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Title: Improving Support for Parents of Children with Hearing Loss: Provider Training on Use of Targeted Communication Strategies

Karen Muñoz1,2

2620 Old Main Hill

Logan, UT 84321

(435) 797-3701

(435) 797-0221 Fax

[karen.munoz@usu.edu](mailto:karen.munoz@usu.edu)

Lauri Nelson1

Kristina Baliser1

Tanner Price1

Michael Twohig3

1 Department of Communicative Disorders and Deaf Education, Utah State University, Logan, Utah; 2 National Center for Hearing Assessment and Management, Utah State University, Logan, Utah; 3 Department of Psychology, Utah State University, Logan, Utah

**Abstract**

**Background**: When proper protocols are followed, children who have a permanent hearing loss occurring early in life have opportunities to develop language on par with their typical hearing peers. Young children with hearing loss are dependent on their parents to manage intervention during early years critical to their development, and parents’ ability to effectively integrate recommendations in daily life is foundational for intervention success. Audiologists and early intervention professionals not only need to provide current evidence-based services, but also must address parents’ emotional and learning needs related to their child’s hearing loss.

**Purpose**: This study explored practice patterns related to education and support provided to parents of children with hearing loss and the influence of an in-service training on provider attitudes.

**Research Design**: This study used a pre-post design with a self-report questionnaire to identify practice patterns related to communication skills and support used by providers when working with parents of children with hearing loss.

**Results**: Findings for 45 participants (21 professionals and 24 graduate students) completed the pre-training questionnaire, and 29 participants (13 professionals and 16 graduate students) completed the post-questionnaire. Professionals most frequently teach skills to mothers (91%) and infrequently teach skills to fathers (19%) and other caregivers (10%). Professionals reported frequently collaborating with other intervention providers (76%) and infrequently collaborating with primary care physicians (19%). One-third of the professionals reported addressing symptoms of depression and anxiety as an interfering factor with ability to implement management recommendations. For providers that completed both the pre- and post-questionnaires, an increase in confidence was reported for several areas of communication; however, as expected, practices remained similar, and all of the practicing professionals and 94% of the graduate students indicated a desire for more training on how to be effective in supporting parents with implementing intervention recommendations.

**Conclusions**: Providers do not necessarily have the communication skills needed to adequately help parents, requiring additional focused training to change how providers interact with parents and the way support is provided.

Key Words: Pediatric Audiology, Hearing Aids, Parent Education and Support

Abbreviations: AAA = American Academy of Audiology; ASHA = American Speech-Language-Hearing Association

As a result of newborn hearing screening, children are routinely being identified with hearing loss prior to three months of age (Center for Disease Control and Prevention [CDC], 2011) and fitted with hearing aids before six months of age (Muñoz et al, 2013). This is important because almost 95% of children with hearing loss are born to hearing parents (Mitchell & Karchmer, 2004) who choose to communicate with their children using listening and spoken language, and this requires consistent and effective use of hearing aids and language intervention (White, 2007). When proper protocols are followed, children who have a permanent hearing loss occurring early in life have opportunities to develop language on par with their typical hearing peers.

Young children with hearing loss are dependent on their parents to manage intervention during early years critical to their development, and parents’ ability to effectively integrate recommendations in daily life is foundational for intervention success. Audiologists and early intervention professionals not only need to provide current evidence-based services (e.g., American Speech-Language-Hearing Association [ASHA], 2004; American Academy of Audiology [AAA], 2013), but also must address parents’ emotional needs related to their child’s hearing loss (ASHA, 2008). However, healthcare providers have reported feeling more comfortable with informational counseling than addressing the emotional aspects of service delivery (Hambley et al, 2009). This is a great limitation because, for some guardians, it is not a lack of knowledge that is interfering with their success; it is a fear of failure or a related emotional issue. Training for providers on how to use effective methods of communication with parents to help them attain targeted intervention goals can enhance and expand family-centered service provision, leading to improved child outcomes.

**Parent Challenges**

Parents have reported experiencing a variety of challenges managing daily intervention requirements for children with hearing loss. This includes challenges with hearing aid use, such as recognizing the benefits of wearing hearing aids (Sjoblad et al, 2001), accepting the need for hearing aids, and difficulty managing hearing aid care (Walker et al, 2013; Muñoz et al., 2013; Muñoz et al, in press). A recent study (Muñoz et al, manuscript submitted for publication) that focused on challenges with hearing aid management for parents of early-identified children with bilateral hearing loss (N=55) found that only 35% of parents reported hearing aid use during all waking hours and 31% reported use of less than five hours per day. Forty-seven percent felt they did not have enough time to talk about emotional issues with their child’s audiologist, and 22% reported symptoms of depression. Because effective daily hearing aid management and consistent access to appropriately amplified speech provides a foundation for speech and language development, providers have a role in supporting parents with ongoing help in addressing challenges they are experiencing with daily management.

Not only have parents reported challenges managing hearing aids, but also researchers have found from hearing aid data logging measurements that young children are not wearing their hearing aids consistently. For example, Jones (2013) found that typical hearing aid use for children younger than four years of age (N=2126) was approximately 4.5 hours per day, and Muñoz et al (in press) found a wide variability of use for children younger than five years of age (N=29). Walker et al (2013) found trends in hours of hearing aid use with increased use based on age (older children used their hearing aids more), degree of hearing loss (children with poorer hearing thresholds used hearing aids more), and maternal education (children of mothers with a college degree used their hearing aids more). Walker also found that parent report of hearing aid use over-estimated objective measures of use from hearing aid data logging. This is concerning, because many children are not fully benefitting from having their hearing loss identified early if it does not result in consistent access to auditory information during all waking hours (approximately 10-12 hours per day).

When providers recognize and address challenges parents are experiencing with intervention recommendations (e.g., hearing aid use) within the context of routine service delivery, day-to-day management can be improved. In other areas, healthcare providers have effectively used behavior change strategies to improve health outcomes, including diabetes management (Glasgow et al, 1997) and assisting parents with behavioral programs for autism (Blackledge & Hayes, 2006). Variables such as how often the provider interacts with the individual (Nelson et al, 2012) and whether or not the provider received training related to communication strategies (Peyrot et al, 2006) have been found to influence outcomes.

**Provider Training Considerations**

Graduate training programs for audiology have focused primarily on informational counseling, not on how to provide emotional support (ASHA, 2008). To effectively address emotional needs of parents of children with hearing loss and support their learning process, professionals may need further training in effective communication skills. Parents need to feel safe to share their problems with implementing intervention recommendations without fear of being judged when it is not going well. Progress can be impeded when communication is ineffective, such as when providers distance themselves or avoid addressing emotional aspects of care (Parle et al, 1997). Partnering with parents in identifying barriers and exploring effective solutions is a process. A providers’ ability to be present in a kind and compassionate manner can depend on the extent the provider is aware of his/her own responses to challenging situations (e.g., receptiveness, avoidance), their openness to understanding dilemmas parents are facing, and their willingness to engage in a partnership with parents to seek solutions (Siegel, 2010).

Communication training has been found to improve communication skills of providers. For example, following training healthcare providers have demonstrated increased use of behaviors that facilitate problem-solving (e.g., Delavaux et al, 2004), improved self-efficacy related to their communication skills (e.g., Ammentorp et al, 2007), and competence in using communication strategies (e.g., Heaven et al, 2006). However, transfer of skills to routine practice has been challenging (Heaven, et al, 2006). Audiologists and other hearing care providers may need training to gain confidence in their ability to engage in effective partnerships with parents to support them in achieving intervention goals. Munoz et al (in press) found that 47% of parents reported they were not provided with enough time to talk about their emotions when meeting with their child’s audiologist. More information is needed to know if provider engagement issues are a problem when audiologists and intervention professionals are working with parents.

When a child is identified with hearing loss, practice recommendations indicate the need to include education, support, and adjustment counseling for parents (ASHA, 2008; AAA, 2013). The ASHA (2008) guideline addresses the importance of including family-focused counseling and instruction as an integral component of service delivery and addresses what needs to be included at each stage of the Early Hearing Detection and Intervention (EHDI) process. However, providers need information and skills related to how to go about effectively incorporating counseling strategies within a framework of ongoing education and support for families. Therefore, this study explored provider practice patterns related to education and support for parents of children with hearing loss and the influence of an in-service training on provider attitudes.

**Method**

This study used a pre-post design with a self-report questionnaire to identify practice patterns related to communication skills and support used by providers when working with parents of children with hearing loss. Institutional review board approval was obtained prior to data collection.

**Participants**

Professionals and graduate students providing services (i.e., audiology, speech-language pathology, deaf education) to children with hearing loss were invited to attend a one-day seminar. A flyer was distributed in Utah and Idaho, there was no cost to attend the training, and continuing education credits were offered. Fifty-five participants attended the seminar, and 48 reported they were currently involved in providing services to children with hearing loss. Of those, 45 participants completed the pre-training questionnaire (see Table 1 for demographics). One month after the training participants were invited to complete a post-training questionnaire and 29 (60%) completed questionnaires were received.

**Procedure**

A link to complete the online pre-training questionnaire was sent to registered participants two weeks prior to the workshop and participants completed the questionnaire prior to attending the seminar. Participants attended a five-hour on site seminar. One month after the training a link to complete the post-training questionnaire was sent to participants who reported that they were currently serving children with hearing loss. Two reminders were sent out for each questionnaire.

The training was provided in a didactic seminar format with interaction and discussion interwoven throughout the day. There were brief presentations, by an audiologist, a speech-language pathologist, and a deaf educator at the beginning of the seminar to help participants from each discipline connect to the relevance of communication skills training from the perspective of their discipline. A psychologist presented the communication skills components (i.e., identifying challenges, internal versus external barriers, strategies for managing conversations, strategies for monitoring the learning process and progress) and facilitated a discussion using case examples.

**Questionnaire**

A pediatric audiologist and psychologist initially developed the questionnaire in 2013 for use with pediatric audiologists. A thorough literature review was completed to identify skills needed by providers to support parents of children with hearing loss, and skills needed to communicate in an effective manner. The questionnaire was reviewed by a pediatric audiologist for clarity and was piloted with fifteen pediatric audiologists in Utah for content validity. Modifications were made to improve clarity. The wording of the questionnaire was then further modified to address the interdisciplinary purpose of the training seminar. The questionnaire queried four aspects of practice: (1) delivery of parent education, (2) parent support, (3) provider perceptions about practice, and (4) communication with parents. Two open-ended questions were asked on the pre-training questionnaire to explore the greatest challenge providers were experiencing and their primary goal for attending the workshop. Three open-ended questions were asked on the post-training questionnaire to explore again, their greatest challenge, and aspects of their practice they changed after attending the workshop and additional training they felt would be beneficial.

**Analysis**

The data were coded and double entered into an excel spreadsheet by two different individuals, compared for discrepancies, and discrepancies were remedied by the researcher in the final data set. Data were analyzed using SPSS (v21). Descriptive statistics were used to identify trends. Paired samples t-tests were used to identify changes in responses pre- to post-training. Cohen’s d was used to determine the effect size of changes (Cohen, 1988).

**Results**

**Delivery of Parent Education**

Participants were asked to report the delivery methods they use (i.e., verbal explanation,written, website, demonstration) to provide parents with information. To provide parents with information all participants reported providing verbal explanations (N=45), many provided written information (professionals [n=18, 86%]; graduate students [n=17, 71%]); professionals provided demonstrations more frequently (n=15, 71%) than graduate students (n=7, 29%), and few provided websites (professionals [n=4, 19%]; graduate students [n=2, 8%]).

Participants were also asked to report the delivery methods they use (i.e., verbal explanation, written, website, demonstration) to teach skills to parents. The majority provided a verbal explanation to teach skills (professionals [n=20, 95%]; graduate students [n=21, 88%]), professionals provided written information more frequently (n=17, 81%) than graduate students (n=13, 54%) and provided demonstrations (n=16, 76%) more frequently than graduate students (n=12, 50%), few provided websites to support teaching of skills to parents (professionals [n=3, 14%]; graduate students [n=1, 4%]).

There are aspects of intervention that need to be managed every day for children with hearing loss (e.g. use of hearing aids). Participants were asked how often they teach skills to caregivers (i.e., mother, father, other primary caregiver) on a five-point Lickert scale (1=never to 5=always). Responses for “often and always” from professionals revealed that most teach skills to mothers (n=19, 91%); however, very few reported teaching skills to fathers (n=4, 19%) and other caregivers (n=2, 10%) (see Table 2).

**Collaboration and Interaction**

Collaboration among professionals providing services related to the child’s hearing loss can improve continuity of care. Participants were asked how often they collaborate with other professionals on a five-point Lickert scale (1=never to 5=always). Responses for “often and always” from professionals revealed the majority (n=16, 76%) reported collaborating with intervention providers (e.g., audiologist, speech-language pathologists, early interventionists, educators); however, only 19% (n=4) reported collaborating with the child’s primary care physician (see Table 2).

Communication with parents about how they are feeling and exploration of barriers to effective daily management can help parents identify solutions to problems. Participants were asked how often they communicate with parents about aspects of how parents are managing (e.g., identifying barriers, frustrations with management) on a five-point Lickert scale (1=never to 5=always); see Table 3. Results revealed inconsistent practices for all aspects queried, and two-thirds (67%; n=14) of professionals reported that they never or seldom communicate with parents about how to recognize if symptoms of depression and/or anxiety may be interfering with intervention management. Participants were also asked how often they felt parents were receptive when they provided support related to issues with daily management on a five-point Lickert scale (1=never to 5=always). Responses for “often and always” from professionals revealed that the majority (71.5%; n=15) felt parents were receptive to receiving help in recognizing challenges and identifying strategies to address problems; however only 38% (n=8) felt parents were receptive to monitoring the effectiveness of the strategies they were using.

**Provider Perceptions**

Providers view their practices through a unique lens that can influence their thoughts and opinions, impacting decisions they make in the delivery of services. Participants were asked their extent of agreement on various considerations that relate to service delivery on a five-point Lickert scale (1=never to 5=always). Results revealed trends among providers’ views for both professionals and graduate students. Approximately two-thirds (professionals [n=14, 66.7%]; graduate students [n=17, 70.8%]) felt most parents are able to consistently implement recommended interventions in their child’s daily life, and many felt parents are able to navigate challenges that arise (professionals [n=11, 52.4%]; graduate students [n=19, 79.1%]). Two-thirds of graduate students (n=16, 66.7) reported difficulty communicating when parents are distressed; however only 19% (n=4) of professionals reported difficulty. One-third (professionals and graduate students [33.3%; n=15]) felt that there is not enough time to address parent emotions during an appointment, however, very few (professionals [n=1, 4.8%]; graduate students [n=2, 8.3%]) indicated that their employer would not be supportive of extending appointment times to allow more time to talk to parents, and all participants (n=45, 100%) indicated that talking with parents about their feelings would improve their ability to help their child. Most participants (professionals [n=17, 85%]; graduate students [n=24, 100%]) agreed it is their role to help parents learn how to manage, and almost all (professionals [n=20, 95.3%]; graduate students [n=24, 100%]) indicated a desire for training on how to effectively support parents.

**Provider Confidence with Communication Skills**

How confident a provider feels about their own communication skills can influence their willingness to engage with parents in addressing specific intervention issues. Providers were asked to rate how confident they felt with various aspects of communication on a 100-point scale (0 = not confident at all and 100 = totally confident); see Table 4. Graduate students reported a lack of confidence with all skills queried. Professionals reported less confidence with certain skills more than others, including: screening for symptoms of depression and anxiety (M=35.52), exploring parent’s intense feelings (M=57.48), appropriately challenging a parent who denies the hearing loss (M=59.95), encouraging parents to talk about their emotions (M=67.76), and helping parents deal with uncertainty (M=69.57).

**Post-Training Changes**

Participants were invited to complete the questionnaire again one month after the training, and responses were obtained from 29 participants. Because this was a brief one-day training, changes in attitudes were anticipated more than actions. Paired sample t-tests were completed and as expected, no differences were found for participant practices; however, changes in attitudes were observed (see Table 4). Items 1-7 (Table 4) were analyzed together for each group (i.e., professionals and graduate students) and a paired samples t-test indicated statistically significant differences in responses between the pre-training (M=69.48, SD=15.29) and post-training (M=79.72, SD=11.19), conditions for professionals t(12)=3.614, p=.004, and the Cohen’s d of .76 equates to 24% overlap in the two distributions, suggesting training had a moderate effect on increasing confidence.

The remaining four items (Table 4) were also statistically significant for professionals and Cohen’s d suggested training had an effect on increasing confidence. Screening for symptoms of depression and anxiety t(12)=3.31, p = .006, d=.61; breaking bad news t(12)=3.39, p=.005, d=.46; appropriately challenge a parent who denies his or her child’s hearing loss t(12)=2.73, p = .02, d=.60; and helping a parent deal with the uncertainty of his or her child’s situation t(12)=4.74, p = .000, d=.85. Only screening for symptoms of depression and anxiety was significant for students: t(13)=2.36, p=.04, d=.71.

**Discussion**

Parents of children with hearing loss play a critical role in their child’s success. However, parents can experience challenges with ongoing daily management, and partnering with providers offers an avenue for support to overcome barriers to effective care. Training may be needed for providers related to how to go about effectively incorporating counseling strategies within ongoing education and support for families. The primary aim of this study was to explore practice patterns related to education and support provided to parents of children with hearing loss by hearing and intervention providers to better understand if providers experience engagement issues related to addressing parent support needs.

Aspects of service delivery were explored using a pre- and post-training questionnaire that addressed delivery of parent education, collaboration among professionals, interaction with parents, and provider confidence with communication skills. The participants in this study included both professionals and graduate students actively involved in providing services to children with hearing loss and their families. Changes in attitudes occur more readily than changes in actions (Heaven et al, 2006). For providers that completed the post-questionnaire, an increase in confidence was reported for several areas of communication; however, practices remained similar, and all of the practicing professionals and 94% of the graduate students indicated a desire for more training on how to be effective in supporting parents with implementing intervention recommendations. Prior to the seminar participants reported feeling uncertain about how to address parent feelings, and how to provide effective help to parents in addressing challenges. Even though these challenges remained post-training, participants reported an increased awareness of how they were interacting with parents and some reported attempting to change their interactions to address parent coping. There was also an increased recognition of the parent role in the intervention process, factors that can influence parent success, and factors that can influence providers’ engagement in extending support to parents.

**Clinical Implications**

For providers to be family-centered in the support they provide to parents, providers must align their support with parent values and goals. Each family is unique and they are the experts on their lives. Providers have an important role and bring invaluable information, services and supports to the intervention process. However, recognizing the need to partner with parents and how providers partner with parents can influence how effective providers are in helping families move forward in meeting intervention goals. The current study found that two-thirds of the participants reported that they thought parents were able to consistently implement recommended interventions in daily life. However, studies have reported problems including, inconsistent hearing aid use (e.g., Jones, 2013), parent reported challenges (e.g., Walker et al, 2013; Muñoz et al, 2013), parent lack of confidence and not enough time to talk about how they are feeling (Muñoz, manuscript submitted). Providers may not be aware of the struggles parents are experiencing and may not be confident in their ability to address problems related to parent emotions.

Different types of providers interact routinely with parents of children with hearing loss in the course of service provision. Collaboration among providers can improve communication about recommendations and challenges related to implementation (Muñoz and Blaiser, 2011). This study found that one-quarter of the professionals do not routinely collaborate with other intervention providers, and the 81% do not collaborate with the child’s primary care physician. Similarly, children often have more than one caregiver who needs to know how to manage the child’s hearing needs. This study found that mothers are most frequently taught skills (91%); fathers and other caregivers are infrequently included in direct instruction. It is concerning to note that parents have reported that they are not taught how to provide instruction to others (e.g., how to check hearing aid function) and have reported the ability of other caregivers as a challenge for hearing aid use (Muñoz et al, manuscript submitted).

For providers to be able to effectively support parent learning to help them acquire skills essential for daily management, both provider and parent oriented components need to be addressed. Providers not only need to incorporate evidence-based practice for technical components of service, but also need to use effective communication strategies to elicit and review concerns, and help parents with goal setting and problem solving in the context of continuous follow-up (Wagner et al, 2001). Providers may also need to consider how they can set the stage for success by proactively addressing organizational modifications (e.g., management of visits and follow-up), changes in information systems (e.g., reminders), and obtaining needed professional education to address skill deficits (Wagner et al, 2001).

**Training Implications**

Provider recognition of the importance of skillful communication does not necessarily translate into use of effective communication skills in practice (Heaven et al, 2006). To improve the quality of the communication process in practice settings, providers need to be able to implement effective communication skills on a regular basis. To provide training that leads to implementation of new skills and behaviors in practice, programs need to identify desired changes in service delivery and measure outcomes from training experiences (Proctor et al, 2011). Knowledge transfer to practice can be impeded by a variety of barriers, such as, individual challenges, facility specific challenges, policy (Michie, van Stralen, & West, 2011), and provider habits (Rochette et al, 2009).

Incorporating counseling strategies that provide a more patient-centered approach has been found to improve health outcomes (e.g., Britt et al, 2004). However, it has been less clear how to structure training to support the transfer of these skills to routine use in practice (Hulsman et al, 1999). An informal group discussion with five participants of the current study to explore challenges in practice four months after the training, revealed struggles such as how to approach problems without seeming judgmental, how to have difficult conversations, and how to change the approach when nothing seems to be working. At the conclusion of the discussion, participants were not only motivated and ready to continue working on communication strategies, but requested another session to talk through their progress and challenges, suggesting the important role of ongoing support for their learning process.

Future research is needed to determine effective ways of educating practicing professionals working with children with hearing loss and their families in how to incorporate communication that leads to behavior change. Pre-service training programs also need to assess how effectively they are preparing future professionals in the area of counseling. A lack of required coursework in counseling in audiology programs has been identified (ASHA, 2008).

**Conclusion**

Children with hearing loss can develop on par with their typically hearing peers when they receive timely and effective intervention. Parents have a central role in the intervention process and for parents to be effective their needs must be addressed within the scope of ongoing care and monitoring of the child’s hearing loss. Providers do not necessarily have the communication skills needed to adequately help parents, requiring additional focused training to change how providers interact with parents and the way support is provided.

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