Telepractice-Based Assessment of Children who are Deaf or Hard-of-Hearing: Focus on Family-Centered Practice

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Abstract

Ongoing assessment and progress monitoring is considered best practice to serve children who are Deaf or Hard-of-Hearing (DHH), yet logistics related to provider shortages, distances between families, and illness make regular assessment difficult if not impossible. In the last ten years, telepractice has become a more commonly used service delivery model for serving children who are DHH and their families, however, many providers lack the training needed to adequately assess this population (Behl & Kahn, 2015). With explicit planning of the assessments and tools needed on both sides of the camera, providers can create a shared framework to collect the information necessary to create a family-centered, comprehensive assessment plan that empowers families to engage in collaborative decision-making needed to optimize the outcomes of their child. This paper outlines a tutorial of provider considerations to incorporate family-centered practices as a central aspect of assessment via telepractice and provides an example of how assessments can be administered with the use of technology.

Keywords: telepractice, family-centered, assessment, Deaf

Acronyms: CDI = MacArthur Bates Communication Development Inventory; DHH = deaf or hard of hearing, EHDI = Early Hearing Detection and Intervention; EI = Early Intervention; FOS = Family Outcomes Survey; RBM = routine-based model

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State Early Hearing Detection and Intervention (EHDI) systems have been successful in supporting newborn hearing screening and increasing early intervention enrollment rates after diagnosis of congenital hearing loss (Subbiah et al., 2018). However, systematic early assessment and intervention protocols for children who are Deaf or Hard-of-Hearing (DHH) still lag behind these identification systems. Assessment and intervention of children who are DHH is particularly challenging when families live in remote locations. Telepractice has gained momentum as a service delivery model over the last ten years as a way to address these challenges (Behl et al., 2017; Blaiser & Behl, 2016; Houston, 2019). However, with COVID protocols in 2020, the need for telepractice for assessment and intervention quickly went from a service delivery option to a service provision necessity. Although COVID protocols may change and allow face-to-face intervention to resume, it will be important to sustain telepractice efforts to provide comprehensive assessment of young children who are DHH in remote areas.

Telepractice not only offers equitable services to children who are DHH regardless of the presence of a local provider, it also epitomizes families as the center of early intervention. Family-centered practices are the foundation for early intervention programming and focus on families as collaborative partners and the experts on their child

(Bruder, 2000). The Joint Committee on Infant Hearing (JCIH) 2019 Position Statement outlines key aspects of family-centered care as strength-based, collaborative, and proactive (Dunst et al., 2007; Dunst & Dempsey, 2007; JCIH, 2019). In a family-centered approach, providers create a shared framework for assessment and intervention by collecting information from families through tools such as case history, interview, observations, and inventories. With this information, an intervention program can be developed to focus on the family's individual priorities, strengths, needs, and resources. Fortunately, families who have received early intervention services via telepractice feel more engaged and empowered in the early intervention process because they, instead of the provider, are in the "driver's seat" as a primary support for their child's growth and development (Behl et al., 2017; Blaiser et al., 2013; Estabrooks et al., 2020).

The use of telepractice to perform speech and language assessments in early childhood has been questioned by some early interventionists, service providers, and program administrators. However, recent studies have demonstrated consistent reliability, validity, and overall efficacy of pediatric speech and language assessment results when obtained through a telepractice service delivery model (Bernie, 2019; Sutherland et al., 2021; Taylor et al., 2014). Similarly, Manning et al. (2020) found

that language samples derived from parent-child play and collected via telepractice were feasible, reliable, and valid.

Successful assessment administration via telepractice requires systematic consideration of what needs to be done during an assessment as well as the tools that are needed to accomplish this goal. Telepractice is unique both in that there are different tools available than in-person models and that the provider needs to consider what is happening on the end-users (the family's) side of the camera. An important aspect of providing assessment via telepractice is understanding four primary considerations of assessment and potential modifications that need to be made as shown in Figure 1.

As shown in Table 1, key aspects of family-centered assessment of young children who are DHH include interview, observation/ language samples, and inventories. In telepractice, the provider is reliant on the caregiver's reports and interactions with the child as a key part of the collection of data and information. It is important for the provider to consider and be explicit with the caregiver about what needs to be done and to provide explanations why. Caregivers want, by nature, for their child to be successful in assessments and may have a difficult time not trying to help their child *perform*. Providers need to give caregivers clear expectations of what is needed in terms of time commitment and space for the different aspects of the assessment process.

Figure 1
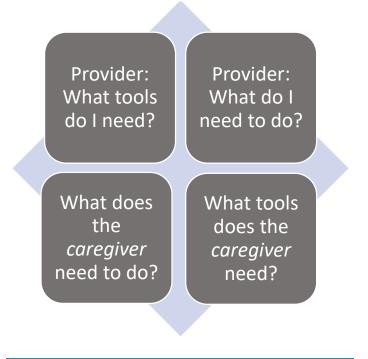*Key Considerations for Assessment via Telepractice*

Table 1
Provider and Caregiver Considerations for Assessment via Telepractice

Task	Description	Provider process	Caregiver process
Interview	Families provide information about their priorities, concerns, resources, and daily routines.	• Identify key instruments/questions • Prepare family for the amount of time it will take • Send questions in advance or electronically	• Answer questions • Schedule time (with less distractions to focus on the questions)
Observation/Language sample	Providers observe and can record a family's routines and interactions in a natural environment.	• Identify what aspects of care provider is looking for (caregiver-child interaction, child auditory skills, child's use of sign/gestures) • Inform family about the purpose of the observation/language sample • Provide instructions for the sample (what type of routine, open-ended questions, wait time)	• Identify a time/routine for observation • Understand the purpose of the observation/ language sample • Engage with child
Inventory	Inventories provide an existing framework for collecting information in relation to a child's skills, family support.	• Identify the appropriate inventories • Provide family with inventories • Provide instructions, a time estimate, and clarifications as needed	• Identify a family member to complete the inventories • Complete the inventories

Tools

After the provider and caregiver have established what needs to be done, they can work together to effectively determine the tools that are needed (on both sides of the camera) to accomplish these goals (see Table 2). Providers need to assess the technology that is being used and/or support that is needed on either side of the camera to successfully meet the assessment needs. Examples include recording of the session for review and analysis, interview and/or inventories sent ahead of time (either paper or electronically), and an opportunity to prepare the caregiver for the tasks of participating in assessment.

Table 2
Provider and Parent Assessment Tools

Task	Description	Provider needs/tools	Caregiver needs/tools
Interview	Families provide information about their priorities, concerns, resources, and daily routines.	• Identify instruments • Share ahead of time • Paper/electronic	• Computer • Scanner/Scanning app on technology • Time • Quiet space
Observation/Language sample	Providers observe and can record a family's routines and interactions in a natural environment.	• Ability to record • Visualized results • Shared drives • Shared drives	• Camera/audio
Inventory	Inventories provide an existing framework for collecting information in relation to a child's skills, family support.	• Paper-based or electronic-based • Data visualized results	• Computer/tablet/phone • Time to complete

Providers should discuss with the caregivers ahead of time the need for a quiet place with age-appropriate and preferred toys, a familiar routine, and the caregiver's use of wait time for the child to initiate and/or respond. In times of COVID, when families are working from home and may be moving from meeting to meeting, it is important to provide additional time for the caregiver to complete inventories and/or case history and interview questions. When these are sent in advance electronically in an email or a simple Google form, the caregiver has increased time and space to thoughtfully answer the questions rather than rush the answers between meetings.

Telepractice Assessment Examples

Routines-Based Interview

The Routines-Based Model (RBM; McWilliam, 2010) provides a framework for providers to work with families to collect and use an *ecomap* of the families' day to identify and target different routines throughout the day as opportunities for intervention. McWilliam (2020) outlined how RBMs can successfully be integrated as part of a telepractice service delivery model (http://naturalenvironments.blogspot.com/2020/03/tele-intervention-and-routines-based.html). Understanding a families' unique routines is particularly important for the Early Intervention (EI) provider who serves children who are DHH. Full-time access to well-fitted hearing technology is integral to the communication, social-emotional, and academic success of young children who are DHH and use spoken language (Tomblin et al., 2014). Use of the Routines Based Interview helps the EI provider to identify when and how to integrate use of hearing technology throughout the family's day. Hearing aid retention, while often a challenge for families of young children who are DHH (Munoz et al., 2014), can be supported when providers and families work together to determine when hearing technology can be integrated into daily routines.

Observation and Language Samples

A key part of assessment in early intervention is observation of the interactions between the child and their caregiver. Observations can provide rich information about turn-taking, engagement, responsiveness, and the child's communication skills and development. Telepractice offers an excellent opportunity for a provider to be a non-intrusive observer of the interactions between a caregiver and a child in their natural environment. When providers get permission to use and share recordings as part of telepractice, these recorded observations give providers the ability to share specific examples with the caregiver as a coaching tool to address strategies such as wait time, responsiveness, and following the child's lead. Telepractice, and the recording of the assessment or session, allows the provider to share the interaction with the caregiver or other family and care providers to provide explicit examples of skills and opportunities. In situations when observation is difficult, the family can record their routine and share it with the provider.

Language samples are the gold standard of assessment and provide valuable information about a child's early communication strengths and opportunities (Blaiser & Shannahan, 2018; Werfel & Douglas, 2017). Language samples of toddlers show the child's lexical diversity, semantic relational categories, and presence or absence of early developing morphemes. Providers can use word clouds (as shown in Figures 2 and 3) as a family-centered tool to share vocabulary-based language sample results. Word clouds are a visual display of the number of total words and the number of different words a child produces. Because caregivers have a visual example of their child's productions, this creates a shared communication framework for discussion of the language sample analysis and can create a more effective plan for intervention programming.

Figure 2

First Example of a Word Cloud from a Language Sample of a Child Using Mostly Nouns and Verbs

Figure 3

Second Example of a Word Cloud from a Language Sample with a Child Using Grammatical Morphemes, Conjunctions, and Adjectives

Inventories

Caregiver-completed inventories engage families in the assessment process and provide a criterion-referenced way to assess a child's communication development.

The MacArthur Bates Communication Development Inventory (CDI; Fenson et al., 2006) is a caregiver-report instrument that provides information about the child's receptive and expressive vocabulary as well as gestures and early syntactic development. CDI scores have been correlated with standardized language assessment such as the Preschool Language Scale, 5th Edition (PLS-5; Zimmerman et al., 2011) and Clinical Evaluation of Language Fundamentals, 5th Edition (CELF-5; Wiig, 2013) as well as linked with later executive function skills (Castellanos et al., 2016; Thal et al., 2007).

The Family Outcomes Survey (FOS; Bailey et al., 2011) is a nationally recognized tool used to assess family's perceptions about their levels of support, understanding of their child's development, and access to community resources. The FOS is posted on the ECO Center website (http://www.the-eco-center.org) in multiple languages with open access for states, local programs, and researchers. Blaiser et al. (2013) and Behl et al. (2017) used the FOS to measure family support in families who used telepractice and those who received in-person intervention. Results indicated no statistically significant differences between these groups showing that families in the telepractice condition felt equally as supported, educated, and included in their community. The FOS is a particularly useful way to identify the unique support needs of each family (i.e., links to community resources, information about child development, tools to support family's ability to help support growth).

For children who use hearing technology, it is important to have an ongoing record of how the child is using auditory skills as a part of communication in their daily lives (McCreery et al., 2015). Of the many questionnaires that have been developed to assess auditory outcomes in children who are DHH, the LittlEARS (Tsiakpini et al., 2004), ABEL (Purdy et al., 2002), and PEACH (Ching & Hill, 2007) are some of the more reliable and frequently used questionnaires. Caregiver reports through use of questionnaires are recommended as a primary method for documentation and assessment of auditory skill development (Bagatto et al., 2011). These questionnaires are a reliable means for infant and toddler testing because young children are less likely to participate in unfamiliar situations and environments making it difficult to complete formalized testing (Coninx et al., 2009). Auditory skill inventories can be predictive of later language abilities (Ching & Hill, 2007).

Example of Comprehensive Online Assessment Battery

Idaho is a rural state with a lack of providers who specialize in serving children who are DHH in each of the eight educational regions throughout the state. Comprehensive assessment of young children who are DHH requires a substantial amount of travel, time, and resources for families who live in rural/remote areas. Therefore, there was a need for an assessment battery that could be accessed by families regardless of their geographic location. A collaborative team of stakeholders in Idaho identified a framework that integrated the administration of these inventories as a way to meet the needs across the state. At the onset of the project, project leaders worked with the Idaho Educational Services for the Deaf and Blind (IESDB) and statewide stakeholders from the Idaho Community Collaboration (ICC; Blaiser & Bargen, 2020) representing assessment end-users (parents/family members, providers, administrators) with geographic diversity and a spectrum of communication modalities. Based on discussions with the ICC group, the inventories found in Table 3 were identified to capture specific aspects of communication development: vocabulary (signed, spoken, and both), complex language use, early auditory skill development, and family support.

Table 3

Idaho Collaborative Assessment Project Battery of Assessments

Domain	Outcome measure	Age range
Receptive and Expressive Vocabulary	MacArthur Bates Communication Development Inventory-Words & Gestures (Fenson et al., 2006)	8–18 months
	MacArthur Bates Communication Development Inventory-Words & Sentences (Fenson et al., 2006)	16–30 months
Complex Language/ Pragmatics	Language Use Inventory (O'Neill, 2009)	18–47 months
Family Support	Family Outcomes Survey (Bailey et al., 2011)	0–36 months
Auditory Skill Development	LittlEARS (Tsiakpini et al., 2004)	0–48 months

This online assessment battery, the Idaho Collaborative Assessment Project (ICAP; Blaiser et al., 2020), was developed to meet the needs of the state and to help ensure that assessments were accessible to all families (regardless of proximity to provider or geographic location) and implemented with support from foundation funding. Permission to put the assessment in an online format using Qualtrics was obtained from the inventories' publishers. This online administration of the assessments was more time and cost-efficient than a paper-based system with mailing and/or scanning assessments as part of data collection and data entry. In 2020, given stringent COVID protocols, the system remained intact with little to no changes except for new time constraints and stressors on family members and providers.

The online format provided families with an opportunity to complete the inventories in their own home at their convenience and increased efficiency as families were technically entering their own information into the system. To date, over 85 families have participated in the ICAP project from all of the six regions in Idaho.

Collaboration

Telepractice offers increased opportunities for interprofessional collaboration in the assessment process by providing increased flexibility of scheduling and connecting. Children who are enrolled in early intervention can be seen by a variety of providers: early interventionist, speech-language pathologist, developmental specialist, teacher of the DHH, and audiologist. Each of these providers play a unique and beneficial role, yet often come to the table with varying perspectives as well as educational and personal backgrounds. Given this variation, there is limited ability to interpret and integrate assessment results into intervention plans and family support. When the primary provider on a child's educational team lacks training about childhood hearing loss, they may not be well-equipped to assess communication outcomes or support the family's understanding of the effect of hearing loss on the child's overall development. A shared framework that is easy to "decode" is particularly important in EI where some providers are unsure of the link between well-fit hearing technology, auditory skill development, and the use of complex spoken language. Providers are the catalyst in supporting families in understanding and integrating assessment results and need to have confidence in interpreting and sharing assessment results.

Example of a Telepractice-Based Assessment

Sam is a two-year, three-month old child who has been seen via telepractice for three months. Because the sessions occur via telepractice, both of Sam's parents are able to participate in the sessions. The EI provider is working with the family to collect assessment data for the upcoming transition meeting. As part of this process, the EI provider has arranged to observe Sam and his parents as they prepare and eat lunch. The family has shared that this routine is one they enjoy together as Sam loves helping to cook and cut the fruits. During this observation,

the EI provider is collecting a language sample as well as noting the strategies that parents are using to call attention to sound, as well as model and support language. The EI provider will use the language sample to asses Sam's Mean Length of Utterance, Number of Different Words, Number of Total Words, intelligibility, topic maintenance, and initiations. The EI provider reflects that the observation on Zoom was even more effective than language samples/observations in the past as she was able to be *invisible* to the child and get a better sense of what language has been used in the home with less prompting from the families.

To make the results easy for the parents to read, she will use a word cloud to visually display the results of the vocabulary Sam is using. The family will also complete the online version of the Language Use Inventory (O'Neill, 2009) to assess language complexity, a fillable PDF of the MacArthur Bates Communication Development Inventory (Fenson et al., 2006), and the LittlEARS (Tsiakpini et al., 2004) to supplement the information gathered from the observation. The provider will set up a Zoom call, with the permission of the family, to connect with the child's clinical audiologist and to ensure up-to-date information about hearing technology, wear time, and programming changes are included with the assessment report.

Discussion

The purpose of this article was to provide a tutorial and example of how telepractice can be used to meet best practice in family-centered assessment of young children who are DHH. Assessment is the foundation for programming effective intervention, monitoring progress, and determining service eligibility. Ongoing comprehensive assessment following the diagnosis of a hearing loss is integral to ensuring that children who are DHH develop communication and academic outcomes similar to their same-age hearing peers. Ongoing assessment is a primary tenet of best practice guidelines for young children who are DHH and a pivotal piece of ensuring that an intervention program is effective and on-track (JCIH, 2007, 2019). Telepractice helps to provide equity in access to high quality family-centered assessment practices for children who are DHH, regardless of their geographic location, shortages of highly qualified personnel, or travel conditions. Assessment practices via telepractice are most effective when providers consider assessment goals, evaluate technology needs and capabilities, and integrate knowledge about a family's resources and needs as they relate to being able to engage in the assessment process. Future directions to ensure that best practice is implemented should include pre- and post-service training and support for providers to use and integrate telepractice with young children who are DHH. Additionally, there is a need for cross-training of providers to understand what assessment protocols can be used, and how they can be interpreted, to optimize the outcomes of young children who are DHH.

Although telepractice has been integral to offering continuity of care during the COVID pandemic, it is important to understand that many families, prior to

COVID, were faced with lack of services due to their geographic location and/or the lack of providers. Being family-centered means considering the family's time and ability to engage in interviews, complete inventories, and create a quiet, focused place for observation. In a truly family-centered approach, technology can be used to create alternative times and spaces for collecting what is needed as part of a comprehensive assessment process. The lessons learned in the last two years offer a first step toward equitable access to high quality service delivery and assessment practices.

References

Bagatto, M. P., Moodie, S. T., Malandrino, A. C., Richert, F. M., Clench, D. A., & Scollie, S. D. (2011). The University of Western Ontario pediatric audiological monitoring protocol (UWO PedAMP). *Trends in Amplification, 15*(102), 57–76. https://doi.org/10.1177/1084713811420304

Bailey Jr, D. B., Raspa, M., Olmsted, M. G., Novak, S. P., Sam, A. M., Humphreys, B. P., Nelson, R., Robinson, N., & Guillen, C. (2011). Development and psychometric validation of the family outcomes survey-revised. *Journal of Early Intervention*, *33*(1), 6-23. https://doi.org/10.1177/1053815111399441

Behl, D. D., Blaiser, K., Cook, G., Barrett, T., Callow-Heusser, C., Brooks, B. M., Dawson, P., Quigley, S., & White, K. (2017). A multisite study evaluating the benefits of early intervention via telepractice. *Infants & Young Children, 30*(2), 147–161.

Behl, D. D., & Kahn, G. (2015). Provider perspectives on telepractice for serving families of children who are deaf or hard of hearing. *International Journal of Telerehabilitation*, *7*(1), 1–12. https://doi.org/10.5195/IJT.2015.6170

Bernie, E. (2019). Critical Review: What is the efficacy of a telepractice service delivery model when compared to traditional on-site therapy for school-aged children receiving speech sound intervention (SSI)? [Master's thesis, University of Western Ontario]. https://www.uwo.ca/fhs/lwm/teaching/EBP/2018_19/Bernie.pdf

Blaiser, K. M., & Bargen, G. A. (2020). EHDI system effectiveness: The impact of community collaboration. *Journal of Early Hearing Detection and Intervention, 5*(1), 54–61. https://doi.org/10.26077/3cym-p824

Blaiser, K., Bargen, G., & Mason, P. (2020). Visualizing outcomes: Lessons learned in how to use data visualization in early intervention. EHDI Conference: Kansas City, KS.

Blaiser, K., & Behl, D. (2016, Dec.). Telepractice training for early intervention with children who are deaf/

hard-of-hearing. *Perspectives of the ASHA Special Interest Groups, 1*(SIG 9), 60–67. https://doi.org/10.1044/persp1.SIG9.60

Blaiser, K., Behl, D., Callow-Heusser, C., & White, K. (2013). Measuring costs and outcomes of tele-intervention when serving families of children who are deaf/hard-of-hearing. *International Journal of Telerehabilitation, 5,* 3–10.

Blaiser, K., & Shannahan, M. (2018). Language sample practices with children who are deaf and hard-of-hearing. *Language Speech-Hearing Services in the Schools, 49*(4), 950964. https://doi.org/10.1044/2018_LSHSS-17-0130

Bruder, M. B. (2000). Family-centered early intervention: Clarifying our values for the new millennium. *Topics in Early Childhood Special Education, 20,* 105. https://doi.org/10.1177/027112140002000206

Castellanos, I., Pisoni, D., Kronenberger, W., & Beer, J. (2016). Early expressive language skills predict long-term neurocognitive outcomes in cochlea implant users: Evidence from the MacArthur-Bates Communicative Development Inventories. *American Journal of Speech-Language Pathology.* https://doi.org/10.1044/2016_AJSLP-15-0023

Ching, T. Y. C., & Hill, M. (2007). The parents' evaluation of aural/oral performance of children (PEACH): Normative data. *Journal of the American Academy of Audiology, 18*(3), 220–235.

Coninx, F., Wiechbold, V., Tsiakpini, E., Autrique, E., Bescond, G., Tamas, L., Compernol, A., Georgescu, M., Koroleva, I., Le Maner-Idrissi, G., Liang, W., Madell, J., Mikic, B., Obrycka, A., Pankowska, A., Pascu, A., Popescu, R., Radulescu, L., Rauhamäki, T. … Brachmaier, J. (2009). Validation of the LittlEARS auditory questionnaire in children with normal hearing. *International Journal of Pediatric Otorhinolaryngology, 73*, 1761–1768. https://doi.org/10.1016/j.ijporl.2009.09.036

Dunst, C. J., & Dempsey, I. (2007). Family–professional partnerships and parenting competence, confidence, and enjoyment. *International Journal of Disability, Development and Education*, *54*(3), 305–318. https://doi.org/10.1080/10349120701488772

Dunst, C., Trivette, C., & Hamby, D. (2007). Meta-analysis of family-centered helpgiving practices research. *Mental Retardation and Developmental Disabilities Research Reviews, 13*(4), 370–378. https://doi.org/10.1002/mrdd.20176

Estabrooks, W., McCaffrey Morrison, H., & MacIver-Lux, K. (2020). *Auditory-verbal therapy: science, research and practice.* Plural Publishing.

Fenson, L., Marchman, V. A., Thal, D. J., Dale, P. S., Reznic, J. S., & Bates, E. (2006). *The MacArthur–Bates Communicative Development Inventories* (2nd ed.). Brookes.

Houston, K. T. (2019). Using telepractice to improve outcomes for children who are deaf or hard of hearing & their families. *The NCHAM E-book: A Resource Guide for Early Hearing Detection and Intervention*. NCHAM.

Joint Committee on Infant Hearing. (2007). Year 2007 position statement: Principles and guidelines for early hearing detection and intervention programs. *Pediatrics*, *120*(4), 898–921.

Joint Committee on Infant Hearing. (2019). Year 2019 Position Statement: Principles and guidelines for early hearing detection and intervention programs. *Journal of Early Hearing Detection and Intervention, 4*(2), 1–44. https://doi.org/10.15142/fptk-b748

Manning, B. L., Harpole, A., Harriott, E. M., Postolowicz, K., & Norton, E. S. (2020). Taking language samples home: Feasibility, reliability, and validity of child language samples conducted remotely with video chat versus in-person. *Journal of Speech, Language, and Hearing Research, 63*(12), 3982–3990. https://doi.org/10.1044/2020_JSLHR-20-00202

McCreery, R. W., Walker, E. A., Spratford, M., Oleson, J., Bentler, R., Holte, L., & Roush, P. (2015). Speech recognition and parent-ratings from auditory development questionnaires in children who are hard of hearing. *Ear and Hearing*, *36*(1), 60S.

McWilliam, R. A. (2010). *Routines-based early intervention.* Brookes Publishing.

McWilliam, R. A. (2020). *Early intervention in natural environments.* http://naturalenvironments.blogspot.com/2020/03/tele-intervention-and-routines-based.html

Muñoz, K., Olson, W., Twohig, M., Preston, E., Blaiser, K., & White, K. (2014). Pediatric hearing aid use: Parent-reported challenges. *Ear & Hearing, 35,* 279–287.

O'Neill, D. K. (2009). Language use inventory. *Ontario, Canada: Knowledge in Development*. https://languageuseinventory.com

Purdy, S. C., Farrington, D. R., Moran, C. A., Chard, L. L., & Hodgson, S. A., (2002). A parental questionnaire to evaluate children's auditory behavior in everyday life (ABEL). *American Journal of Audiology, 11,* 72–82. https://doi.org/10.1044/1059-0889(2002/010)

Subbiah, K., Mason, C. A., Gaffney, M., & Grosse, S. D. (2018). Progress in documented early identification and intervention for deaf and hard of hearing infants: CDC's hearing screening and follow-up survey, United States, 2006–2016. *Journal of Early Hearing Detection and Intervention, 3*(2), 1–7. https://doi.org/10.26077/6sj1-mw42

Sutherland, R., Hodge, A., Chan, E., & Silove, N. (2021). Clinician experiences using standardised language assessments via telehealth. *International Journal of Speech-Language Pathology*, *23*(6), 569–578. https://doi.org/10.1080/17549507.2021.1903079

Taylor, O. D., Armfield, N. R., Dodrill, P., & Smith, A. C. (2014). A review of the efficacy and effectiveness of using telehealth for paediatric speech and language assessment. *Journal of Telemedicine and Telecare*, *20*(7), 405–412.

Thal, D., DesJardin, J. L., & Eisenberg, L. S. (2007). Validity of the MacArthur–Bates Communicative Development Inventories for measuring language abilities in children with cochlear implants. *American Journal of Speech-Language Pathology*, *16*(1), 54–64.

Tomblin, J. B., Oleson, J. J., Ambrose, S. E., Walker, E., & Moeller, M. P. (2014). The influence of hearing aids on the speech and language development of children with hearing loss. *JAMA Otolaryngology Head Neck Surgery, 140*(5), 403–409. https://doi.org/10.1001/jamaoto.2014.267

Tsiakpini, L., Weichbold, V., Kuehn-Inacker, H., Coninx, F., D'Haese, P., & Almadin, S. (2004). *LittlEARS Auditory Questionnaire*. MED-EL.

Werfel, K. L., & Douglas, M. (2017). Are we slipping them through the cracks? The insufficiency of norm-referenced assessments for identifying language weaknesses in children with hearing loss. *Perspectives of the ASHA Special Interest Groups, 2*(SIG 9), 43–53. https://doi.org/10.1044/persp2.SIG9.43

Wiig, E. H., Semel,& E., & Secord, W. A. (2013). Clinical evaluation of language fundamentals, 5th edition. Pearson.

Zimmerman, I. L., Steiner, V. G., & Pond, R. E. (2011). Preschool language scale, 5th edition. Pearson.