Chapter 62
Intervention Services for a Child With Multiple Disabilities

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EXECUTIVE SUMMARY

This chapter will focus on providing intervention services for an eight-year-old African-American female, Dawn, with multiple disabilities. Dawn has been diagnosed with Down syndrome, a comorbid diagnosis of an intellectual disability, and exhibits behavior problems at home and school. In this scenario, she has been evaluated within the school system to determine eligibility for services, and the speech-language pathologist needs to develop intervention goals and select therapy strategies to provide appropriate services. While both parents are involved in the child's care, the family does not have permanent housing and moves frequently. Information from actual cases has been incorporated into this chapter.

INTRODUCTION

Down Syndrome

Down syndrome (DS) is a chromosomal genetic disorder that occurs in an estimated 1 in 700-750 live births in the United States (Parker et al., 2010). Trisomy 21 is the most common form of Down syndrome, accounting for 95% of cases. It occurs when there is a complete reduplication of Chromosome 21, resulting in three copies of the chromosome instead of two. DS is a commonly identified cause of intellectual disability (Sherman, Allen, Bean, & Freeman, 2007), and individuals with Down syndrome can demonstrate difficulty with phonological memory, attention, and weaknesses in communication.

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Speech and Language Characteristics of Children with DS

A specific behavioral phenotype characterizes the communication ability of individuals with DS, in particular, deficits in expressive language ability (Abbeduto, Brady, & Kover, 2007; Chapman, 2006; Roberts et al., 2007; Roberts, Price, & Malkin, 2007). Studies of individuals with Down syndrome have found greater deficits in receptive syntax than in receptive vocabulary (Abbeduto et al., 2003; Loveall, Channell, Phillips, Abbeduto, & Conners, 2016). Cuskelly, Povey, and Jobling (2016) examined the receptive vocabulary ability of individuals with Down syndrome, ranging in age from age 2;7 to 29;7, on the Peabody Picture Vocabulary Test- Revised (PPVT-R; Dunn & Dunn, 1981) or the Peabody Picture Vocabulary Test- Third Edition (PPVT-III; Dunn & Dunn, 1997). Nonverbal cognitive ability, measured by the Pattern Analysis subtest of the Stanford–Binet Intelligence Scale: Fourth Edition (Thorndike, Hagan, & Sattler, 1986), was related to receptive vocabulary; however, surprisingly, maternal education was not associated with performance. Receptive vocabulary continues to increase for individuals with Down syndrome until approximately 20 years of age, although the rate of increase is slower for individuals with Down syndrome than their typically developing peers (Cuskelly et al., 2016).

Findings regarding expressive language ability have been consistent. Berglund, Eriksson, and Johansson (2001) found that more than half of the children with DS did not have a spoken vocabulary of two words until two-years of age, and a majority did not have a spoken vocabulary of 50 words until four-years of age. Studies report difficulties in expressive morphology and syntax relative to expectations for chronological age and cognitive ability (Chapman, Hesketh, & Kistler, 2002; Chapman, 2006; Fowler, Gelman, & Gleitman, 1994; Miller, 1999). Individuals with Down syndrome are delayed in expressive syntax when compared to other populations with intellectual disabilities such as Fragile X syndrome (Abbeduto et al., 2001; Bellugi, Lichtenberger, Jones, Lai, & St. George, 2000; Ring & Clahsen, 2005; Vicari, Caselli, Gagliardi, Tonucci, & Volterra, 2002), and unknown etiologies (Chapman, 2006). In conversational samples, participants with Down syndrome achieved lower scores on the total score and each of the subscales of the Index of Productive Syntax (IPSYN; Scarborough, 1990) than typically developing (TD) children and males with Fragile X syndrome (FXS) matched for nonverbal cognitive ability.

Similar to receptive vocabulary, studies indicate that children with DS continue to develop expressive language skills throughout adolescence, albeit at a slow pace. In a longitudinal study, 84% of participants with DS showed a positive growth trajectory over six years as measured by mean length of utterance in morphemes (MLUm) in narrative samples (Chapman et al., 2002). Adolescents with DS and TD children matched for MLUm produced narrative samples that were similar in the number of different types of complex sentences as well as the percentage of complex utterances (Thordardottir, Chapman, & Wagner, 2002).

Individuals with DS demonstrate significant delays in speech sound development and production (Dodd & Thompson, 2001; Kent & Vorperian, 2013; Kumin, 2001; Wild, Vorperian, Kent, Bolt, & Austin, 2018). Individuals with DS exhibit delays in the acquisition of speech sounds, particularly consonants, and demonstrate disordered speech production (Kent & Vorperian, 2013). Poor speech intelligibility is a consistent finding in the literature (Kent & Vorperian, 2013; Kumin, 2001; Wild et al., 2018); however, there is some evidence that speech intelligibly may continue to improve over the individual's life span (Wild et al., 2018). The age at which infants use canonical babbling may be delayed but the delay is relatively smaller when compared to the degree of delay in the acquisition of other developmental milestones for gross motor skills (e.g., walking, standing) (Cobo-Lewis, Oller, Lynch, & Levine, 1996; Kent & Vorperian, 2013; Palisano et al., 2001).