of practice, 50% of the respondents agreed that it was within their role to provide counseling services and 30% disagreed that this was part of their role. Although these differences cannot be generalized from speech language pathology to audiology, no other study has probed audiologists on the same topic.[5] The discrepancy cited in literature is seen in these results, as there isn’t a unanimous response as to whether audiologists are expected to provide personal adjustment counseling.

It is clearly cited in literature that there are several negative consequences when audiologists miss the opportunities to acknowledge a patient’s emotional concerns that impact likelihood of follow-up, such as giving parents the impression that audiologists do not understand the family’s concerns or have time to attend to them.[12] In 2018 two counseling educators Kelly Beck, Ph.D. and Jamie Kulzer, Ph.D. published an article recommending counseling skills to

audiology students. They emphasize that the relationship between an audiologist and their patients, or the therapeutic alliance, has a great influence on patient outcomes. Specifically, "patients who report a positive, trusting relationship with their clinicians are more likely to demonstrate treatment compliance and improved health outcomes compared to patients who do not report a strong relationship with their clinicians".

Only 61% of our participants reported that they have the skills and knowledge necessary to provide adequate personal adjustment counseling. This result is understandable, as much of an audiologist's education focuses on preparing them to see adult rather than pediatric patients. When an audiologist identifies a hearing loss in an adult, it is hardly a surprise because that patient sought out an audiologist due to a concern with their hearing. Also, most hearing loss in the adult population has a gradual onset, declining over many years before it warrants the attention of a hearing health care professional.[9] In these appointments a personal adjustment counseling skills are not useful. However, in appointments with parents of pediatric patients the situation is very different. When a hearing loss is identified in a child, parents are normally surprised and experience a sense of loss. It has been estimated that 70% of these family members will have moderate to severe emotional reactions.[16]

ASHA's practice policy *"Guidelines for Audiologists Providing Informational and Adjustment Counseling to Families of Infants and Young Children With Hearing Loss Birth to 5 Years of Age"* acknowledged that historically, little has been done to equip audiologists with these skills, and that the transition from a masters to a doctorate program may begin to remedy this problem.[3] The results from this questionnaire do not appear to support ASHA's expectation, as 39% of respondents reported that they did not have the necessary skills to provide adequate personal adjustment counseling.

A majority (67%) of audiologists received a counseling course as a part of their graduate education in audiology, however most of their counseling courses (61%) did not involve role-play experiences. A counseling course that does not give students the opportunity to participate in

role-playing scenarios where students can practice the skills they learn in class is not considered to be effective in preparing students for real world scenarios.[11, 30, 7, 14] Taking a course wasn't significantly correlated with higher confidence during personal adjustment counseling. It is unclear if this is because 61% of counseling courses were ineffective because they didn't have role playing opportunities that were deemed essential components of a course in counseling. It appears that there is room for improvement in standardizing the quality and effectiveness of counseling courses in audiology coursework. This finding is supported by literature, as the number of audiology programs that include a course in counseling has increased since the transition to doctorate level curriculum (to 75%), however it is uncertain the national percentage of programs which both offer and require this course for graduation. Due to this, overwhelming evidence still suggests that "audiology students receive less training in counseling than is necessary and feel unprepared in the area of counseling".[14, 15, 21, 25, 27]

Another place for improvement that was uncovered in this questionnaire is audiologist's lack of comfort when communicating with and referring patients to counseling psychologists in comparison to physicians and speech language pathologists (SLPs). When asked how important it is for pediatric CI patients and their families to receive counseling from psychologists, audiologists responded that this was very important, however they report referring families to counseling psychologists occasionally, and doing so with moderate confidence. Audiologist's lack of confidence may be attributed to the report that audiologists communicate with psychologists less often than other professionals. The discrepancy seen between how important we consider access to counseling to be and the priority we give it in clinical practice was uncovered by John J Whicker Au.D., Ph.D., and his colleagues in 2018. They acknowledged the physical, emotional, and financial burden on parents of infants with hearing loss and explored audiology students' perspectives on counseling this population. They found that students generally appreciate the importance of counseling in audiology, however, data suggests that students receive unstructured and irregular support in developing counseling skills.[34] When serving

low SES populations, the likelihood of audiologists to provide in-person interpretation services was high. The accommodations offered for low SES families most often by an average audiology clinic are scheduling accommodations and audiologists reported that offering these accommodations was extremely important.

This study was completed for the purposes of our exploratory research and limitations include a small sample size (17 participants). In our analysis we did not adjust for multiple correlations because we were more interested in trends than specific confidence values. We anticipate that meaningful results will come from our analysis, and that results will approach significance with more participants, though further studies may aim to increase the sample size in order to draw more meaningful conclusions.

Conclusions

Literature reveals that the field of audiology is making a transition from a medical model to a patient centered approach. Although audiologists are first and foremost diagnosticians, "to be truly impressive, a clinician must make a distinction between the client's thoughts and feelings[32]. Based upon the results of our questionnaire, we can assume that audiologists are likely to attempt to provide counseling services in all scenarios where a patient is experiencing an emotional reaction during a clinical appointment. When interacting with parents of pediatric patients experiencing despair, audiologist appear to be the least confident. The reason for this is unclear, though possible explanations include that despair is a complex emotion, this emotion is seen least often in clinical appointments, and audiologists rate their role in counseling parents experiencing despair as less important in comparison to the rest of the stages of grief. Audiologist's reports about grief are more variable than other stages of the grief cycle, therefore the continuation of this questionnaire in the future with more respondents is recommended. Our questionnaire also revealed that it is unclear as to whether there is adequate appointment time to address the emotions of family members, as responses were varied.. This questionnaire also revealed that almost half of respondents did not have the necessary skills to provide adequate personal adjustment counseling. Respondents offered several text-box answers to elaborate or provide clarity to their responses, though they were not analyzed for the purpose of this paper. Future clinicians may find that these text responses offer insightful information about the variance seen in this conclusion.

Our questionnaire also revealed that taking a counseling course wasn't significantly correlated with higher confidence during personal adjustment counseling. It is unclear if this is because 61% of counseling courses were ineffective because they didn't have role playing opportunities that were deemed essential components of a course in counseling. It appears that there is room for improvement in standardizing the quality and effectiveness of counseling

courses in audiology coursework, at least within the audiology programs of the questionnaire's participants.

Future data collection should work to increase the questionnaire sample size and expand the regions where participants are found so that more general conclusions can be made from the data. Further questionnaires may focus on topics which revealed unclear results in this study. This study revealed that it is unclear whether or not there is adequate appointment time to address the emotions of family members. In future studies it would be interesting if audiologists were asked more specific questions about how time is delineated during appointments. Separate measurements for each appointment type, such as audiologic evaluations, hearing aid fittings, and CI activations / subsequent mapping appointments may offer more clarity on this measure.

We also discovered it is unclear whether counseling training is sufficient in preparing audiologist to counsel patients, and how counseling coursework with and without role playing opportunities correlates to higher confidence during personal adjustment counseling. We also discovered there are unclear expectations within professional circles for providing counseling during appointments. ASHA acknowledges that audiologists are the most equipped professionals to serve the emotional struggles of parents with children with hearing loss, though ASHA's Code of Ethics reminds clinicians that they are only to practice in areas in which they are competently trained.[5] At the ASHA Education Summit in 2016, the lack of standardized counseling preparation for audiology students was recognized. They acknowledged that future research is needed to improve preparation in audiologic counseling, specifically.[1]

Additional research may explore how best to educate and prepare audiologists to provide adequate personal adjustment counseling, as our results revealed only 61% reported that they have these skills. This may include searching for resources that already exist to train pediatric audiologists to provide emotional counseling. It may also include collaborating with professionals within the field of counseling psychology to create a counseling course specifically targeted toward pediatric audiologists. One article suggests a 3-credit-hour course that reviews both the

theoretical basis and clinical applications of counseling, preferably with role-playing scenarios where students can practice the skills they learn in class.[11] Though literature suggests that an interdisciplinary approach where psychologists work together with audiologists will be necessary to develop a course that will meet American Speech Language and Hearing Association (ASHA) guidelines and adequately prepare clinicians.[28]

Following the collection of data to on these topics, it would be beneficial for future studies to aim to draft and publish example practice guidelines related to necessary knowledge and skills for counseling within the field of pediatric audiology, as our results reveal there isn't a unanimous understanding as to whether audiologists are expected to provide personal adjustment counseling. Counseling guidelines may be especially beneficial for clinics or hospital systems who do not have the patient support staff available such as social workers, audiology assistants, insurance pre-certification staff, and appointment coordinators. Without support staff these extra services may that fall on the audiologists to provide, limiting the time they spend with patients providing quality care.

The discrepancy seen between how important we consider **access** to counseling to be and the priority we give it in clinical practice was uncovered and mirrored in past literature and is seen in our results.[34] Future studies may consider probing audiologists on what processes exist for providing referrals to counseling psychologists as compared to ENT physicians or primary care physicians in hopes to understand why audiologists lack confidence when making referrals to psychologists.

.ASHA's call for research to investigate the effectiveness of counseling preparation and delivery when serving families with newly identified infants with hearing loss remains.[3] With continuation of this questionnaire we anticipate that meaningful results will continue to surface from analysis of participant's text responses, and that results will approach significance as our sample size increases.

Appendix I: Extended Literature Review

Existing studies on this personal adjustment counseling have uncovered a lack of quantitative data on pediatric audiologist's self-reported practices. The only study specifically targeting the counseling of parents of pediatric patients was conducted by Karen Muñoz, Ed.D. and her colleagues in 2015. They measured responses from parents rather than audiologists. Only half cited that they had enough time to talk about their emotions when speaking with their audiologist(s), and 69% reported the audiologist did not help them know what to expect related to emotions about their child's hearing loss.[26] However, these responses only supply us with half of the story – as the audiologist's perspectives remain undocumented.

In fact, no data exists specifically probing pediatric audiologists on how they counsel hearing parents of hearing impaired children. There are two published research studies which examined counseling in clinical practice from the perspective of the clinician, and neither of them targeted the population of pediatric audiologists. The first of these studies was conducted by Vinaya Manchaiah, Au.D., and his colleagues in 2019. They published a descriptive review of the communication between an audiologist, patient, and patient's family members during initial audiology consultation. They uncovered that audiologists dominate the conversation during audiology consultations and do not take advantage of the opportunity to develop patient-centered communication and shared decision making.[24] However, this review only measured audiologist's interactions with adult patients.

In appointments with adults the setting is vastly different and naturally centered around informational counseling. In these appointments audiologists often explain how hearing aid's function, how to handle and clean them, their benefits, etc. When an audiologist identifies a hearing loss in an adult, it is hardly a surprise to the patient because that patient sought out an audiologist due to a concern with their hearing. Also, most hearing loss in the adult population has a gradual onset, declining over many years before it warrants the attention of a hearing health

care professional.[9] In appointments with parents of pediatric patients the situation is very different. When a hearing loss is identified in a child, parents are normally surprised and experience a sense of loss. It has been estimated that 70% of these family members will have moderate to severe emotional reactions.[16] Although the conclusions from Dr. Vinaya Manchaiah may lead us to believe that audiologists are poor counselors; results from this study cannot be generalized to audiologist's interactions with parents of hearing impaired children.

A second study that examined counseling in clinic practice from the perspective of the clinician was conducted in 1997 by Martha Ann Rosenberg, Ph.D., and offered valuable insight. She revealed that many students and professionals in the field of speech language pathology feel uncomfortable dealing with emotion in their clinical work, creating difficulties in the therapeutic relationship given that people often initially react to loss at an emotional level.[28] These results are from the perspective of speech language pathology students rather than practicing pediatric audiologists, and therefore cannot be generalized to audiologist's perspectives of dealing with emotion in clinical work.

What is Personal Adjustment Counseling?

Counseling in audiology includes both personal adjustment counseling and informational counseling. We can begin to understand personal adjustment counseling by understanding the difference between these two. Informational counseling can be understood as the process used for information gathering, information giving, and problem solving as it relates to a hearing impairment.[28] Informational counseling encompasses much of the expertise that an audiologist offers patients, such as explaining the nature of a hearing impairment, the treatment plan, the procedure for assessing hearing in children, and the prognosis. The first two domains of counseling used in our definition of counseling in audiology (aiding decision making and communicating new information) are types of informational counseling. However, informational

counseling only defines part of the communication between an audiologists and parents, especially those who are surprised to learn of the onset of their child's hearing loss.

Counseling in audiology clinical practice should also encompass helping families cope with the emotions that are often experienced as a result of a communication disorder.[3] Personal adjustment counseling can be defined as helping people cope with attitudes, feelings and problems that are related to the communication disorder.[28] This exchange between an audiologist and parent can also be explained as "a mutually educative process which allows for the exchange of both information and affect".[23] When an audiologist focuses on the emotions of parents is not to say that an audiologist takes on the role of a licensed counselor, but rather that they use their depth of knowledge in the subject of audiology to advise their interpersonal skills, responding with empathy, being keenly aware of the needs of the patient, and anticipating those needs based on the reality of their patient's impairment. It is also important to note that counseling in audiology refers specifically to helping normal individuals cope with normal problems.[27] It is not within the scope of an audiologist to provide professional help to a patient suffering from acute psychological distress.[5]

A study by Kris English, Ph.D. and his colleagues in 1999 examined the steady hearing-aid return rate cited throughout literature in the 1990s. Dr. English explored why adult patients frequently reported dissatisfaction with the quality of patient's interactions with audiologists as one of several reasons for returning their hearing aids. They determined that audiology graduate students had great trouble differentiating between content messages and emotional messages from patients and responding to each type of message appropriately. 88% of the time, students provided content-heavy responses to messages of emotion from patients (a conversation mismatch). This indicated audiologists would likely provide technical information in response to a non-technical (emotional) comment. In doing so an audiologist can unintentionally present themselves as maintaining an uncaring professional distance, or "wearing an expert mantle" instead of building authentic relationships.[12] Oftentimes in conversations between patients and

audiologists, patients do not seek technical information, but rather express an emotional concern about their hearing loss. The ability to tell the difference is necessary to respond properly to patients in need.[12]

Audiologists often overlook opportunities to address the impacts that hearing loss will have on patient's families.[14] A review of audiologist's communication with adult patients in 2015 found that patients' psychosocial concerns were rarely addressed.[18] There are several negative consequences when audiologists miss the opportunities to acknowledge a patient's emotional concerns. They can give parents the impression that they do not understand the family's concerns or have time to attend to them.[12]

There are several factors that may impact an audiologist's ability to exhibit good listening skills. One of these factors is clinical experience.[26] In 2008 Daphne T. Phillips, Ph.D. and Lisa Lucks Mendel, Ph.D. investigated counseling training that audiology and speech language pathology graduate students received. They found that the impact of experience played a significant role in the performance of new versus experienced clinicians. The clinicians with less experience practiced fewer counseling behaviors than did experienced ones.[27]

Families Benefit from Personal Adjustment Counseling.

Episodic vs Stage Grief

Parents often experience trauma and a persistent sense of loss after their child is diagnosed with a severe communication disorder.[16] Mary Friehe, Ph.D. published an article in 2003 for the purpose of preparing speech language pathologists to aid these parents. Grief is a "dynamic, complex, and psychosocial process produced by forced change".[31] It is important to understand how we conceptualize grief and how our common understanding of grief differs significantly from the way parents of children with hearing loss may experience their emotions.

The most understood type of grief is stage grief. It is commonly associated with response to the death of a loved one. Stage grief is made up of a series of stages that are approached and

resolved one at a time. After the death of a loved one, society typically grants between one and three years for resolution to occur and symptoms of grief to ease.[16]

In contrast, the grief that a family will experience as they cope with the loss of a "perfect" child is defined by the term episodic grief. Episodic grief is defined as a prolonged process with no predictable end and perhaps no complete resolution, as the source of loss remains.[29] The term episodic grief was introduced in counseling psychology literature over fifty years ago in response to how families coped with children born with severe intellectual disability. It is less well defined and has been conceptualized best as a pervasive cyclic experience.[16] Most notably, it is often revisited at critical life junctures, such as the decision to incorporate sign language into a family's communication, entrance into public education, choosing extracurricular activities, supporting children through harmful social interactions with peers, and future career exploration.[35] The progression of language development in a child with a severe hearing impairment is unpredictable, as the success of cochlear implants is dependent on several factors. There are several modes of communication that a family may integrate in order to maximize a child's development of age-appropriate language, all of which may be foreign to parents at the time of initial diagnosis.

Society's expectations for the processing of episodic grief are more ambiguous than for stage grief. A society which emphasizes the positive nature of disability and stresses the need for inclusion and equity works to uphold the dignity of all people. However, the convergence between society's celebration and a parent's initial processing of grief is not clearly understood. Ultimately, society may not validate a family's grieving process while they work through this recurring sense of loss.[15] Due to this juxtaposition, it is important that families are given permission to grieve by a clinician, specifically their audiologist. Dr. Friehe calls for further research on episodic grief in response to a communication disorder. According to a study revealing the grieving process of families whose children experience traumatic brain injuries:

when families actively addressed their emotions early in the grieving process, they were less at risk for later dysfunction[33]

The impact of direct contact with a clinician that provides empathetic personal adjustment counseling effects patient outcomes. By having their emotional needs addressed, families may have an easier time practically integrating new information and are more likely to make educated and thorough decisions regarding their child's chosen communication mode. In 2018 two counseling educators Kelly Beck, Ph.D. and Jamie Kulzer, Ph.D. published an article recommending counseling skills to audiology students. They emphasize that the relationship between an audiologist and their patients, or the therapeutic alliance, has a great influence on patient outcomes. Specifically, "patients who report a positive, trusting relationship with their clinicians are more likely to demonstrate treatment compliance and improved health outcomes compared to patients who do not report a strong relationship with their clinicians". Not only does this relationship support the emotional needs of parents, but it will likely improve performance with use of hearing instruments and language development in their children.[7]

Effects of Unresolved Grief

It is widely cited that experiences of normal grief can manifest into clinical level depression if left unresolved.[17] Mothers and fathers typically experience different reactions to episodic grief. Mothers typically experienced grief more intensely because the day to day affairs of anticipating their child's needs were normally their responsibility. Fathers more often experienced grief related to comparing their child to typically developing children.[17]

Not only does grief negatively impact parents, but children are also impacted by their family's grief. Parent's unresolved grief and negative emotions will hinder their involvement, likely resulting in slowed progress of language development for children.[16] This is why the presence and persistence of personal adjustment counseling is necessary for these parents. Simply informing parents of their child's hearing test results and sending them home with an

informational pamphlet is missing an opportunity to interrupt the cycle of grief that is likely to ensue. Warnings of the negative effects of unresolved grief in the lives and families of patients have been adequately cited, yet the available literature on the reality of practice to reveal if we support these families is lacking.[18]

The Scope of Practice for Clinical Audiologists

The scope of practice of audiologist's outlined by the national organization ASHA was last updated in January 2004.[5] It currently states that audiologists serve in a number of roles outside of "clinician", including administrator, researcher, and therapist. The practice policy *"Guidelines for Audiologists Providing Informational and Adjustment Counseling to Families of Infants and Young Children with Hearing Loss Birth to 5 Years of Age"* was developed by an ASHA working group and approved by the ASHA Board of Directors four years later in February 2008. This policy states that it is within the scope of practice in audiology to infuse emotional support during interactions with families. It goes on to acknowledge that historically, little has been done to equip audiologists with these skills, and that the transition from a masters to a doctorate program may begin to remedy this problem.[3] They conclude by saying it will be important for their professional organization to monitor the development of this coursework for audiologists to be prepared to serve the pediatric population. Unfortunately, the provision of this coursework is unknown.

ASHA's call for research to investigate the effectiveness of counseling preparation and delivery when serving families with newly identified infants with hearing loss still remains unanswered. "Ten years later the discrepancy between the scope of practice and available practice guidelines persists, as there are no practice guidelines related to necessary knowledge and skills for counseling, and no data to establish whether counseling training is sufficient in preparing audiologists to counsel patients".[34]

Although it is encouraging that ASHA acknowledges that audiologists are the most equipped professionals to serve the emotional struggles of parents with children with hearing loss, ASHA's Code of Ethics reminds clinicians that they are only to practice in areas in which they are competently trained.[5] At the ASHA Education Summit in 2016, the lack of standardized counseling preparation for audiology students was recognized. They acknowledged that future research is needed to improve preparation in audiologic counseling, specifically.[1]

Professional associations have designated resources to explore ways to develop new competency measures into audiologic education. Despite this, confusion over our scope of practice in regard to personal adjustment counseling, remains.[1] In a questionnaire of SLP student's opinion about their scope of practice, 50% of the respondents agreed that it was within their role to provide counseling services and 30% disagreed that this was part of their role. Although these differences cannot be generalized from speech language pathology to audiology, no other study has probed audiologists on the same topic. The differences in the students' responses warrant a call for further research to identify why they exist, and if they change with increased experience in the field, and if they are also seen in the field of audiology.[28]

Referrals to Counseling Psychologists

ASHA's practice policy "Guidelines for audiologists providing informational and adjustment counseling to families of infants and young children with hearing loss birth to 5 years of age" clearly states that audiologists need to be observant of families suffering from emotional responses that "continue for lengthy periods of time and/or become more acute over time" because these emotions will warrant a referral to a counseling psychologist.[3] In a questionnaire of SLP graduate students, the majority reported they would counsel and/or refer clients who experienced depressed mood, denial about the communication disorder, or feelings of shame and guilt about the communication disorder.[28] However, they reported "in real-life clinical practice it

is difficult to make a distinction between normal psychosocial responses to audiologic conditions and serious comorbid mental health conditions.[7]

Distinction from Counseling Psychologists

There is overlap between the scope of practice for audiologists and counseling psychologists, as an essential role of both professions is to counsel related to psychosocial adjustment to disability.[7] Despite clear guidelines in the ASHA's audiology scope of practice, some professionals believe that it is not the role of an SLP or audiologist to "resolve all of (their) client's conflicts".[11] Instead, they believe it is solely the role of a counseling psychologist to serve patients who have chronic issues with life adjustment.[11] This argument is flawed due to its misconception of what personal adjustment counseling is. The goal of counseling is not to resolve our patients' issues, but rather acknowledge they exist in an empathetic manner. In 1957, Carl Rogers, the father of client-centered therapy, hypothesized that if there is a relationship between the therapist and patient in which the therapist communicates empathy, that relationship alone may be capable of producing positive change in the client. Several decades later, studies have confirmed that more than 50% of treatment effects in counseling psychology result from the therapeutic relationship, as opposed to only 10% of effects resulting from therapeutic techniques.

Counseling skills are preeminent in establishing and maintaining strong relationships with parents of patients.[7,11] If an audiologist is aware that a positive relationship alone can produce a greater acceptance of their child's hearing loss, the audiologist should unquestionably prioritize personal adjustment counseling. The argument that an audiologist's job isn't to resolve their patient's issues becomes quite irrelevant, as assisting patients with the emotional impact of their child's hearing loss will likely increase the effectiveness of treatment.[11]

The effectiveness of amplification (such as hearing aids and cochlear implants) is contingent on the waking hours a child wears them. Amplification devices are useless if a child doesn't wear them. Increased wear-time with amplification is directly related to improved

language development. A parent's ability to make hearing aids or cochlear implants a priority, introduce a language rich environment into their home, and consistently come to appointments all require effort. When a patient feels as though their concerns are understood and respected, they are more likely to participate actively in and out of the appointment, improving adherence to device management.[14] The opposite is true for patients who have no relationship with their audiologist. Neglecting the human dynamics of hearing loss can cause poor patient satisfaction and inconsistency in parent's adherence to audiologist recommendations.[14] Speech language pathologist and audiologist's role in counseling are essential to facilitate behavioral changes.[9, 32]

Progression Past the Medical Model

Counseling in audiology has historically utilized a medical model with an emphasis on providing informational counseling to drive service delivery. Historically, audiologists rarely provided emotional support.[3] Utilizing the medical model had advantages in the 1960s before audiology and speech language pathology were well established professions. In order to establish scientific credibility, the scope of audiology was defined in more narrow technical terms. The role of an audiologist relating to family-oriented approaches to counseling wasn't emphasized.[22] Since then, many speech language pathologists have recognized the fact that communicative disorders cannot be successfully treated in isolation from the emotions that accompany them.[28] The field of audiology is making the same transition from a medical model to a patient centered approach. Although audiologists are first and foremost diagnosticians, "to be truly impressive, a clinician must make a distinction between the client's thoughts and feelings.[32]

When Karen Muñoz, Ed.D. and her colleagues asked parents of hearing impaired children to report the challenges they faced on a daily basis, they included daily hearing aid management and emotional adjustment.[26] The medical model in audiology is focused on a patient's audiological problems and symptoms, whereas a patient-centered approach is no longer entirely prescriptive in nature, and recognizes the importance of the patient's social,

psychological, and physical well-being.[14, 28] This transition is necessary for audiologists working with parents of pediatric patients.

Counseling Instruction as a Part of Graduate Coursework

The discrepancy between how important we consider counseling to be and the priority we give it in clinical practice was uncovered by John J Whicker Au.D., Ph.D., and his colleagues in 2018. They acknowledged the physical, emotional, and financial burden on parents of infants with hearing loss and explored audiology students' perspectives on counseling this population. They found that students generally appreciate the importance of counseling in audiology, however, data suggests that students receive unstructured and irregular support in developing counseling skills.[34]

In 1986 Culpepper, Mendel, and McCarthy found that only 12% of university Communication Sciences and Disorders programs in the United States offered coursework and practice in counseling. Almost 10 years later in 1994 the three authors repeated their study and found that still, only 22% of the audiology programs required a counseling course.[9] 13 years later in 2017 (well into the transition from master to doctorate level audiology requirements) 40 of the 53 (75%) of Au.D programs surveyed offered a counseling course.[34] Although the number of audiology programs that include a course in counseling has increased since the transition to doctorate level curriculum, it is uncertain the national percentage of programs which both offer and require this course for graduation. Due to this, overwhelming evidence still suggests that "audiology students receive less training in counseling than is necessary and feel unprepared in the area of counseling".[14, 15, 21, 25, 27] According to *2020 Standards and Implementation Procedures for the Certificate of Clinical Competence in Audiology,* Standards II-D: Counseling, and II-F: Pediatric Audiologic (Re)habilitation, knowledge and clinical experience in personal adjustment counseling is required for Clinical Certification in Audiology and Speech-Language Pathology.[4]

There is a wide array of evidence that audiologists desire more access to counseling coursework as a part of their graduate degree. The majority of the audiology fellows (87%) surveyed in 1986 felt that graduate schools should be responsible for providing training in counseling.[11] Thirty years later, in 2016, over 50% of pediatric audiologists (regardless of their previous counseling coursework) indicated a desire for more training in counseling skills in order to support parents' acclimate to the new responsibilities of raising a hearing impaired child.[25] Speech Language Pathology graduate students share the same opinion, desiring further counseling training focusing on the full breadth of needs of their patients with communication disorders.[28] It is predicted that more access to counseling training will produce audiologists who will be more at ease in these clinical scenarios.[11] Even though counseling is understood to be important in the field of audiology, no specific guidelines for counseling instruction are provided to audiology graduate programs.[14]

Finai, J., et al. acknowledged that the lack of counseling-related guidelines is responsible for the wide variability of counseling skills among audiology graduate students. To address this training gap, their study measured audiology graduate students' counseling skills during roleplaying and during sessions with patients. Then, they provided feedback on how the students performed in these sessions. They found that this method was effective in providing counseling training to graduate students, however this study only had five participants, and they enrolled in an audiology program which was more counseling focused than most audiology programs, therefore these results (and any results which explore counseling coursework in audiology programs) may not be generalizable to the average audiology student. More research is needed on ways to improve audiology student's counseling skills.[14]

Effects of a Lack of Counseling Coursework

Audiology coursework provides students with the content used in informational counseling. Providing emotional support to families involves different communication skills than

informational counseling, including the ability to talk less and listen actively.[14] Only coursework in counseling will prepare students to be good listeners, as Robert Sweetow, Ph.D. remarks, "not all students (or audiologists, for that matter) are good listeners".[30] A study that examined communication patterns during case history conversations found that audiologists interrupted patients and asked closed questions (yes or no questions), indicating that communication skills of audiologists aren't appropriately developed.[14] Although knowledge of audiology will prepare audiologists to use best practices to diagnose hearing loss, these skills do not translate into competent communication and counseling abilities.[30]

In 1999 a study by Kris English, Ph.D. and her colleagues measured the counseling skills of two cohorts of audiology graduate students before and after taking a counseling course. They discovered that without a course in counseling, audiology graduate students exhibited great trouble differentiating between content messages and emotional messages.[12] These mistakes likely occurred because success in audiology graduate coursework is measured in terms of adequately explaining high-level technical information to clinical educators and professors.[12]

A lack of understanding of the spectrum of human emotion provided through courses in counseling may also cause audiologists to misinterpret the emotional reactions of parents. For example, a patient may present with anger as a result of fear and a loss of control. Anger may be misinterpreted by the audiologist as a judgment of her competency if she is not trained to expect and correctly interpret these emotions.[3]

Essential Components of Counseling Coursework in Audiology

An essential component to building relationships with patients is to recognize and listen to their experiences. In order to do this well, we require an understanding of "coping styles, personality variables, use of silence, assessment of motivation, and understanding the difference between content questions (those seeking further information) and affect questions (those rooted in an underlying emotional need)".[30] Kelly Beck, Ph.D. and Jamie Kulzer Ph.D.'s article

recommending counseling skills to audiology students introduces the idea of a counseling micro skills instruction approach. This process introduced audiology students to basic counseling tools to use in conversations with parents of patients.[7,14] Micro skills are defined as "basic counseling skills that assist rapport building and begin the therapeutic process" such as active listening, awareness of nonverbal communication, comfort in silence, and use of empathy.[7] These counselors argue that establishing a trusting relationship between patients and clinicians shouldn't be reserved for professional counselors utilizing psychotherapy, but is necessary between audiologists and their patients as well. They propose that utilizing counseling micro skills fits into the audiologist's scope of practice and should be taught to audiology graduate students in order to build these relationships. For example, silence will serve as a useful micro skill because some patients find it upsetting and invalidating for an audiologist to move too quickly from difficult news to an informational counseling monologue.[7]

These ideas can be implemented in many ways. One article suggests a 3-credit-hour course that reviews both the theoretical basis and clinical applications of counseling, preferably with role-playing scenarios where students can practice the skills they learn in class.[11] An interdisciplinary approach where psychologists work together with audiologists will be necessary to develop a course that will meet American Speech Language and Hearing Association (ASHA) guidelines and adequately prepare clinicians.[28]

Appendix II: First Draft of Questions

1. How much time is devoted to counseling?
2. What is the appointment schedule like?
3. How many sessions? Are there follow-up sessions?
4. Do clinicians use tele practice for counseling?
5. What kind of material do they use?
6. Are there printed materials available for the patients to take home?
    a. Are there any audiovisual materials available for counseling?
    b. Are the counseling materials developed by the CI center or are they provided by the CI manufacturer?
7. Which professionals are involved in counseling? Audiologists, Surgeon, AVT, Others?
8. How confident do you feel communicating the initial hearing needs of a hearing impaired child to their normally hearing family following a diagnosis of hearing loss?
9. How confident do you feel in communicating realistic expectations of language development and schooling following CI implantation?
10. How prepared do you feel to provide the emotional support that your patient's parents require in initial appointments?
11. Does your practice provide resources such as support groups or other support services for hearing families of hearing impaired children? How effective are these services at accomplishing their intended goal?
12. How often do you find yourself communicating emotionally charged information to patients and families?
13. How prepared do you feel to provide advice about creating a language rich environment in the homes of hearing impaired children?
14. How confident do you feel teaching families of hearing impaired children listening strategies to be implemented at home and in school?
15. Is the time allotted for each appointment enough time to accomplish everything you wish to? if no: How rushed do you feel by the length of time of appointments at your clinic?
16. Do you refer to social worker?
    a. Are they on your team? Internal / external?
    b. Do you play the social worker role?
17. How much time do you spend / effort do you invest toward establishing realistic expectations for families where a hearing loss diagnosis is unexpected?
18. How often do you refer out to a counseling psychologist for grief / acceptance counseling?
    a. When we refer, how much contact do we get through interprofessional relationships? Are they in contact with the counselor / SLP or just getting updates from parents?
    b. How often do you attempt grief counseling with your patients yourself, rather than referring out?
    c. If you do, how many years have you been practicing?
    d. If you do, what is your education level?
    e. If you do, are you familiar with a grief-cycle model, such as the 5 or 7 step model?
    f. Does it inform your practice?
    g. If you do, do you feel your Au.D. degree prepared you for this?
    h. If you do, do you feel your master's degree prepared you for this?
    i. If not, do you think a course in counseling through the grief cycle would be beneficial in an Au.D. program?
19. What portion of your time with parents is dedicated to working through these stages of the grief-cycle?
    a. Shock and denial
    b. Pain and guilt, such as "Her hearing loss is my fault"

   c. Anger and bargaining, such as “what if” and “if only” statements, such as “if only I noticed sooner, etc.”
   d. Depression, such as “I don’t know how to go forward from here.”
   e. Reconstruction and working through, “Let’s find a way forward”
   f. Acceptance of the reality of their child’s hearing loss and hope
20. Do you provide the auditory verbal therapy (other speech therapy) yourself?
21. Auditory Aural therapy?
22. Do you refer to an SLP?

Post - Activation CI Protocol variability

1. Do you prefer to test CI outcomes with speech in quiet or in noise?
2. When testing speech in noise, what is your preferred SNR? Why?
3. How frequently do you see CI patients for follow up in the first x months?
4. Do you evaluate auditory developmental skills, how?
5. Testing Procedure
6. How are bilateral simultaneous implants activated? (rout)
7. How often are children who are eligible for a bilateral fit, fit bi-modally instead?
8. How often do parents of children who are eligible for a bilateral implant choose a bimodal configuration instead?
9. Approaches to set up stimulus levels
10. Specific Qs about parameters for children
11. Why are there still inconsistencies in programming?
12. What parameters do you pick?
13. Why do we pick different parameters?

Appendix III: Second Draft of Questions

1. Personal Adjustment
    a. Au.D. Comfort Level / Preparedness
        i. How comfortable are you providing the emotional support that parents require in initial appointments?
        ii. How comfortable are you providing the emotional support that parents require during life milestones, (such as beginning of schooling)?
        iii. Rate your level of agreement: I make an active effort to make space during clinic appointments for processing through grief of a hearing loss identification
        iv. Rate your level of agreement: The grief cycle new parents travel through is linear
        v. Rate your level of agreement: The grief cycle new parents travel through is cyclic, in that its grief is reintroduced at new milestones
    b. Appointment Time Devotion
        i. How often do you find yourself communicating emotionally charged information to patients and families?
        ii. What portion of your time with parents is dedicated to working through shock and denial?
        iii. What portion of your time with parents is dedicated to working through pain and guilt, such as “Her hearing loss is my fault”
        iv. What portion of your time with parents is dedicated to working through anger and bargaining, such as “what if” and “if only” statements, such as “if only I noticed sooner, etc.”
        v. What portion of your time with parents is dedicated to working through depression, such as “I don’t know how to go forward from here.” A parent’s inability to play an active role in the present because of overwhelming despair
        vi. What portion of your time with parents is dedicated to working through a phase of reconstruction and working through, “Let's find a way forward”
        vii. What portion of your time with parents is dedicated to working with parents ready to accept of the reality of their child’s hearing loss and hope
    c. Resources
        i. Does your practice provide resources such as support groups or other support services for hearing families of hearing impaired children?
        ii. How effective are these services at accomplishing their intended goal? (Text box - if they don’t measure effectiveness, they should report this)
    d. Scope of Practice
        i. How often do you refer out to a counseling psychologist for grief / acceptance counseling?
        ii. When we refer out, how much contact do you get through interprofessional relationships?
        iii. How frequently are you updated by your team about counseling progress (SLP, Counselor?)
        iv. How frequently are you updated by your team about speech progress (SLP, Counselor?)

v. How often do you attempt grief counseling with your patients yourself, rather than referring out?
vi. If you provide grief counseling, how many years have you been practicing?
vii. If you provide grief counseling, what is your education level?
viii. If you provide grief counseling, are you familiar with a grief-cycle model, such as the 5 or 7 step model?
ix. If you provide grief counseling and use a grief-cycle model, to what degree does it inform your practice?
x. If you provide grief counseling, do you feel your Au.D. degree prepared you for this?
xi. If you provide grief counseling, do you feel your master's degree prepared you for this?
xii. Do you think a course in counseling through the grief cycle would be beneficial in an AuD program?
xiii. Rate your level of agreement: Personal adjustment counseling is within the scope of practice of pediatric audiologist
xiv. Rate your level of agreement: There is adequate time during appointments to offer personal adjustment counseling
xv. Rate your level of agreement: It is within the scope of practice of clinical AuD to offer advice through life events impacted by hearing loss
xvi. Rate your level of agreement: A clinical audiologist is expected to offer services to patients that are not trained to do so in, such as parenting / social worker (text box: such as...)
xvii. Rate your level of agreement: I would hesitate to refer my patients experiencing grief to a counselor
xviii. Do you provide the auditory verbal therapy (other speech therapy) yourself?

e. Audiologist Perceptions
    i. How do you perceive the adequacy of counseling services that your office provides?
    ii. How do you perceive the adequacy of counseling services in our field as a whole?
f. Family's Willingness to Comply
    i. Do you refer out to social worker?
    ii. Are they on your team (internal)?
    iii. Do you play the social worker role if you do not refer? if no: text box

2. Informational Counseling
    a. Communicating Realistic Expectation
        i. How confident do you feel communicating the initial hearing needs of a hearing impaired child to their normally hearing family following a diagnosis of hearing loss?
        ii. How confident to you feel communicating realistic expectations of language development and schooling following CI implantation?
        iii. How prepared do you feel to provide advice about creating a language rich environment in the homes of hearing impaired children?
        iv. How confident do you feel teaching families listening strategies to be implemented at home and in school?

v. How much time do you spend / effort do you invest toward establishing realistic expectations for families where a hearing loss diagnosis is unexpected?

b. Scope of Practice
   i. How often are you expected to provide informational counseling on a topic outside of audiology?

c. Aiding Decision Making
   i. Device Selection
   ii. How much does your opinion impact the decision to implant bilaterally or unilaterally?
   iii. How do you select a device without forcing parents toward one way or another? (Text box response?)
   iv. To what degree does your opinion influence the device selection decision?
   v. To what degree do you encourage the parents to make their own decision about device selection, unbiased by your opinion?
   vi. To what degree does the surgeon's opinion influence the device selection decision?
   vii. How often do feelings of guilt such as “Her hearing loss is my fault, I am responsible, I am not capable of further authority in this process / am incapable of doing right by my child” impact the decision making of parents?
   viii. Does the family consult you about social / education opportunities?
   ix. Do you provide opportunities for them to ask questions that fall outside of the realm of audiology?
   x. How prepared are you to answer questions that fall outside of the subject area of audiology?
   xi. To what degree to parents expect AuD's to be a point person for non-clinical concerns

d. SES
   i. How do you identify families who are low-SES? (Textbox?)
   ii. How do you provide services to families who are low-SES?
   iii. Rate your level of agreement: My office contributes more effort to accommodate low-SES families.
   iv. Rate your level of agreement: My office provides free interpretation service?
   v. Rate your level of agreement: My office has a program in place to exclusively serve a low-SES patients
   vi. Rate your level of agreement: My office collaborates with other professionals to provide services for low-SES families.

Appendix IV: Recruitment Email

From:

Lara Leggio, B.S.

James Madison University

Department of Communication Sciences and Disorders

I am writing to you to request your participation in a questionnaire of pediatric cochlear implant audiologists' counseling in clinical practice. The data collected through this questionnaire will help the scientific and clinical communities better understand the reality of clinical practice in cochlear implants for children (0-18 years old) beyond programming the equipment. This study will contribute to the completion of my doctoral dissertation.

This questionnaire will take about 30 minutes of your time. Please see the attached consent form for a complete description of the study. Should you agree to participate, please reply to this email to express your interest, and the questionnaire link will be provided to you!

Your participation in this questionnaire is voluntary and all responses will be kept anonymous. Participant email addresses will be tracked using QuestionPro for follow-up notices, but names and email addresses are not associated with individual questionnaire responses. All participants who submit this questionnaire will receive an incentive of a $5 gift card, a coffee on us! Identifying information needed for distribution of the incentive to each participant will be kept separate from the questionnaire responses and destroyed at the conclusion of the study. Incentives will be distributed after the questionnaire is closed.

Thank you very much for your time and support.

Sincerely,

Lara Leggio, B.S.

Department of Communication Science and Disorders

James Madison University Email: leggiolr@dukes.jmu.edu

Telephone: 727-459-6553

Appendix V: Methods Narrative

Defining Areas of Interest

In order to build upon Dr. Browning's findings on the programming variability in cochlear implants, first, we drafted topics of interest for the focus of this questionnaire. The following topics and sub-topics were proposed:

1. Counseling Resources for Pediatric Audiologists.
2. Post-Activation Cochlear Implant Protocol Variability.
    a. Assessment and Outcomes
    b. Programming Variability: Bimodal and Bilateral
3. Professional Preparedness for Clinical Practice Following Completion of an Au.D.
4. Reality of Programming Cochlear Implants in Clinical Practice

Next, we narrowed down these four topics of interest into two, "Counseling Resources for Pediatric Audiologists" and "Post-Activation CI Protocol Variability". We drafted questions for both of these topics (See Appendix I: First Draft of Questions). This first stage of writing questions began by gathering ideas from my dissertation committee within these two topics. The first list of questions consisted of those contributed by both me and the dissertation committee, specifically Dr. Rout, Ph.D. and Dr. Heiner, Au.D.

Following this stage, it was evident that we were more interested in the first topic, "Counseling Resources for Pediatric Audiologists" than the second topic, "Post-Activation CI Protocol Variability". We decided to focus our study on the first topic only.

Next, we sought to define counseling in audiology in accordance with the literature specific to this study, and organize it into more specific sub-sections, or domains.[7,12,14,15 ,18, 24] The purpose for identifying domains was to categorize all the different ways that audiologists communicate with parents. In order to draw clear conclusions from our questionnaire, it was

necessary to build one that was highly organized and specific. In order to do this, the questions we asked existed within clearly defined domains and sub-sections.

Three separate domains of counseling in audiology were identified. All three domains existed in the context of how an audiologist communicates with the parents of children identified with hearing loss. These domains included 1. Aiding Parent Decision Making, 2. Informational Counseling, 3. Personal Adjustment Counseling[7,12,14,15 ,18, 24]. Within each domain we organized initial topics of interest. We identified four topics in total, as seen below:

Domains of counseling:

1. Aiding Decision Making
    a. *Device selection*
2. Informational Counseling
    a. *Realistic expectations*
3. Personal Adjustment Counseling
    a. *General grief-cycle counseling*
    b. *Family's willingness to comply*

Next, we categorized the drafted questions by the domain they fell underneath (See Appendix III: First Draft of Questions). Next, we formulated the researchable question: "What is the reality of counseling in audiology clinical practice, specifically counseling through decision making, delivering information, and personal adjustment?"

Literature Review

A literature review was conducted in order to understand the knowledge and resources available for counseling in audiology, specifically for all three domains discussed above. The searchable question "What is the reality of counseling in audiology clinical practice, specifically counseling through decision making, delivering information, and personal adjustment?" was used to direct a comprehensive literature review. First, the JMU Libraries research database

ComDisDome, an index with abstracts for communications disorders literature, with focus on speech-language pathology and audiology, was searched. Next ASHA Full-Text Journals, ERIC, PubMed, and Google Scholar were searched for relevant studies examining counseling in audiology.

Eleven articles were identified as being relevant to this study and were analyzed. First, the articles were all preliminarily read in order to understand the available data and lack thereof. During the initial reading phase, nine areas of evidence that the data could be analyzed into were identified. In order to organize necessary data into these areas of evidence, a second reading phase was completed. During the second reading phase, evidence from each study was identified and coded as evidence area 1-9. Functionally, this was completed with paper and pen. Evidence within each study was highlighted and numbered with evidence area 1-9.

Next, in the third reading phase, each area of evidence was compiled together by converting them into an electronic format. The nine areas of evidence labeled as topics, and data from all eleven studies were organized underneath their corresponding topic.

The areas of evidence included:

1. Evidence that families of hearing impaired children benefit from personal adjustment counseling.
2. Evidence for the necessity of this study.
3. Evidence that audiologists would benefit from a course in counseling.
4. Evidence about audiologist's scope of practice.
5. Evidence that clinicians have better outcomes if they counsel patients well.
6. Data about informational counseling.
7. Data about personal adjustment counseling.
8. Calls for further research.
9. History of the profession of audiology.

Upon analyzing this data, we identified that the majority of data was published over ten years ago. A second literature review was initiated with tighter criteria for publication date. Four more studies were found and coded for the same nine evidence areas as the first studies. Upon analyzing the literature, a definition of counseling in audiology was defined for the purposes of this study:

> In this study counseling can be broken down into three domains: aiding decision making, communicating new information, and personal adjustment. Aiding decision making includes guidance on device selection. Communicating new information includes realistic expectations of language development and schooling following CI implantation and refers to presenting and facilitating the new responsibilities of a family raising a hearing impaired child. These responsibilities include but are not limited to optimizing the listening environment of the child, implementing listening strategies, and advocating for them in their schooling years. Personal Adjustment is defined as proficiency in walking families through the cycles of grief, such as: shock and denial, pain and guilt, anger and bargaining, depression, reconstruction and working through, acceptance and hope.

Following the comprehensive literature review, a second list of questions was drafted in light of the new information the literature introduced and the questions it left unanswered. This list included 61 questions. Functionally, the questions were stored in a separate google sheet where they could be accessed and revised during the refining and editing process (See Appendix III: Second Draft of Questions). They were organized by the topics and subtopics identified in our definition of counseling in audiology. This concluded the Defining Areas of Interest and Literature Review stages, as the second list of questions included all of the topics present in the final questionnaire. Next, we edited the questions into the final questionnaire format.

Editing

Upon editing the questionnaire questions, it became apparent that we desired to know the same three things about each topic and subtopic of counseling. First, how comfortable or prepared audiologists felt about the given type of counseling, second, how often they performed it in clinical practice, and third, how important they perceived this type of counseling to be. With this knowledge, this list of questions was organized into its final format.

The format is as follows: The questionnaire presents one topic at a time and then asks three questions about this topic. All three questions were formatted to be answered on a five point Likert scale. The three questions include:

[Topic]

(1) How confident are you in executing this in clinical practice?

(2) How often do you engage in this in clinical practice?

(3) How important is this topic in clinical practice?

Finalizing and Recruiting

The questionnaire was finalized (See Appendix V: The Questionnaire) and converted into QuestionPro where a shareable link was used to distribute it to participants. An Institutional Review Board (IRB) Protocol 22-2679 was submitted and approved which began the recruitment portion of the study. Participants were audiologists who provide cochlear implant services to pediatric patients in various health services settings, such as hospitals, audiologic and/or speech-language clinics, and ear-nose-throat (ENT) clinics. Potential participants were identified through word of mouth in the professional community of audiology, published professional provider lists on the websites of the health-care facilities, and audiology professional organizations – such as the American Speech, Language, and Hearing Association (ASHA), American Audiology Association (AAA), and American Cochlear Implant Alliance (ACI).

Over 1000 participants were contacted via email and asked if they were interested in completing the (see Appendix IV: Recruitment Email). The QuestionPro questionnaire link was provided to 35 participants who responded via email expressing interest, and 17 took the questionnaire on a computer they selected. The consent forms were digitally provided, and participants clicked “yes” in the consent form to advance to the full questionnaire. Once the questionnaire was completed, participants were directed to a secondary questionnaire which was not linked to the first. This secondary questionnaire is where they entered their contact information so that they may obtain their $5 compensation.

17 participants completed this questionnaire. The response rate was 49%, as 35 participants received a link to participate in the questionnaire. All participants were considered to be pediatric audiologists by a designation of a pediatric specialization on the membership directory they were identified through. Seven participants reported seeing 20% or less pediatric patients in their average patient load. Four participants saw pediatric patients for 40% of their average patient load, and the remaining six participants saw between 60-100% of pediatric patients. Half of the participants worked in a medical center and the other half worked in private clinics, schools, and university clinics.

Amendments were made to the questionnaire after initial feedback in order to provide clarity to a misleading question. Under the topic "Emotional Support", participants were asked to provide the proportion of time different aspects of appointments take up. The questionnaire asked these two questions: “What proportion of the appointment time does providing emotional support consume, when it is provided?” and “What proportion of the appointment time does providing informational counseling consume, when it is provided?”. Answers added together were larger than 100%, which revealed that they did not understand our intent. After the amendment, the questionnaire was changed to ask three questions: “What proportion of the appointment time does counseling (emotional + informational) consume, when it is provided?”, “Of the time spent counseling, what proportion of counseling time does providing emotional counseling consume,

when it is provided?", and "Of the time spent counseling, what proportion of counseling time does providing informational counseling consume, when it is provided?".

No personal identifiable data was collected at the front end of the questionnaire. Thus, only de-identified data was collected. Raw data collected from the questionnaire (i.e., responses from the questionnaire) was stored on QuestionPro secure servers. The analysis on the de-identified data was performed on either a secure personal computer or JMU-owned password protected computer. The de-identified data and analysis was stored on aforementioned computers as well as the Lab for Auditory Perception in Children and Adults' password-protected network drive. The passwords are accessible to the investigators listed on the IRB protocol only.

Analysis

The data was coded without any identifying information and analyzed using Excel and IBM SPSS version 27 when appropriate. Descriptive statistics and Spearman correlations were performed. A linear regression was conducted to assess independent variables that predicted confidence when providing personal adjustment counseling. Specific methods are described in Results for readability.

Participants responded to questions of confidence, frequency, and perceived importance on a five point Likert Scale (see legend on Figure 1). The scale ranged from 1 to 5. Answers of "1" Indicated responses of "never", "not at all", or "strongly disagree". Answers of "5" indicated "extremely", "always", or "strongly agree". As numbers increase from 1 to 5, colors change from red (1) to orange (2) to yellow (3) to green (4 and 5). When audiologists were asked how confident they were about a subject, their response options included: extremely confident "5", very confident "4", moderately confident "3", slightly confident "2", or not at all confident "1". When audiologists were asked how frequently they encountered a scenario, their response options included: always "5", very often "4", sometimes "3", rarely "2", or never "1". When audiologists were asked how important or relevant a topic was in clinical practice, their response

options included: extremely important “5”, very important “4”, moderately important “3”, slightly important “2”, or not at all important “1”. The median, first and third quartile for responses to all questions are found in Figure 1 and Figure 9.

Appendix VI: The Questionnaire

What is the Reality of Counseling in Clinical Practice for Pediatric Cochlear Implant Audiologists?

(Please note questionnaire functionality is improved when viewed on QuestionPro at the following link: https://jmu.questionpro.com/t/ATGeYZnOsK)

Hello: You are invited to participate in our questionnaire so we can better understand the reality of counseling in audiology clinical practice. This questionnaire targets pediatric audiologists who work specifically with cochlear implants in the United States. It will take approximately 30 minutes to complete this questionnaire.

The goal of this questionnaire is to better understand audiologists' practice in cochlear implants (CIs) for children (0-18 years old) beyond programming the equipment. Specifically, we aim to 1) explore the likelihood of audiologists to provide counseling services in various situations and the amount of effort committed to their provision; 2) assess how some factors, such as confidence, perceived importance of providing counseling, etc., may affect the likelihood of providing different types of counseling services.

Patient Population: Please provide your response related to children with hearing loss who have hearing parents, specifically those children who have received or who are receiving any audiological CI service or CI candidacy evaluation. In this questionnaire, we will refer to these children as pediatric CI patients.

Your participation in this study is completely voluntary. There are no foreseeable risks associated with this project. However, if you feel uncomfortable answering any questions, you can withdraw from the questionnaire at any point. It is very important for us to learn your opinions. Your questionnaire responses will be strictly confidential and data from this research will be reported only in the aggregate. If you have questions at any time about the questionnaire or the procedures, you may contact Lara Leggio at Leggiolr@dukes.jmu.edu. Thank you very much for your time and support. Please start with the questionnaire now by clicking on the Next button below.

Topics:
Emotional Support; Resources; Scope of Practice; Inter-professional Relationships; Realistic Expectations; Device Selection; Low Socioeconomic Status (SES)

Definitions:
Counseling: In this study counseling can be broken down into three domains: aiding decision making, communicating new information, and personal adjustment. Aiding decision making includes guidance on device and fitting selection. Communicating new information includes realistic expectations of language development and schooling following CI implantation and refers to presenting and facilitating the new responsibilities of a family raising a hearing impaired child. These responsibilities include but are not limited to optimizing the listening environment of the child, implementing listening strategies, and advocating for them in their schooling years. Personal Adjustment is defined as proficiency in walking families through the cycles of grief, such as: Shock and denial, Pain and guilt, Anger and Bargaining, Depression, Reconstruction and Working Through, Acceptance and Hope.

Pediatrics: Age 0-18

What is the Reality of Counseling in Clinical Practice for Pediatric Cochlear Implant Audiologists?

Opening Questions:

1.) Total Number of Implants

Since you began programming cochlear implants, estimate as best you can how many CIs you, personally, activated?

Adult CI_____ Pediatric CI_____

2.) How many years have you been practicing audiology?

_____

3.) How many years have you specifically been working with pediatric cochlear implants?

_____

2.) Adult/Pediatric Ratio

Estimate the percentage of your entire CI caseload that is made up of pediatric CI patients as described previously (i.e., children with hearing parents, receiving or having received any audiological CI service or having been evaluated for CI candidacy)

- 100%
- 80%
- 60%
- 40%
- 20% or less

3.) What percentage of your schedule is spent with hearing families of hearing impaired children?

- 100%
- 80%
- 60%
- 40%
- 20% or less

4.) What type of facility do you work in?

- Privately-owned audiology clinic
- Privately-owned Otolaryngology clinic
- Medical Center
- University Clinic
- Other _____

5.) Services Performed at Center

Please indicate which services are provided at the facility in which you work:

A.) Medical/ENT
- Yes
- Referred Elsewhere

B.) Surgical (Cochlear Implantation)
- Yes
- Referred Elsewhere

C.) Auditory Rehabilitation (Auditory Training)
- Yes
- Referred Elsewhere

D.) Hearing Aid Fitting
- Yes
- Referred Elsewhere

E.) Vestibular Assessment
- Yes
- Referred Elsewhere

F.) Speech Language Pathology
- Yes
- Referred Elsewhere

G.) Other (please explain):

Emotional Support:

Providing emotional support in initial diagnostic appointments

1. How *confident* are you in executing this in clinical practice?
    - Extremely
    - Very
    - Moderately
    - Slightly
    - Not at all

2. How *often* do you provide emotional support in initial diagnostic appointments?
    - Always
    - Very Often
    - Sometimes
    - Rarely
    - Never
3. What *proportion of the appointment* time does counseling (emotional + informational) consume, when it is provided?
    - 100%
    - 80%
    - 60%

- 40%
- 20% or less

4. Of the time spent counseling, what *proportion of counseling time* does providing emotional counseling consume, when it is provided?
    - 100%
    - 80%
    - 60%
    - 40%
    - 20% or less

5. Of the time spent counseling, what *proportion of counseling* time does providing informational counseling consume, when it is provided?
    - 100%
    - 80%
    - 60%
    - 40%
    - 20% or less

6. How *important* is your emotional support in these appointments?
    - Extremely
    - Very
    - Moderately
    - Slightly
    - Not at all

Providing an *environment* during clinic appointments for processing through grief of a hearing loss identification.

7. How *confident* are you in executing this in clinical practice?
    - Extremely
    - Very
    - Moderately
    - Slightly
    - Not at all
8. How *often* do you strive to create this environment in clinical practice?
    - Always
    - Very Often
    - Sometimes
    - Rarely
    - Never

9. How *important* is providing this environment in clinical practice?
    - Extremely
    - Very
    - Moderately
    - Slightly
    - Not at all

Communicating emotionally charged information, (such as initially communicating the identification of a hearing loss in a pediatric CI patient of hearing parents, explaining the stress that raising a child with hearing loss will place on a marriage, etc.).

10. How *confident* are you in executing this in clinical practice?
    - Extremely
    - Very
    - Moderately
    - Slightly
    - Not at all

11. How *often* do you engage in this in clinical practice?
    - Always
    - Very Often
    - Sometimes
    - Rarely
    - Never

12. How *important* is your guidance in communicating emotionally charged information in pediatric CI services?
    - Extremely
    - Very
    - Moderately
    - Slightly
    - Not at all

Stages of Grief
Personal adjustment counseling is defined as helping people cope with attitudes, feelings and problems that are related to the communication disorder, including the cycles of grief, such as: Elisabeth Kübler-Ross's the 7-stages of grief: shock and denial, pain and guilt, anger and bargaining, depression, reconstruction and working through, the upward turn, acceptance and hope.

Communicating with parents who are experiencing *shock and denial* about the reality of their child's hearing loss

13. How *confident* are you in executing this in clinical practice?
    - Extremely
    - Very
    - Moderately
    - Slightly
    - Not at all

14. How *often* do you encounter families experiencing these emotions in clinical practice?
    - Always
    - Very Often

- Sometimes
- Rarely
- Never

15. How *important* is your guidance during this stage of the grief cycle?
    - Extremely
    - Very
    - Moderately
    - Slightly
    - Not at all

    What do you do when addressing these emotions?
    [Optional Free Text Response]

Communicating with parents who are experiencing *pain and guilt,* such as "My child's hearing loss is my fault".

16. How *confident* are you in executing this in clinical practice?
    - Extremely
    - Very
    - Moderately
    - Slightly
    - Not at all

17. How *often* do you encounter families experiencing these emotions in clinical practice?
    - Always
    - Very Often
    - Sometimes
    - Rarely
    - Never

18. How *important* is your guidance during this stage of the grief cycle?
    - Extremely
    - Very
    - Moderately
    - Slightly
    - Not at all

19. What do you do when addressing these emotions?
    [Optional Free Text Response]

Communicating with parents working through the *anger and bargaining* stage of the grief cycle, (characterized as "what if" and "if only" statements, such as "if only I had noticed sooner, etc.".

20. How *confident* are you in executing this in clinical practice?
    - Extremely

- Very
- Moderately
- Slightly
- Not at all

21. How *often* do you encounter families experiencing these emotions in clinical practice?
    - Always
    - Very Often
    - Sometimes
    - Rarely
    - Never

22. How *important* is your guidance during this stage of the grief cycle?
    - Extremely
    - Very
    - Moderately
    - Slightly
    - Not at all

23. What do you do when addressing these emotions?
    [Optional Free Text Response]

Communicating with parents who are experiencing an inability to play an active role in the present because of overwhelming *despair* (depression stage of grief cycle)?

24. How *confident* are you in executing this in clinical practice?
    - Extremely
    - Very
    - Moderately
    - Slightly
    - Not at all

25. How *often* do you encounter families experiencing these emotions in clinical practice?
    - Always
    - Very Often
    - Sometimes
    - Rarely
    - Never

26. How *important* is your guidance during this stage of the grief cycle?
    - Extremely
    - Very
    - Moderately
    - Slightly
    - Not at all

27. What do you do when addressing these emotions?
    [Optional Free Text Response]

Communicating with parents who are ready to accept the reality of their child's hearing loss, in the stage of *working through,* characterized as "Let's find a way to move forward".

28. How *confident* are you in executing this in clinical practice?
    - Extremely
    - Very
    - Moderately
    - Slightly
    - Not at all

29. How often do you encounter families experiencing these emotions in clinical practice?
    - Always
    - Very Often
    - Sometimes
    - Rarely
    - Never

30. How *important* is your guidance during this stage of the grief cycle?
    - Extremely
    - Very
    - Moderately
    - Slightly
    - Not at all

31. What do you do when addressing these emotions?
    [Optional Free Text Response]

Rate your level of agreement:

32. The grief cycle that hearing parents of pediatric CI patients travel through is linear (in one direction)?
    - Strongly Agree
    - Agree
    - Neutral
    - Disagree
    - Strongly Disagree

33. The grief cycle that parents travel through appears to be cyclic, in that grief is reintroduced at new milestones.
    - Strongly Agree
    - Agree
    - Neutral
    - Disagree
    - Strongly Disagree

Consider the definition of *personal adjustment counseling* provided earlier in this questionnaire.

34. **Personal adjustment counseling is within the scope of practice of a pediatric audiologist**
    - Strongly Agree
    - Agree
    - Neutral
    - Disagree
    - Strongly Disagree

35. **There is adequate time during appointments to offer personal adjustment counseling.**
    - Strongly Agree
    - Agree
    - Neutral
    - Disagree
    - Strongly Disagree

36. **I have the skills and knowledge necessary to provide adequate personal adjustment counseling.**
    - Strongly Agree
    - Agree
    - Neutral
    - Disagree
    - Strongly Disagree

37. **I received a counseling course as a part of my graduate education in audiology.**
    - Yes
    - No

38. **My counseling course involved role-play experiences**
    - Yes
    - No

Scope of Practice

Providing auditory-verbal therapy to your patients.

39. How *confident* are you in executing this in clinical practice?
    - Extremely
    - Very

- Moderately
- Slightly
- Not at all

40. How *often* do you engage in this in clinical practice?
    - Always
    - Very Often
    - Sometimes
    - Rarely
    - Never

41. How *important* is it that you provide this in clinical practice?
    - Extremely
    - Very
    - Moderately
    - Slightly
    - Not at all

The expectation that an audiologist should provide informational counseling to pediatric CI patients and their families on topics outside of audiology (social / education opportunities such as participating in sports, playing musical instruments, etc.?).

42. How *confident* are you in executing this in clinical practice?
    - Extremely
    - Very
    - Moderately
    - Slightly
    - Not at all

43. How *often* are you expected to engage in this in clinical practice?
    - Always
    - Very Often
    - Sometimes
    - Rarely
    - Never

44. Which topics outside of audiology do you address most often?
    [Optional Text Box Response]

45. How *important* is your role in this communication?
    - Extremely
    - Very
    - Moderately
    - Slightly
    - Not at all

Guiding parents through choosing appropriate organized activities that may be relevant to the use of CIs for their child to participate in.

46. How *confident* are you in executing this in clinical practice?
    - Extremely
    - Very
    - Moderately
    - Slightly
    - Not at all

47. How *often* are you expected to engage in this in clinical practice?
    - Always
    - Very Often
    - Sometimes
    - Rarely
    - Never

48. How *important* is your guidance in this topic / at different milestones?
    - Extremely
    - Very
    - Moderately
    - Slightly
    - Not at all

Evaluating a family's willingness and ability to comply with the responsibilities required of them during and after implantation.

49. How *confident* are you in executing this in clinical practice?
    - Extremely
    - Very
    - Moderately
    - Slightly
    - Not at all

50. How *often* do you utilize a social worker in the CI candidacy process?
    - Always
    - Very Often
    - Sometimes
    - Rarely
    - Never

51. Is there a social worker on your team?
    - Yes
    - No

52. If not, why?
    [Optional text Box Response]

53. How *important* is your role in this communication?
    - Extremely
    - Very
    - Moderately
    - Slightly
    - Not at all

54. How important is a social worker's role in this communication?
    - Extremely
    - Very
    - Moderately
    - Slightly
    - Not at all

55. If there is not a social worker in your office, how often do you perform tasks that fall under the scope of a social worker during the CI candidacy process?
    - Always
    - Very Often
    - Sometimes
    - Rarely
    - Never

Interprofessional Relationships

Engaging in two-way communicating with an SLP about the progress of a pediatric CI patient.

56. How *confident* are you in executing this in clinical practice?
    - Extremely
    - Very
    - Moderately
    - Slightly
    - Not at all

57. How *often* do you engage in this in clinical practice?
    - Very Frequently
    - Frequently
    - Occasionally
    - Rarely
    - Never

58. How frequently are you updated about patient progress by an SLP?
    - Very Frequently
    - Frequently
    - Occasionally
    - Rarely
    - Never

59. How frequently do you depend on parents to update you about their speech progress, rather than team members?
    - Always
    - Very Often
    - Sometimes
    - Rarely
    - Never

60. How *important* is this line of communication?
    - Extremely
    - Very
    - Moderately
    - Slightly
    - Not at all

Communicating with physicians (in all medical specialties, such as otolaryngology, primary care, etc.) about the auditory progress / concerns of a patient.

61. How *confident* are you in executing this in clinical practice?
    - Extremely
    - Very
    - Moderately
    - Slightly
    - Not at all

62. How *often* do you engage in this in clinical practice?
    - Very Frequently
    - Very Often
    - Occasionally
    - Rarely
    - Never

63. How frequently are you updated about patient progress by a physician?
    - Very Frequently
    - Frequently
    - Occasionally
    - Rarely
    - Never

64. How *important* is this line of communication?
    - Extremely
    - Very
    - Moderately
    - Slightly
    - Not at all

Communicating with a counseling psychologist about the progress of a patient.

65. How *confident* are you in executing this in clinical practice?
    - Extremely
    - Very
    - Moderately
    - Slightly
    - Not at all

66. How *often* do you engage in this in clinical practice?
    - Very Frequently
    - Frequently
    - Occasionally
    - Rarely
    - Never

67. How frequently are you updated about patient progress by a psychologist?
    - Very Frequently
    - Frequently
    - Occasionally
    - Rarely
    - Never

68. How frequently do you depend on parents to update you about their counseling progress, rather than team members?
    - Always
    - Very Often
    - Sometimes
    - Rarely
    - Never

69. How *important* is this line of communication?
    - Extremely
    - Very
    - Moderately
    - Slightly
    - Not at all

Referring out to a counseling psychologist for grief / acceptance counseling.

70. How *confident* are you in executing this in clinical practice?
    - Extremely
    - Very
    - Moderately
    - Slightly
    - Not at all

    How *often* do you engage in this in clinical practice?
    - Very Frequently
    - Frequently
    - Occasionally

- Rarely
- Never

How *important* is it for the pediatric CI patients and their families to receive counseling from psychologists?

- Extremely
- Very
- Moderately
- Slightly
- Not at all

What other professionals do you engage with?
[Optional Text Box Response]

Realistic Expectations

1. **Communicating about what receiving a cochlear implant(s) entail to the child's hearing family following a diagnosis of hearing loss.**

How *confident* are you in executing this in clinical practice?

- Extremely
- Very
- Moderately
- Slightly
- Not at all

How *often* do you engage in this in clinical practice?

- Very Frequently
- Frequently
- Occasionally
- Rarely
- Never

How *important* is your guidance in this topic?

- Extremely
- Very
- Moderately
- Slightly
- Not at all

1. **Communicating realistic expectations of language development and schooling for a child with a CI.**

How *confident* are you in executing this in clinical practice?

- Extremely
- Very
- Moderately
- Slightly

- Not at all

How *often* do you engage in this in clinical practice?
- Always
- Very Often
- Sometimes
- Rarely
- Never

How *important* is your guidance in this topic?
- Extremely
- Very
- Moderately
- Slightly
- Not at all

1. **Providing advice about creating a language rich environment and listening strategies in the homes of pediatric CI patients?**

How *confident* are you in executing this in clinical practice?
- Extremely
- Very
- Moderately
- Slightly
- Not at all

How *often* do you engage in this in clinical practice?
- Always
- Very Often
- Sometimes
- Rarely
- Never

How *important* is your guidance in this topic?
- Extremely
- Very
- Moderately
- Slightly
- Not at all

Device Selection

1. **Facilitating the device selection process.**

How *confident* are you in executing this in clinical practice?
- Extremely
- Very
- Moderately

- Slightly
- Not at all

How *often* do you engage in this in clinical practice?

- Always
- Very Often
- Sometimes
- Rarely
- Never

How often do you encourage the parents to *make their own decision* about device selection, unbiased by your opinion?

- Always
- Very Often
- Sometimes
- Rarely
- Never

How often does your opinion influence the *brand selection* decision?

- Always
- Very Often
- Sometimes
- Rarely
- Never

How often does your opinion influence the *external sound processor* style?

- Always
- Very Often
- Sometimes
- Rarely
- Never

How *important* is your guidance in the device selection process?

- Extremely
- Very
- Moderately
- Slightly
- Not at all

How do you select a device without forcing parents toward one device or another? [Optional Text Box Response]

Low Socioeconomic Status

1. **Identifying families who are in low-SES.**

How *confident* are you in executing this in clinical practice?

- Extremely
- Very

- Moderately
- Slightly
- Not at all

How do you identify them?
[Optional Text Box Response]

How *often* do you encounter these families?
- Always
- Very Often
- Sometimes
- Rarely
- Never

How *important* is it to identify low-SES families?
- Extremely
- Very
- Moderately
- Slightly
- Not at all

1. **Providing low-SES <u>specific</u> services.**

How *confident* are you in executing this in clinical practice?
- Extremely
- Very
- Moderately
- Slightly
- Not at all

How *different* are the services you provide to low-SES families compared to the services provided to other families?
- Extremely
- Very
- Moderately
- Slightly
- Not at all

What low-SES services do you provide that differ from services provided to other families? (Select all that apply)
- Scheduling accommodations
- Financial accommodations
- Interpretation services
- Informational counseling
- Personal adjustment counseling
- Realistic expectation counseling
- Device selection (e.g., accessory selection).
- Not Applicable

What percentage of your CI caseload is families with low SES? Enter Below: [Number Response]

How important is providing lower-SES specific services?

- Extremely
- Very
- Moderately
- Slightly
- Not at all

Rate your level of agreement:

1. **My office contributes effort to accommodate low-SES families.**
   - Strongly Agree
   - Agree
   - Neutral
   - Disagree
   - Strongly Disagree

1. **My office provides interpretation services**
   - Yes
   - No

1. **If yes: My office's interpretation services are**
   - Over-the-phone
   - In-person

1. **My office has a program in place to exclusively serve low-SES patients.**
   - Strongly Agree
   - Agree
   - Neutral
   - Disagree
   - Strongly Disagree

1. **My office collaborates with other professionals to provide services for low-SES families.**
   - Strongly Agree
   - Agree
   - Neutral
   - Disagree
   - Strongly Disagree

1. **In a given cochlear implantation mapping appointment, how often is interprofessional collaboration utilized to increase a child's success in spoken language development?**
    - Always
    - Very Often
    - Sometimes
    - Rarely
    - Never

1. **When providing services to families of low SES, how often are you able to provide financial assistance either from donors or local funding organizations??**
    - Always
    - Very Often
    - Sometimes
    - Rarely
    - Never

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