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Abstract

Overall, the literature is clear that more research is needed on various assessment techniques for identifying co-occurring disabilities in young children who are deaf and hard of hearing (DHH). As individualized, norm-referenced assessment measures are updated to keep up with the changing demographics of the United States, there appears to be more of an effort to include children with various disabilities within the standardization samples; however, the communication barriers and required assessment accommodations remain the most salient with DHH students. Because accommodations are test-specific, psychologists must be cognizant of the accommodation and interpretation procedures of each test they select for an assessment battery when attempting to determine co-occurring diagnoses or special education eligibility categories for young children who are DHH. This article reviews the literature on the assessment of common co-occurring disabilities in young children, including intellectual disability, specific learning disability, autism spectrum disorder, attention deficit hyperactivity disorder, and emotional and behavioral disorders.

Keywords: *early childhood assessment, deaf students, comorbid conditions*

As special education laws have evolved, increased recognition and value have been placed on early childhood education and early intervention services (Graham & Shuler-Krause, 2019). The original special education law, the Education of All Handicapped Children Act, PL 94-142, passed in 1975. The original act did not mention or address the needs of infants, toddlers, and their families. The act was reauthorized in 1986 to include Part C of the Individuals with Disabilities Education Act (IDEA). Part C established early intervention services for infants and toddlers and created services for families of children with disabilities (Katsiyannis, Yell, & Bradley, 2001). The mandates included in Part C require a comprehensive multidisciplinary evaluation. Once the Individualized Family Service Plan (IFSP) has been developed, assessments will be ongoing to monitor progress (IDEA, 2004). Furthermore, once a child reaches their third birthday, an assessment occurs to determine their eligibility for continued services under Part B of IDEA when an Individualized Education Program (IEP) would be developed. These services begin with preschools housed in the public-school setting and continue into elementary school and beyond with appropriate identification of educational needs.

Importance of Early Childhood

Infancy and the early childhood years, including early elementary school, are critical for development and learning across all domains. For young children with disabilities, early childhood years are significant for numerous reasons and are known for encouraging long-term success and achievement outcomes for children and their families (Bruder, 2010). For instance, the earlier the identification of the disability, the greater the likelihood for benefits from early interventions and services (Guralnick, 2005). Families and caregivers benefit from support navigating special education services and meeting the needs of children with disabilities (Dunst, 2007). Schools and communities experience a financial benefit because children arrive at school needing fewer supports and ready to learn (Carta & Kong, 2007).

The benefits of early childhood programs, interventions, and services have also been noted for children who are deaf and hard of hearing (DHH; Moeller, 2000; 2007). The Joint Committee on Infant Hearing (JCIH; 2019) stated that the importance of early intervention for DHH children was to minimize or prevent delays and encourage linguistic communication skills, literacy development, and psychosocial well-being. Given development across all domains occurs rapidly in the first five years of life, there are significant benefits to supporting a child in each area during this time. In addition to family members, various professionals contribute to a child's development, including educators, physical therapists, speech-language pathologists, and occupational therapists. To ensure appropriate programs have been developed, optimal collaboration among all team members occurs, and adequate progress is being made, assessment is an essential and critical part of the process. Assessment of preschool-aged children is complex and challenging, and involves several separate pieces (Kelly-Vance & Ryalls, 2005).

During preschool and early elementary years, educational assessment has an essential role in monitoring progress, developing educational programs, and identifying children for special education services (Pizzo & Chilvers, 2019). For DHH children and those administering the assessments, it is a multifaceted process that has the potential to lead to faulty decision making (Pizzo & Chilvers, 2019). The lack of appropriate assessment information can cause DHH children to receive early intervention services that are inadequate or ineffective (Graham & Shuler-Krause, 2019). For DHH children, inaccurate assessments can have a lasting harmful impact, including a misdiagnosis of an additional disability or the missed diagnosis of a key co-occurring disability for which the child would benefit from additional supports, accommodations, and modifications (Pizzo & Chilvers, 2019). Researchers estimate approximately 40% of children who are DHH have a co-occurring disability (Guardino & Cannon, 2015), making an accurate assessment with this population extremely important. There is currently

not enough focus on the challenges that arise from assessing DHH children in the early years (Graham & Shuler-Krause, 2019).

The purpose of this article is to summarize the research discussing the assessment of common co-occurring disorders in young children who are DHH. Disability areas covered in this article include intellectual disability, specific learning disability, autism spectrum disorder, attention deficit hyperactivity disorder, and emotional disability. Although an exhaustive review is beyond this paper's scope, this information can help guide clinicians and school psychologists, who may have limited exposure to this low-incidence population, in their assessment planning.

Intellectual Disability

Cognitive abilities can be accurately measured during the preschool years and generally remain stable throughout the lifespan (Tusing & Ford, 2004). Assessment of cognitive abilities during preschool and early elementary school provides a valid and reliable estimate of a child's intellectual functioning, paving the way to special education services if under-developed abilities are identified. These services are especially crucial for DHH children who are at greater risk for a comorbid intellectual disability. Approximately 9% of students who are DHH have co-occurring intellectual disability (Gallaudet Research Institute, 2011), a higher prevalence rate than exists in the general population; approximately 1-2% of the US population are identified with an intellectual disability (Maulik et al., 2011). This higher incidence of intellectual disability may be accounted for by shared congenital or prenatal risk factors (Carvill, 2001; Herer, 2012), but no specific studies have been conducted to evaluate these shared factors' effects on the higher prevalence rates.

Separating the assessment of language skills and the assessment of language-based reasoning skills presents school psychologists with a significant dilemma when attempting to assess for a comorbid intellectual disability. Items on verbal subtests historically function differently within the DHH population (Maller, 1997), causing

school psychologists and other assessment professionals to focus on fluid reasoning and visuospatial abilities. With the complexity of cognitive abilities, as defined by modern intellectual theory (i.e., Cattell-Horn-Carroll Model), consisting of multiple layers of various abilities, focusing on a limited scope of abilities may misrepresent the true cognitive functioning of this population. Given that many DHH students have language skills through ASL or oral communication, assessing for language-based knowledge (i.e., crystallized intelligence) should be considered appropriate; however, standardization of many intelligence tests has not been completed with ASL translation (Reesman et al., 2014). Even when hearing devices are utilized and the child's hearing measures within the normal range, he or she may still have difficulty discriminating between certain sounds, adding error into the administration of some verbal subtests (Day, Costa, & Raiford, 2015). When assessing for a co-occurring intellectual disability, school psychologists should carefully review the accommodation guidelines of any cognitive ability test they consider for the evaluation and interpret results in light of these accommodations.

With the need for psychometrically sound instruments for assessing cognitive ability in preschool children who are DHH, some contemporary intelligence tests include recommendations for test accommodations and interpretation in their manuals or supplemental materials. For instance, the *Kaufman Assessment Battery for Children, Second Edition* (KABC-II; Kaufman & Kaufman, 2004) and its recently published *Normative Update* (Kaufman & Kaufman, 2018) is a very popular test of cognitive ability for young children due to the developmentally appropriate visual stimuli utilized throughout the assessment. The KABC-II and the normative update include individuals who are DHH within the "other impairment" category of individuals with disabilities in the standardization samples. This category of "other impairments" matched the United States school-aged population prevalence rates of other diagnoses or educational classifications, thus providing evidence to clinicians that the KABC-II-NU can be

utilized with a DHH student. Furthermore, the nonverbal scales included in the KABC-II were developed with signing and alternative forms of administration inherently within the standardized instructions (Kaufman, Lichtenberger, Fletcher-Janzen & Kaufman, 2005). Research indicates when the KABC-II is administered by examiners fluent in ASL, students with moderate to severe hearing loss display overall intelligence scores similar to their hearing peers (Kaufman & Kaufman, 2004). The majority of the difference in cognitive abilities on this measure fell within the categories of auditory memory and crystalized intelligence, supporting historical findings (see Maller 1997 for a discussion of memory skills in the DHH population).

The *Wechsler Intelligence Scale for Children, Fifth Edition*, (WISC-V; Wechsler, 2014) and the *Wechsler Preschool and Primary Scale of Intelligence, Fourth Edition* (WPPSI-IV; Wechsler, 2012) are two of the most widely used tests of cognitive ability for young children. While the WISC-V excluded children with an uncorrected hearing loss from the standardization sample, it may be appropriate to assess a student with the WISC-V who utilizes a cochlear implant, hearing aid, or other assistive technology. A separate technical report was published and presented administration and interpretation considerations when choosing to administer the WISC-V with a child who is DHH (Day, Costa, & Raiford, 2015). Since the normative sample did not include children whose native language was ASL, and administration was not standardized with ASL examiners or interpreters, caution should be taken when making interpretations from adapted administrations. Day, Adams Costa, and Raiford (2015) provide guidelines for appropriate modifications for administration and interpretation considerations to the various composites of the WISC-V based on the child's required communication modality. For example, administration of the Verbal Comprehension Index in ASL is not recommended as the mode of delivery and "may alter the task demand or introduce construct irrelevant variance." In contrast, the Visual Spatial, Fluid Reasoning and Processing Speed Indexes are considered under the category "Administration is possible with little or no modification" (p. 7, Day, Adams Costa, & Raiford, 2015).

Similarly, these authors provide guidelines for administering the WPPSI-IV to young children who are DHH (Adams Costa, Day, & Raiford, 2015). Considerations for the WPPSI-IV reflect those provided for the WISC-V, including information regarding the standardization sample not including children with uncorrected hearing loss. Additionally, test developers simplified the verbal instructions of the WPPSI-IV compared to previous versions and included an ancillary Nonverbal Index (NVI). Considered a "language reduced" index (Adams Costa, Day, & Raiford, 2015), the NVI includes all subtests that do not require a verbal response. The idea of language reduction may be misleading to inexperienced assessment professionals, given the complexity of nonverbal language and the understanding that ASL is a fluent language. Furthermore, understanding the directions and many of the nonverbal tasks' concepts rely on a child's fund of language-based knowledge.

Nonverbal cognitive ability tests have long been considered first choice assessments for students whose native language is not English. Although they do little to eliminate cultural bias, they are popular assessments in a "language-reduced" format (Ortiz, Piazza, Ocha, & Dynda, 2018; Wood & Dockrell, 2010). Various nonverbal tests of cognitive ability are available, many with instructions for administration in nonverbal formats (i.e., gestures), varying in the constructs measured. Some tests estimate cognitive ability through one matrices-type subtest, whereas others attempt to measure multiple domains of intelligence. The *Universal Nonverbal Intelligence Test* (UNIT; Bracken & McCallum, 1998) contains memory and reasoning indexes within the symbolic and nonsymbolic domains. Unlike on more popular tests of intelligence, research has indicated no items on the UNIT perform differently with children who are DHH through differential item functioning analysis (Maller, 2000); however, the factor structure differs between DHH examinees and those of the standardization sample (Maller & French, 2004). School psychologists must understand these psychometric properties prior to selecting this assessment.

The various versions of the *Leiter International Performance Scale*, now in its Third Edition (Leiter-3; Roid, Miller, Pomplun, & Koch, 2013), have been widely utilized within the research to study the cognitive abilities of children who are DHH. The Leiter-3 includes scales of fluid intelligence, attention, and memory, and test developers indicate that the overall IQ is not significantly impacted by the individual's language skills (Roid et al., 2013). Standardized with individuals who were DHH, the Leiter-3 may be a good choice for school psychologists when assessing for an intellectual disability or to understand the cognitive strengths and weaknesses of a child who is DHH. When considering utilizing the Leiter-3 with DHH students, assessment professionals are encouraged to watch the nonverbal administration training video provided by test developers to fully understand the standardized format for nonverbal administration. Test authors indicated that nonverbal administration must be conducted with individuals who are DHH since standardization with this population occurred in that format (Roid et al., 2013). Khan, Edwards, and Langdon (2005) found the nonverbal cognitive profiles of children who were DHH with a cochlear implant for 12 months were equivalent to hearing children on the Leiter-R, the previous version of this test. Both the hearing and the cochlear implant groups displayed higher nonverbal intelligence than the non-implanted DHH group. These results suggest that cochlear implantation enhances the cognitive development of children who are DHH.

Reesman and colleagues (2014) reviewed the available literature on the current cognitive abilities measures available at the time of their study and provided a "scorecard" for psychologists to reference when selecting tests. Specifically, this scorecard indicates whether test accommodations are addressed and interpretative guidelines provided, and whether independent literature explores the test's functioning with the DHH population. Although their research can be a useful tool for school psychologists working with the assessments reviewed, the constant updating of intelligence tests calls for practitioners who work with DHH children to be aware of current literature.

Additionally, with the advances of technology being utilized in assessment (i.e., tablet administration methods), practitioners should be aware of these alternative assessment measures as potential useful accommodations for some students who are DHH.

Specific Learning Disability

Kindergarten and first grades are pivotal years for reading intervention to minimize reading problems experienced by a child in the third grade (Francis et al., 1996). Rapid development in reading skills occurs at this time, making early identification of reading difficulties crucial in children's early educational experience. Furthermore, Qi and Mitchell (2011) argue that children who are DHH are more likely to be in alternative educational settings where the curriculum varies from the general population. Therefore, these students are at a disadvantage when taking standardized tests that assume certain content is taught at a specific grade level. Given that approximately 8% of children who are DHH are dually diagnosed with a specific learning disability (SLD; Gallaudet Research Institute, 2011), it is critical for school psychologists and other assessment professionals to be abreast of the research regarding identifying SLD in young children who are DHH. If assessment professionals are not aware of the unique educational factors that affect children who are DHH that might influence test performance, they may be more likely to be identified with a learning disability or be referred for intervention services within the schools.

Lumped together, SLD and intellectual disability account for the greatest number of DHH children who present with a co-occurring disability. Identification of SLD within the DHH population requires school psychologists and other clinicians to understand the complexity of the sensory system's impact on learning (Soukup & Feinstein, 2007). Utilizing effective communication strategies, students who are DHH are expected to progress with typical patterns of achievement and growth (Pollack, 1997); however, due to multiple factors related to English language acquisition and multiple disabilities, the overall

academic abilities of DHH individuals remain low compared to that of their hearing peers. Research over the last 50 years has recognized this significant difference in academic achievement (Qi & Mitchell, 2012; Wilbur & Quigley, 1975). The reading comprehension grade-level mean for DHH high school graduates is approximately 4.5 (Holt, 1994; Traxler, 2000), with only 7-10% reading at seventh-grade level or higher. DHH graduates perform on average at fifth to sixth grade level in math knowledge. Kritzer's (2009) research noted that the gap in math is evident in the preschool years, calling for comprehensive and accurate assessment of a student's skills and abilities beginning in the developmental period.

Popular academic achievement tests utilized by school psychologists when determining SLD lack normative representation of the DHH population. Despite this limitation, school psychologists often have no alternative than to compare data from DHH student assessments to the normative data of the hearing population (Caemmerer, Cawthon, & Bond, 2016). Additionally, these tests are limited in their ability to help the school psychologist differentiate if learning difficulties are occurring due to a disability or because of other factors such as language skills, cultural differences, or instruction that did not account for the student's hearing differences. Limited information exists regarding the difference in performance on standardized academic measures between individuals who are DHH and those who are DHH with co-occurring learning disabilities (Caemmerer et al., 2016). Caemmerer and colleagues (2016) conducted one of a limited number of studies comparing the performance of students who were DHH without a specific learning disability to those who were dually identified as DHH and SLD. These researchers, utilizing the popular *Woodcock-Johnson Tests of Achievement III* (Woodcock, McGrew, & Mather, 2001), identified math calculation skills as an area that could help school psychologists distinguish between the two groups. Specifically, students who were DHH with an additional learning disability in any academic area were more likely than those who were DHH without a disability to perform below average on

math calculations. They concluded that math tasks that did not have a significant language component were the least likely to be affected by hearing loss (Caemmerer et al., 2016). While more research is needed in this area, these findings suggest school psychologists could look to math calculation skills to determine if an actual learning disability exists.

Assessment through the response to intervention (RTI) approach for the determination of SLD may potentially be a viable alternative to standardized academic measures for this population (Gilbertson & Ferre, 2008). Gilbertson and Ferre (2008) argue progress monitoring would allow for the development of academic norms for students who are DHH since comparing them to national norms does not account for the impact of reduced hearing on these students' learning processes. The frequent progress monitoring that occurs within the RTI system would allow for more guided interventions for students who are DHH to hopefully close the achievement gap between their hearing peers. Research on the effectiveness of RTI in identifying co-occurring learning disabilities with the DHH population is scarce, and more research needs to be done to support its use as an alternative assessment technique.

Autism Spectrum Disorder (ASD)

Autism spectrum disorder (ASD) is a heterogeneous, neurodevelopmental disorder characterized by deficits in social communication (including impaired nonverbal communication) and restricted or stereotyped behaviors (APA, 2013). Given the disorder's complexity and heterogeneity, evaluations should be conducted by clinicians who have received specialized training and supervision (Wiggins et al., 2015; Zander et al., 2016). Obtaining an ASD diagnosis for a child who is DHH is further complicated by the lack of experienced professionals who work with the deaf population (Dale & Neild, 2020). Finding an assessment professional with experience in both developmental areas may not be feasible in some communities.

Further complicating an already complex process are common factors shared by both ASD and children who are DHH. Some examples include difficulties with components of language, failing to respond to one's name, and some forms of repetitive movements (Szarkowski et al., 2014). Szarkowski and colleagues (2014) recommend that clinicians look to a child's preverbal social skills when making a differential diagnosis. For instance, a child who is DHH and has ASD will display limited eye contact, struggle with joint attention, utilize limited gestures, fail to respond to a social smile, and have under-developed symbolic play skills, all characteristics clinicians would assess in hearing children.

Little research has been conducted with DHH children in the assessment of cognitive, adaptive, and other developmental areas of those who are suspected of comorbid autism spectrum disorder (Burns et al., 2016). In a toddler population, Burns et al. (2016) determined that autism symptom severity, as measured with the BISCUIT (*The Baby and Infant Screen for Children with Autism Traits, Part 1*; Matson et al., 2007) did not differ between the autism group and the autism with comorbid DHH group. Additionally, results indicated that the presence of comorbid DHH did not significantly impact overall developmental functioning in a group of toddlers suspected of autism spectrum disorder. Although the ASD and DHH group's developmental functioning was significantly lower than the DHH only group, this pattern is comparable to the adaptive functioning of hearing children with autism compared to their typical hearing peers. The findings of Burns and colleagues (2016) present important implications for the early identification and assessment of ASD within the DHH population: (1) measures of ASD severity and developmental functioning utilized with hearing children may also be valid with DHH children, and (2) the presence of comorbid hearing loss does not negatively affect developmental functioning of children with ASD. In other words, children with comorbid ASD and DHH display the same pattern of developmental deficits as hearing children with ASD, and hearing status does not affect the

degree of these deficits. Assessment of ASD requires practitioners to have a clear understanding of language development in typically developing children who are DHH. Research suggests that if a child receives early intervention for their hearing loss, the child would attain language skills on a similar course to their hearing peers (Ching, 2015); therefore, atypical development in DHH children who received hearing intervention should alert a practitioner to consider further evaluation of ASD (Szarkowski et al., 2014).

Attention Deficit Hyperactivity Disorder

According to the *Diagnostic and Statistical Manual of Mental Disorders-5* (APA, 2013), attention deficit hyperactivity disorder (ADHD) has a "substantial presentation" during childhood. It occurs in about 4% of children of all cultures. Symptoms of inattention (i.e., has difficulty sustaining attention during class, appears to not listen during conversations, loses items, is easily distracted, etc.) may be the dominate feature of the disorder, or it may present with additional symptoms of hyperactivity or impulsivity (i.e., excessive motor activity, hasty actions, talking excessively, etc.; APA, 2013). Children are typically diagnosed in the elementary school years, but parents may first note increased motor activity during the toddler period. ADHD appears to have a similar prevalence rate (5.4%) within the DHH population (Gallaudet Research Institute, 2011). Researchers argue that many DHH children display symptoms similar to the diagnostic criteria for ADHD solely due to the extra cognitive demands required to evaluate additional sensory stimulation (O'Connell & Casale, 2004; Parasnis, Samar, & Berent, 2003). For example, a DHH child may appear easily distracted because they are attempting to filter out irrelevant background noise or avoid tasks that require sustained mental effort, not due to ADHD, but because they are fatigued from tasks requiring prolonged, effortful communication.

Additionally, the necessity to shift attention more frequently than their hearing peers may be considered an effective strategy to gain environmental information rather than a deficit in attention

(Oberg & Lukomski, 2011). O'Connell and Casale (2004) provide a comprehensive list of behaviors common in the DHH population that may resemble the diagnostic criteria of ADHD. Given this overlap in symptoms, accurate assessment of ADHD for children who are DHH is essential.

Although not normed with individuals who are DHH, the *Test of Variables of Attention* (T.O.V.A; Leark, Dupuy, Greenberg, Corman, & Kindeschi, 1996) is a popular tool for identifying ADHD in children suspected of attention problems regardless of potential comorbid disabilities. School psychologists should understand the perceptual sensitivity of the DHH population when choosing computerized assessments of attention. In an adult sample of individuals who are DHH without comorbid ADHD, Parasnis, Samar, and Berent (2003) found the deaf participants had an anticipatory response two to three times greater than the hearing sample, suggesting increased impulsivity and poorer detection between targets and non-targets. The unique sensory perception of individuals who are DHH results in increased inattention to central visual stimuli (Proksch & Bavelier, 2002), which would impact performance on a computerized measure through impaired detectability of stimuli. Similar commission errors on the T.O.V.A. in children are reported in the literature (Dye & Hauser, 2013). Additionally, DHH children are more distracted by task-irrelevant information in the peripheral field, further supporting findings of impaired focus on central stimuli (Dye & Hauser, 2013). When utilizing computerized tests for the identification of ADHD with DHH students, school psychologists should be aware of these unique performance patterns and interpret the results with caution.

Rating scales are also common assessment techniques when determining an ADHD diagnosis. A comprehensive review of available attention measures and their utility in diagnosing ADHD in the DHH population is beyond this paper; however, literature addressing the validity of these rating scales with young DHH children is scarce. The child version of *The Behavior Rating Inventory of Executive Function* (BRIEF) rating scale is widely utilized by clinicians and school

psychologists in the assessment of ADHD in children. Oberg and Lukomski (2011) found that the parent and teacher versions of the BRIEF were positively correlated in a sample of children who were DHH. Additionally, the BRIEF findings were positively correlated with various individual tests of executive functioning, suggesting the rating scale is a valid assessment tool when evaluating the executive functioning of DHH children. However, this study did not specifically utilize this tool for the identification of ADHD, but provides evidence of its potential utility with the DHH population.

Emotional and Behavioral Disorders

Approximately 3.8% of DHH students receive school-based psychological services nationwide (Gallaudet Research Institute, 2011). According to the American Psychological Association, the Affordable Care Act provided funding to allow for schools to expand their mental health services and provide counseling for depression, anxiety, trauma, and other emotional and behavioral problems commonly seen in school-aged children (Smith, 2013), providing the potential for more children to receive services at school. These psychological services are often included in the IEP of a child with an identified emotional disability, which occurs in 1.8% of the school-aged DHH population (Gallaudet Research Institute, 2011). Appropriate identification of children who are DHH with emotional and behavioral problems is essential for determining if a co-occurring disability can be added to an IEP, or if the child would simply benefit from additional psychological services to improve his or her quality of life.

Assessing for a co-occurring emotional disorder requires that the school psychologist first understand the impact of communication on the social-emotional well-being of DHH children. Children who are DHH are at greater risk for social and emotional problems due to the greater risk of disruption in these children's interaction with their environment (Landsberger, Diaz, Spring, Sheward, & Sculley, 2014). Research suggests a child who is DHH will experience impaired communication among the systems that support the child's

development (parents, schools, culture), thus creating greater emotional turmoil. These communication problems lead to social difficulties, and children are more prone to depression and feeling socially isolated (Theunissen, 2014). Furthermore, children with poorer communication with their parents display significantly more emotional and behavioral problems compared to their similar-age peers (van Eldik, Treffers, Veerman, & Verhulst, 2004), and they are at-risk for developing depression as an adult (Sheppard & Badger, 2010). Children who are DHH report more depressive symptomology than their hearing peers, and level of social support predicts depressive symptomology in individuals who have a hearing loss (Theunissen et al., 2011).

Assessment for a co-occurring emotional disability often utilizes objective behavioral rating scales. School psychologists must be aware of the normative sample of the rating scale that has been selected. Several popular behavioral rating scales have included children who are DHH within the standardization samples, and some provide separate clinical norms for comparison to the population. Specifically, the *Behavior Assessment System for Children* (BASC) (currently in the Third Edition; Reynolds & Kamphaus, 2015) is a popular set of rating scales utilized in schools to help professionals identify emotional and behavioral disorders in young children. With parent, teacher, and self-report forms, as well as other observation and interview forms available, the BASC can be a comprehensive aide in helping schools identify children with an emotional disability. The second and third editions, utilized frequently in practice and research, include a "Clinical Group" for "Hearing Impairment." These clinical groups offer a subset of normative data and profiles for comparison. For example, a school psychologist who obtained a BASC-3 Parent Rating Scale on a child who is DHH and suspected of a co-occurring emotional disability can input the student's score and compare them to the typical pattern of behavioral functioning exhibited in the DHH normative sample. However, this practice might not be suitable for all students who are DHH, given the heterogeneity of

the population (Wood & Dockrell, 2010). Clinicians should be well informed about the test's psychometric properties and the individual characteristics of the student before making assessment decisions.

The *Achenbach System of Empirically Based Assessment* is another common evaluation tool more often seen in a clinical setting. The *Child Behavior Checklist* (parent version; Achenbach, 1991) and the *Teacher's Report Form* displayed good inter-rater reliability in a sample of DHH adolescents (van Gent, Goedhart, Hindley, & Treffers, 2007). Within this sample, psychiatrists diagnosed 46% of adolescents with DSM-classifications, suggesting a high prevalence of emotional and behavioral disorders in the population. Findings suggest the Achenbach scales are useful tools in identifying psychopathology in adolescents who are DHH.

Conclusion

The multiple facets and complexity of deafness combined with other disabilities pose significant challenges for the individual and those responsible for meeting the educational needs of DHH students (Clark, 2019). This article provided a summary of the research discussing assessments within co-occurring disorders (intellectual disability, specific learning disability, autism spectrum disorder, attention deficit hyperactivity disorder, and emotional and behavioral disorders) in young children in hopes of providing a better understanding of the needs of DHH children as they relate to the assessments. It is evident within each area: more research and focus needs to be placed on the challenges of assessing DHH children during the early childhood years (Graham & Shuler-Krause, 2019). To have a better understanding and more accurate diagnostic profile of DHH children with co-occurring disabilities, assessments should be conducted across all domains by professionals with a wide range of assessment knowledge related to the modifications, accommodations, and possible evaluations for this population (Clark, 2011).

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