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Social Behavior for Individuals with Intellectual Disabilities and Dual Diagnosis: Common Deficits and Assessment Tools

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An intellectual disability describes intellectual and adaptive limitations with deficits across three major domains of adaptive skills including conceptual, social, and practical adaptive skills (American Psychiatric Association, 2013). The *Diagnostic and Statistical Manual of Mental Disorders* (DSM-V; American Psychiatric Association, 2013) further clarifies that for an individual to receive a diagnosis of intellectual disability they must fail to meet developmental and sociocultural standards for personal independence and social responsibility and these deficits in adaptive behaviors limit functioning in daily life (e.g., social participation) in multiple environments (e.g., home, school, and community; American Psychiatric Association, 2013). Although professionals and nonprofessionals commonly associate intellectual disability as primarily a cognitive deficit, it is clear that a major defining characteristic of intellectual disability is deficits in social and adaptive behavior that impede the individuals' functioning and overall quality of life (Griffiths, Condillac, & Legree, 2014; Raymond & Matson, 1989; Sparrow, Cicchetti, & Saulnier, 2016).

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There has yet to be a universally accepted definition of what constitutes social behavior; however, some commonly agreed-upon features include, but are not limited to, engaging with others, learning through observation, learning from contextual cues, engaging in behaviors that increase the likelihood of future interactions with others, and engaging in behavior required to access items or activities that are unattainable alone. Ultimately, there are a myriad of different social skills that individuals potentially use on a daily basis, and many individuals diagnosed with intellectual disabilities have deficits with a few or many of these needed skills. These social skills could include joint attention (Charman & Campbell, 1997; Mundy & Newell, 2007; Paparella & Kasari, 2004; Summers & Impey, 2011; Zampini, Salvi, & D'Odorico, 2015), observational learning (Foti et al., 2015), social communication (Belva, Matson, Sipes, & Bamburg, 2012), perspective taking (Benson, Abbeduto, Short, Nuccio, & Maas, 1993), theory of mind (Abbeduto, Short-Meyerson, Benson, & Dolish, 2004; Jervis & Baker, 2004; Fiasse & Nader-Grosbois, 2012; Thirion-Marissiaux & Nader-Grosbois, 2008; Yirmiya, Erel, Shaked, & Solomonica-Levi, 1998;), and/or emotional regulation (McClure, Halpern, Wolper, & Donahue, 2009).

A well-developed social skills repertoire is critical for individuals diagnosed with intellectual disabilities for multiple reasons. First, many

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social skills are behavioral cusps (Rosales-Ruiz & Baer, 1997) which permit the individual to access new contingencies and environments that, in turn, lead to the development of more social skills. For instance, by acquiring social skills such as observational learning and joint attention, there is higher likelihood for more rapid acquisition of language, problem solving, and independence with certain activities (Kotera, Kiyokawa, Ashikaga, & Ueda, 2011; Mundy, Sigman, & Kasari, 1990; Tomasello & Farrar, 1986).

Second, appropriate social behavior may be critical in forming and maintaining meaningful relationships and friendships (Whitehouse, Chamberlain, & O'Brien, 2001). When individuals do not brush their teeth (Belva et al., 2012), communicate with their friends, show good sportsmanship, or regulate emotions appropriately, it may negatively affect interactions with peers. This may reduce the likelihood of individuals forming relationships (e.g., acquaintances, friendships, romantic relationships) which could impede their overall quality of life (Schalock, 2004; Whitehouse et al., 2001).

Third, increases in social skills may be correlated with improvements in social communication and overall social competence (Gresham & MacMillan, 1997). Deficits in social behavior, like those commonly seen with individuals diagnosed with intellectual disabilities, may inhibit peers from initiating interaction. However, with a well-developed social skills repertoire, peers may be more likely to initiate and respond to initiations from individuals diagnosed with intellectual disabilities. With increased interactions, individuals diagnosed with intellectual disability will have more opportunities to engage in, and practice, appropriate social skills, which may lead to more effective and natural communication with peers.

Fourth, another important reason why social behavior is so critical is the direct benefit that it has on school performance and/or job performance (Ellenkamp, Brouwers, Embregts, Joosen, & van Weeghel, 2016). Researchers have demonstrated that when individuals have appropriate social behaviors and positive social relationships, they are more likely to attend school (e.g., Ashburner et al., 2018). Researchers have also shown that when individuals have positive social relationships with peers, they perform better in school (e.g., Ladd, Birch, & Buhs, 1999). Furthermore, researchers have found correlations between employment and an individual's social life, autonomy, and overall quality of life. That is, when individuals have appropriate social behaviors and positive social relationships, they are more likely to stay employed and do well in their jobs, and vice versa (e.g., Jahoda, Kemp, Riddell, & Banks, 2008).

Fifth, failing to develop appropriate social behavior can result in other long-term undesirable outcomes. These outcomes include, but are not limited to, loneliness (Gilmore & Cuskelly, 2014), depression (Hartley & Birgenheir, 2009), being bullied (Ashburner et al., 2018; Christensen, Fraynt, Neece, & Baker, 2012), incarceration (Hayes, 1994), or even suicide ideation (Ludi et al., 2012). Research has shown these outcomes are more likely for individuals diagnosed with intellectual disabilities compared to typically developing individuals (Austin, Hunter, Gallagher, & Campbell, 2018; Gilmore & Cuskelly, 2014). One potential reason for an increased likelihood for these outcomes with this population is a lack of appropriate social behaviors leading to less friendships.

Finally, and arguably the most substantial reason why it is imperative for individuals diagnosed with intellectual disabilities to develop desired social skills is to improve their quality of life (Schalock, 2004). One of the main outcomes desired by parents for their children, or professionals for their clients, is to live a meaningful and high-quality life. Many individuals diagnosed with intellectual disabilities can have good paying jobs, engage in enjoyable hobbies, maintain reciprocal friendships, and have romantic partners, all of which can lead to a high quality of life (Jahoda et al., 2008). However, without appropriate social behavior, these outcomes are less likely to be achieved.

In order for parents and professionals to effectively develop and employ interventions addressing social skills with individuals diagnosed with intellectual disabilities, they must: (a) know com-

mon deficits displayed by this population; (b) identify social skill assessments; and (c) implement effective, evidence-based procedures. While the range of deficits can vary based on the severity of the deficit, the purpose of this chapter is to outline common social deficits and provide an overview of common standardized assessments which can be used to identify social strengths and deficits for individuals diagnosed with intellectual disabilities.

Common Social Skill Deficits

Joint Attention

Joint attention refers to when individuals "coordinate attention with a social partner in relation to some object or event" (Naber et al., 2008, p. 143). Joint attention is commonly divided into two types: responding to joint attention bids and initiating bids for joint attention (Mundy & Newell, 2007; Summers & Impey, 2011). Responding to joint attention bids is when an individual follows the gaze or point of another person to an event. For example, if a mother was at a zoo and saw a hippopotamus, the mother might say, "Look Alexander, there is a hippopotamus," while looking at the hippopotamus. Then Alexander and the mother both look at the hippopotamus. Initiating bids for joint attention occurs when the individual sees the hippopotamus, gains the attention of another person, and informs the person (e.g., saying, "Look") of what they are seeing.

Joint attention usually develops prior to one year of age with the development of eye gaze to object and stimuli (Mundy, 2018). Joint attention has been identified as an essential skill for appropriate communication development (Tomasello & Farrar, 1986), social development (Mundy & Willoughby, 1998), and cognitive development (Mundy, 2018). Researchers have identified deficits in joint attention for individuals diagnosed with autism spectrum disorder (ASD) and/or intellectual disabilities (e.g., Bruinsma, Koegel, & Koegel, 2004; Naber et al., 2008). For example, Kasari, Freeman, Mundy, and Sigman (1995) found that children with Down syndrome scored worse on shifting their attention between an object and a caregiver than typically developing children.

Summers and Impey (2011) evaluated responding to joint attention bids and initiations of joint attention bids with four individuals diagnosed with Angelman syndrome. The results showed that the individuals were less impaired when responding to joint attention bids than when initiating joint attention bids; however, the joint attention behaviors were displayed less frequently than observed with typically developing children. These results differ from some research on joint attention with individuals diagnosed with Down syndrome, in which participants were more likely to initiate joint attention bids than follow joint attention bids (Landry & Chapieski, 1989). Overall, joint attention is a commonly observed deficit for individuals diagnosed with intellectual disabilities.

Observational Learning

Observational learning involves watching others' actions and the outcomes of those actions, which increases the likelihood that the observer engages/does not engage in similar actions to obtain or avoid similar outcomes in similar situations in the future (Bandura, 1971). Observational learning permits acquiring new behavior without direct intervention (Nadel, 2002). That is, observational learning can lead to the acquisition of more complex skills such as communication (Charlop, Schreibman, & Tyron, 1983), play skills (Collozi, Ward, & Crotty, 2008), and social skills (Wilson, 2013) without direct intervention. In addition, teaching procedures based upon observational learning can be used to teach a variety of skills including first aid skills (Ozkan, 2013), eliminating inappropriate sexual behavior (Dowrick & Ward, 1997), increasing reading skills (Rehfeldt, Latimore, & Stromer, 2003), and changing preference for play items (Leaf et al., 2012).

The development of observational learning and imitative repertoires begins at birth (Nadel, 2002). Esseily, Nadel, and Fagard (2010) noted that, depending on motor movement, observation

learning skills are effective around 12 months while Nadel (2002) described how some neonates (i.e., newborn babies) begin to imitate facial movements of others as early as 35 min old. Additionally, researchers have found that babies at 16 months of age begin imitating the use of tools through observational learning (Somogyi & Esseily, 2014).

Unfortunately, many individuals diagnosed with intellectual disabilities have deficits in observational learning. How these deficits manifest varies with the severity of the intellectual disability. For example, Foti et al. (2015) found that those diagnosed with Prader-Willi syndrome had major deficits in observational learning, compared to typically developing individuals, which interfered with their ability to correctly engage in a sequencing task, but those with Williams syndrome did not have these same deficits. Taylor and DeQuiznio (2012) noted that individuals diagnosed with ASD may have deficits in the prerequisite skills required to learn from observation such as attending, imitation, and discriminating contingencies. DeQuiznio and Taylor (2015) addressed one of these deficits by successfully teaching four children diagnosed with ASD to discriminate contingencies of others and use the information based on those contingencies when acquiring new expressive labels. Biederman, Stepanuik, Davey, Raven, and Ahn (1999) evaluated the observational learning skills of individuals diagnosed with Down syndrome. They found that children with Down syndrome learned through observation only when the video model was substantially slowed down. Therefore, there may be a range of types and level of severity of deficits for observation learning when it comes to individuals diagnosed with an intellectual disability.

Adaptive Behavior and Daily Living

One cluster of behaviors which are strongly related to social behaviors are adaptive (e.g., bathing, toileting, feeding) and daily living skills (e.g., setting the table, doing the dishes, doing the laundry). Although these skills are not inherently social, they do correlate with social behaviors and one's ability to make and sustain meaningful relationships. For instance, if an individual does not maintain appropriate hygiene, this could affect how people respond to the individual. Even if an individual has an established relationship, friendship or romantic, they must maintain a certain level of appropriate hygiene in order to maintain those relationships. Poor hygienic practice could deter others from spending long periods of time together, visiting the individual, interacting with the individual, or inviting them to their home.

Daily living skills, such as grocery shopping, require many skills necessary for a successful trip, such as making a list, finding and retrieving items on the list, and paying. Equally important are social skills that may be necessary when visiting the grocery store. If items are missing, or an individual is having trouble finding a specific item, the individual may need to engage in problem solving skills that require interactions with others. The individual must be able to recognize a problem, find the most appropriate person to ask for help, and ask appropriately. In addition, they must understand social etiquette such as waiting in line to check out, waiting to grab an item, or saying "excuse me" if someone is blocking a desired item.

Researchers have demonstrated that individuals diagnosed with intellectual disabilities have significant deficits in adaptive behavior and daily living skills (Belva & Matson, 2013). Belva and Matson (2013) conducted a comprehensive review of daily living skills as they relate to individuals diagnosed with profound intellectual disabilities. The authors used the Vineland Adaptive Behavior Scales (Sparrow, Cicchetti, & Balla, 2005; Sparrow et al., 2016) to evaluate the daily living skills of the 204 participants. The results showed low scores on many of the behaviors in the daily living skills domain. For example, only 5.39% of participants responded to caring for their hair without being reminded, 4.90% looked after their own health, and only 1.47% initiated telephone calls with others. Researchers have also shown that the acquisition of adaptive behaviors with individuals diagnosed with intel-

lectual disabilities may be slower than typically developing children (van Duijn, Dijkxhoorn, Scholte, & van Berckelaer-Onnes, 2010). Given this gap and the skill deficits that may be present for those diagnosed with an intellectual disability, interventions are needed to develop these skills.

Employment

A survey of individuals who were diagnosed with an intellectual disability between ages 21 and 64 revealed that approximately 34% were employed (Siperstein, Parker, & Drascher, 2013). The range of jobs held by those diagnosed with an intellectual disability varies due to the range of severity levels. There are a range of skills necessary to maintain a job including the skills needed to execute their job, as well as social skills to appropriately interact with fellow employees, potential customers, and clients. Belva and Matson (2013) reported that only 3.92% of participants diagnosed with intellectual disabilities held a full-time job. Additionally, very few participants diagnosed with intellectual disabilities could notify supervisors when they were absent due to an illness or let them know when they would be arriving late. These skills are critical to maintain a full-time job.

Emotional Regulation

Emotional regulation is comprised of a constellation of social behaviors, ranging from recognizing others' emotions in pictures to calming oneself down when angry, upset, or sad. Researchers have shown that individuals diagnosed with an intellectual disability can recognize basic emotions (e.g., happy, sad) but have difficulty with more complex emotions or when a picture displays a neutral face (Moore, 2001; Owen, Browning, & Jones, 2001). Fortunately, individuals diagnosed with intellectual disabilities can learn to receptively and/or expressively label emotions quickly (e.g., Garcia-Villamisar & Dattilo, 2018). For more advanced emotional regulation behaviors, such as using coping strategies when emotionally aroused or irritated, individuals diagnosed with intellectual disabilities commonly display deficits (Benson & Fuchs, 1999).

Theory of Mind

Another imperative social skill is commonly referred to as theory of mind (see Baron-Cohen, 2001 for a review). Theory of mind has been defined as "the ability to reason and infer about another's mental states such as beliefs, desires, intentions…" (Jervis & Baker, 2004 p. 49). Theory of mind begins to develop in children as early as four years of age (Astington, 1993). There are multiple assessments to test for theory of mind, and one of the most commonly used is the false belief test (Baron-Cohen, Leslie, & Frith, 1985). A common example of the false belief test is having a person or character place an object somewhere (e.g., placing a toy under the table) and then leave the room. When the person or character leaves the room, another person or character moves the object (e.g., takes the toy and places under the bed). The examiner would then ask where the first person would look for the object. These types of false belief tests have been highly predictive of measures of theory of mind (Astington, 1993) and can help to distinguish between individuals diagnosed with ASD and those diagnosed with an intellectual disability (Frith & Corcoran, 1996).

In fact, there has been some discussion if theory of mind is a deficit for individuals diagnosed with intellectual disabilities who are not diagnosed with ASD. In one of the more seminal works, Baron-Cohen et al. (1985) showed that individuals diagnosed with intellectual disabilities did not differ from typically developing children in terms of theory of mind, but both groups differed from individuals diagnosed with ASD. As such, researchers have typically treated individuals diagnosed with an intellectual disability as control participants (e.g., Adrien, Rossignol, Barthélémy, Jose, & Sauvage, 1995;

Blijd-Hoogewys, van Geert, Serra, & Minderaa, 2008).

There is not, however, a universal consensus on the deficits in theory of mind for individuals diagnosed with an intellectual disability (Abbeduto et al., 2004; Yirmiya et al., 1998). For example, Charman and Campbell (1997) found that only 39% of individuals diagnosed with and without Down syndrome were able to pass the false belief tasks. Ashcroft, Jervis, and Roberts (1999) found that even fewer (i.e., 13%) adults diagnosed with intellectual disabilities passed theory of mind tasks. These discrepant findings may be due to certain contextual variables. For example, one difference may be due to the age of an individual. Jervis and Baker (2004) compared the performance of 20 adults (28 to 45 years of age) to 20 children (9 to 13 years of age) on theory of mind tasks (i.e., deceptive box test with photographic cue, false-belief task, deceptive box test, and belief-desire reasoning task). The authors found that the children performed significantly better than the adults on these tasks. Another possible variable that may impact responding on theory of mind tasks may have to do with an individual's language capabilities. For example, Abbeduto et al. (2004) showed that individuals with more severe language impairments performed worse on false belief tasks. Therefore, some individuals diagnosed with intellectual disabilities may have deficits in theory of mind while others may not.

Friendship

Perhaps one of the most important outcomes of a well-developed social behavior repertoire is friendships. That is, a failure to develop many of the aforementioned skills can ultimately affect the development of friendships, which is why teaching basic, intermediate, and advanced social behaviors are so important to individuals diagnosed with intellectual disabilities. Although the definition of friendship changes across the life span, there are some universal characteristics of friendships including: (a) an emotional bond between the individuals; (b) mutual interests; (c) mutual enjoyment; (d) opportunities to interact with each other; and (e) that the interactions are reciprocal (Howes, 1983; Sigstad, 2016). Researchers have suggested that the development of friendships is critical for emotional and physical wellbeing (Berndt, 2002). When individuals have friendships, they perform better in school and at work (Hartup & Stevens, 1999), are less lonely (Gilmore & Cuskelly, 2014), and have less risk for depression and/or suicide (Hartley & Birgenheir, 2009).

Unfortunately, researchers have identified that individuals diagnosed with intellectual disabilities have fewer friendships and lower quality friendships compared to typically developing children (Fulford & Cobigo, 2018). For example, Bigby, Webber, Bowers, and McKenzie-Green (2008) evaluated 24 individuals diagnosed with an intellectual disability living in an institution in Australia. Within this study, 50% of the participants reported not having any friendships other than staff members. In a more recent study, Friedman and Rizzolo (2017) surveyed 1341 individuals diagnosed with developmental disabilities. While the results showed that 84% of the responders reported having friendships, the majority (i.e., 56%) indicated they were not satisfied with the number of friends and nearly half (i.e., 47%) were not satisfied with the amount of contact between friends.

Many individuals diagnosed with intellectual disabilities report that staff members are their friends (van Asselt-Goverts, Embregts, & Hendriks, 2015; Pottie & Sumarah, 2004). Bigby et al. (2008) reported that 83% of respondents identified a staff member as a friend. This may be problematic for a variety of reasons. First, there is a high rate of turnover amongst staff in residential placements (Hewitt & Larson, 2007). This high rate of turnover could result in perceived friendships quickly dissolving. Second, a true friendship (see Taubman, Rafuse, Leaf, & Leaf, 2011 for a discussion) must be reciprocal, and

friendships resulting in one party being paid to "hang out" or be a "friend" are not reciprocal. Third, a paid staff member as a friend might prevent the development of new friendships within the community. Finally, and unfortunately, having staff members as "friends" could result in an unbalance of power and might result in the staff member taking advantage of the individual diagnosed with an intellectual disability.

In addition to a less-developed social behavior repertoire, limited opportunities to interact with others may contribute to a lack of friendships within this population (Pottie & Sumarah, 2004). Bigby et al. (2008) showed that the average network size for an individual diagnosed with an intellectual disability was 1.92 (range 0–6 people). Bigby et al. further stated, "Four Residents (16%) had a *non-existent* network, with no contact with either family or friends outside their home…" (Bigby et al., 2008, p. 151). Friedman and Rizzolo (2017) found that 41.7% of the responders indicated that the organization in which the individual resides did not have proper support for enhancing, developing, or maintaining friendships. These limited network sizes could result in limited opportunities to interact with people outside of the home and may contribute to a lack of friendships.

Common Standardized Social Skill Assessments

Assessment is an important part of evaluating current social functioning, determining goals, and tracking ongoing progress. When assessing social skills for individuals diagnosed with intellectual disabilities, it is critical that there is ongoing assessment and evaluation, informal and formal, of their social skills development. Although standardized assessments play an important role in diagnosis, this section will focus on using assessments for intervention planning, determining goals, and assessing progress for individuals diagnosed with intellectual disabilities.

Informal Assessments

Observations One type of informal assessment is observation of an individual in naturally occurring social situations. This could be in a classroom, in the community, at home with family and relatives, or in workplace settings. All of these environments set the occasion for social behavior and opportunities to initiate and respond to social interactions. Assessing social behavior through naturalistic observations allows one to identify social deficits present within commonly encountered environments. This also allows one to record the potential antecedents and consequences that precede and follow wanted and unwanted social behaviors (Gresham, 1981). Observing an individual with an intellectual disability in their relevant environments could also set the occasion to observe typically developing individuals in those same environments to see what common social behaviors are occurring within that environment. This allows one to see what typical social norms and behaviors are present in that environment, the topographies of the social behaviors, the antecedents that set the occasion for the social behavior, and the consequences that maintain the social behavior in that environment. By observing the topography of common social behaviors displayed by typically developing individuals, an interventionist would be able to create a task analysis of what the social behavior should look like and the prerequisite skills necessary to engage in the social skill. Observing the antecedents that set the occasion for a social skill also allows an interventionist to teach the social cues that signal the opportunity to engage in the social skill. Responding to social cues is often a deficit for individuals diagnosed with intellectual disabilities (American Psychiatric Association, 2013). By observing the common social cues present within regularly visited environments, an interventionist would be able to teach the relevant social cues and how one should respond to those social cues in a way that is appropriately consequated by persons present in those environments. Observations in natural

environments also allows one to track progress of the target social behaviors more frequently than some standardized assessments and allows an interventionist to assess what skill deficits may still be present after targeting a specific social skill and adjust programming as necessary.

Interviews Another type of informal assessment is the use of an interview with people that are familiar with the individual diagnosed with an intellectual disability. When using an interview as an assessment technique, there are several factors to consider including (a) who to interview, (b) the qualifications of the person conducting the interview, and (c) the types of questions asked during the interview.

The person being interviewed should have frequent interactions with the individual diagnosed with intellectual disabilities and know them well. This could be an individual's classroom teacher, a parent or caregiver, or paraprofessional aides. The person being interviewed should have frequent interactions with the individual and a good understanding of the person's social skill strengths and deficits. Interviewing someone who does not interact with the individual frequently (e.g., principal of school, aunt or uncle from out of town) may not provide accurate information. This could also be true of people that do interact with the individual frequently. As such, it is recommended to include multiple respondents of the same interview questions to provide a better picture of the individual's social skill deficits across different environments.

It is also important to consider the qualifications of the person conducting the interview, especially if the interview is conducted in-person. Interviewing a caregiver about their child takes clinical sensitivity and clinical judgment (Taylor, LeBlanc, & Nosik, 2018). Questions about an individual's social communication deficits can be a sensitive subject for many caregivers. The person conducting the interview should show compassion and understanding during the interview process while also collecting the relevant information about the individual's social behavior.

The types of questions asked during the interview are also important to consider. Questions should be informed by the goal of the interview. Potential goals of the interview could be to (a) determine new social skill targets, (b) ask about ongoing progress of social skill targets, and (c) decide what intervention should be used to target certain skills. Knowing the goal of the interview helps inform the types of questions to ask during the interview and what follow-up questions are necessary. Once you determine the goal of the interview, one should then plan out the questions that will be asked. Open-ended questions, instead of yes-or-no questions, allows the respondent to provide more information on certain topics, but asking questions that are too broad may not allow for specific-enough answers or provide relevant information. The interviewer must also be cautious to ensure they are not leading the respondent to respond in a particular way when asking clarification questions. Overall, the interview format allows a person to validate what social goals are important to the relevant people in an individual's life and the types of interventions that would be acceptable to implement from people that know the individual best.

Standardized Assessments

Vineland-3 Adaptive Behavior Scales A commonly used standardized assessment with individuals diagnosed with intellectual disabilities is the Vineland-3 Adaptive Behavior Scales (Sparrow et al., 2016). Measuring overall adaptive behavior is useful for getting a complete picture of an individual's social-communicative skill level compared to other same-aged peers (Bielecki & Swender, 2004). Edgar Doll and Sara Sparrow developed the first iteration of the Vineland to evaluate adaptive behavior for individuals diagnosed with intellectual disabilities in 1965 (Sparrow et al., 2016), which contained, and still contains, several unique features. First, the Vineland assessment was one of the first to consider the relationship between mental deficits and social competence. Doll even stated, "No

mental diagnosis is complete if it does not begin with a sound estimate of social competence and end with a prediction of social competence following prognosis or treatment" (Sparrow et al., 2016, p. 11). The early emphasis on social competency and social behavior as part of adaptive functioning makes the Vineland assessment unique compared to other assessments available for individuals diagnosed with an intellectual disability that tend to focus on their intellectual capabilities. The creators of the Vineland also considered adaptive behavior as multifaceted, meaning adaptive behavior is not just about one skill set, but comprised of many. Currently the Vineland-3 assesses several domains including: communication, daily living skills, socialization, motor skills, and maladaptive behavior. Although some domains assessed may not seem necessarily social (e.g., daily living skills), as previously noted, skills within each of these domains impact overall social competence.

The Vineland-3 compares adaptive behavior of an individual to a normative population, and scores from each domain are compared to other individuals of the same age. This allows one to see a comparative score of social-adaptive behavior to other individuals of the same age. The Vineland-3 is scored on a Likert scale from 0–2, and respondents can be a parent/caregiver or a teacher. The Adaptive Behavior Composite score is comprised of three main domains: communication, daily living skills, and socialization. Additional domains on the Vineland-3 that are not included in the Adaptive Behavior Composite score are the motor skills domain and maladaptive behavior domain.

Perhaps the most relevant domain of the Vineland-3 with respect to the purpose of this chapter is the socialization domain. The socialization domain is broken down into three subdomains: interpersonal relationships, play and leisure, and coping skills. The interpersonal relationships subdomain focuses on how an individual responds and relates to others and asks questions about beginning social behavior, emotional development, friendships, conversational skills, interpersonal appropriateness, and caring toward others. The play and leisure subdomain focuses on how an individual engages in play and activities with others. Questions on the play and leisure subdomain include topics such as learning to play skills, responding to social cues, playing games and sports, and socializing with peers. The coping skills subdomain focuses on how well an individual demonstrates behavior and emotional control in different situations with others. Questions within this subdomain pertain to how an individual controls their emotions, is considerate to others, adapts to different situations, and manages social risks.

Although the socialization domain on the Vineland-3 provides the most relevant information about an individual's social behavior, other domains on the Vineland-3 also impact social competency and behavior. The communication domain and daily living skills domain greatly influence an individual's social behavior, and many questions on the Vineland under these domains should be considered when assessing an individual's social behavior. The communication domain involves questions pertaining to an individual's receptive and expressive communication skills and written communication skills. More specifically, many questions about an individual's receptive and expressive communication abilities relate to social behavior. For example, items under the communication domain such as looking at you when they hear your voice, looking when someone calls their name, understanding gestures, responding to the tone of your words, understanding the meaning of facial expressions on others, and understanding what people mean when they are being sarcastic all relate directly to social competency.

Items within the daily living skills domain do not directly relate to how an individual behaves socially, but many impact how others perceive social behavior and, without these skills, would impact an individual's ability to have meaningful social interactions and relationships. Items such as appropriate toileting behavior, wiping or cleaning face when eating something messy, brushing teeth, bathing/showering, washing hair, respecting people's right to privacy, and traveling independently all relate to social receptiveness.

Similar to the daily living skills domain, the maladaptive behavior domain on the Vineland-3 also provides information about challenging behaviors that could greatly impact an individual's social receptiveness. Challenging behaviors such as tantrums, bullying, breaking rules, being aggressive, or destroying other's possessions would all greatly impact an individual's social competency and should be taken into consideration as behaviors to decrease when looking at an individual's overall social behavior.

Ultimately, the Vineland-3 can provide an overall picture of an individual's social competency which can then help with intervention planning and choosing important social skills to address. After scoring a Vineland-3, the comprehensive score report provides intervention guidance divided by domain and content areas which can greatly help with selecting relevant social behavior goals for an individual diagnosed with intellectual disability.

Social Skills Improvement System The social skills improvement system (SSiS) is a multirater standardized assessment of social behaviors that affect teacher–student relationships, parent–child relationships, peer relationships, and academic performance at school (Gresham & Elliott, 2008). The SSiS can be filled out by a parent/caregiver, a teacher, or the individual themselves and uses a Likert scale to rate each item on the assessment. The SSiS is standardized and norm-referenced for preschool children aged 3 to 5 years, elementary school children aged 6 to 12 years, and teenagers aged 13 to 18 years. Using the SSiS as an assessment tool can help determine specific social skill deficits for individuals diagnosed with intellectual disabilities, what social skills are most important to the rater, and help guide intervention planning. The social skills domain on the SSiS includes seven subdomains: communication, cooperation, assertion, responsibility, empathy, engagement, and self-control. The problem behavior domain includes five subdomains: externalizing, bullying, hyperactivity/inattention, internalizing, and autism spectrum disorder. The teacher forms (i.e., to be completed by the teacher) of the SSiS include the academic competence (i.e., reading achievement, math achievement, motivation to learn) domain due to the correlation between social behavior and academic performance.

Although each domain impacts overall social competency, the questions within the social skills domain will heavily influence what social skills should be targeted for intervention, or track ongoing progress of skills already targeted. Questions pertaining to the communication subdomain query how an individual takes turns and makes eye contact during conversations, their voice tone and gestures, and common manners such as saying please and thank you. Questions on the cooperation subdomain determine how an individual shares and helps others, and complies with others' rules and directions. Questions for the assertion subdomain inquire how an individual initiates to others such as asking for information, introducing themselves, and responding to the actions of others. The responsibility subdomain includes questions about how an individual displays regards for the property or work of others and their ability to communicate with adults. The empathy subscale pertains to how an individual shows concern and respect for others' feelings and viewpoints. The engagement subscale includes questions relating to how the individual joins activities already in progress, invites other to join, initiates conversation, and makes friends. The final social skills subscale, self-control, asks questions about responding appropriately during a conflict, and non-conflict situations (e.g., taking turns and compromising).

Overall, the SSiS is a great standardized assessment tool that aides in intervention planning and tracking. The SSiS is also unique in that it has a built-in social validity measure that asks how important (i.e., not important, important, or critical) each social skill is to the person filling out the form. This is especially relevant when it comes to selecting what social skills to target for an individual diagnosed with an intellectual disability. The corresponding *Social Skills Intervention Guide* (Elliott & Gresham, 2008) also provides sample lessons, examples, and activities for how to target the corresponding social skills found in the SSiS assessment.

Social Responsiveness Scale The Social Responsiveness Scale (SRS-2; Constantino & Gruber, 2012) is a social assessment meant for individuals aged 2.5 years through adulthood. It is comprised of 65 questions and uses a Likert scale to answer each question. Although this assessment is typically used to measure social symptoms associated with a diagnosis of ASD, it can also be a useful tool to assess the social responsiveness for individuals diagnosed with an intellectual disability. The SRS-2 should not be used as a diagnostic tool for individuals with an intellectual disability, but can be useful for tracking goal progress and intervention planning. The 65 questions that comprise the SRS-2 create an overall social responsiveness T-score that corresponds to the level of severity or support that individual requires socially. The SRS-2 also provides T-scores for several subdomains including social awareness, social cognition, social communication, social motivation, and restricted interests and repetitive behavior. The corresponding T-scores fall into the categories of within normal limits, mild range, moderate range, and severe range for each subdomain. Each item on the SRS-2 has the respondent rate how true an item is for that individual (i.e., not true, sometimes true, often true, almost always true) based on their behavior from the past six months. Similar to other standardized assessments, the respondent should know the individual in question well to provide accurate ratings on the assessment. Once the assessment is scored, the T-scores can provide information about the social domains that need to be developed further through systematic intervention.

School Social Behavior Scales and Home and Community Social Behavior Scales The School Social Behavior Scales (SSBS-2; Merrell, 2002b) and the Home and Community Social Behavior Scales (HCSBS; Merrell, 2002a) are two social competency assessments developed to be used in two different settings. The SSBS-2 is an assessment meant for individuals in school settings and would be filled out by the student's teacher or school personnel that have frequent interactions with the student. The SSBS-2 was created out of the need for identifying students in classrooms with social deficits. The creators of the SSBS-2 developed the assessment as a screening tool for early identification of students at risk behaviorally, an assessment for classification and determination for special program eligibility, to aide in intervention plans, provide information relevant to conducting a functional behavior assessment, and as a tool for monitoring social behavior change after intervening on specific social behaviors (Crowley & Merrerll, 2003).

The SSBS-2 has two scales, social competence and antisocial behavior, and is intended for students in kindergarten through Grade 12. The social competence scale is further broken down into three subscales. The peer relations subscale focuses on how frequently a student engages in social skills that are necessary to establish positive relationships and gain social acceptance from their peers. The self-management/compliance subscale includes items related to social skills involving self-restraint, cooperation, and compliance with instructions from the teacher and school staff. The final subscale, academic behavior, consists of items relating to a student's engagement and performance on academic tasks. The antisocial behavior scale is further broken down into three subscales: hostile/irritable, antisocial/aggressive, and defiant/disruptive. The hostile/irritable subscale asks questions relating to student behaviors that would be considered annoying and self-centered and are likely to lead to rejection from their peers. The antisocial/aggressive subscale asks questions about how frequently a student violates school rules and harming others. The final antisocial subscale, defiant/disruptive, has items that ask how likely a student is to disrupt ongoing activities at school and place inappropriate demands on peers or teachers.

The Home and Community Social Behavior Scales (HCSBS) is very similar to the SSBS-2 but differs in its intent to assess social behavior of an individual in home and/or community settings instead of within a school setting. The HCSBS is

comprised of two scales, social competence and antisocial behavior. Unlike the SSBS-2, the HCSBS is only comprised of two subscales. The social competence scale consists of the peer relations subscale and the self-management/compliance subscale and the antisocial behavior scale consists of the defiant/disruptive and antisocial/aggressive subscales. The HCSBS can be filled out by a parent, guardian, or supervisor of the individual in question and is meant to be used for individuals aged 5–18 years old.

Each question on the SSBS-2 and HCSBS assessments has the respondent rate each item using a 5-point Likert scale ranging from 1 (never) to 5 (frequently). The rating the respondent provides should be based on observations from the past 3 months. Unlike the SRS-2 or the Vineland-3 (i.e., assessments that can be used through adulthood), this assessment is similar to the SSiS in that it can only be used with individuals diagnosed with an intellectual disability up to the age of 18 years. Although these assessments are limited to use with children and adolescents, they do provide important information for individuals diagnosed with intellectual disabilities within this age range. The antisocial behavior scale provides critical information about behaviors that should be targeted to decrease, and in return the social competence scale provides information about what social skill replacement behavior should be taught as a replacement to antisocial behaviors.

The Social Communication Questionnaire The Social Communication Questionnaire (SCQ; Rutter, Bailey, & Lord, 2003) was originally developed as a screening tool for individuals diagnosed with ASD and corresponded closely to the Autism Diagnostic Interview-Revised (ADI-R). Although the SCQ was originally intended for use with individuals diagnosed with or suspected of a diagnosis of ASD, it has recently been utilized as an assessment tool for adults diagnosed with an intellectual disability (e.g., Brooks & Benson, 2013; Derks et al., 2017; Sappok, Diefenbacher, Gaul, & Bölte, 2015; Sappok, Brooks, Heinrich, McCarthy, & Underwood, 2017). Although the SCQ comes in two forms (i.e., lifetime and current version), when using the SCQ with adults diagnosed with intellectual disabilities, the current version should be used for screening (Sappok et al., 2015). The SCQ is a 40-item assessment that should be filled out by a caregiver that is familiar with the developmental history and the current social/communication behavior of the individual. The SCQ uses a yes/no format for each item on the questionnaire instead of having the respondent rate each item using a Likert scale like many other social assessments (e.g., SSiS, SRS, Vineland-3). The SCQ can be used with individuals of all ages as long as the individual has a mental age of at least 2 years. The lifetime version of this form is strongly associated with diagnosis, but the current version of the SCQ can help aide one in social intervention planning, goal selection, and for tracking progress over time for an individual with an intellectual disability.

Matson Evaluation of Social Skills with Youngsters and Matson Evaluation of Social Skills for Individuals with Severe Retardation The Matson Evaluation of Social Skills with Youngsters (MESSY; Matson, 1988) is a social behavior assessment for children between the ages of 2 and 18 years. The MESSY was initially intended and designed to assess social behavior in typically developing children but has been researched and used with children diagnosed with intellectual disabilities, children with hearing and visual impairments, children diagnosed with anxiety, and children diagnosed with ASD (Matson, Horovitz, Mahan, & Fodstad, 2013). Similar to other social skill assessments for individuals diagnosed with intellectual disabilities, the MESSY is comprised of scales assessing appropriate and inappropriate social behaviors (Matson, 1988). The MESSY has 64 questions and includes a self-rating scale and a parent/teacher rating scale. Each item is scored on a Likert scale ranging from 1 (not at all) to 5 (very much). Items on the MESSY relating to appropriate social behavior include items such as smiling at others, making others laugh, asking to help others, friendly to new people, and working

well on a team. Items relating to inappropriate social behavior include threatening others, being bossy, complaining often, getting upset when they have to wait, and picking on others. Scores on the MESSY range from 64 to 340. A lower total score suggests higher social competency, and higher total score suggests lower social competency and a higher rate of inappropriate social behaviors. Having scales corresponding to appropriate and inappropriate social behavior will help others decide what social behaviors are necessary to target to increase and teach systematically, as well as other aberrant behaviors that should be targeted to decrease and replace with more appropriate social behavior.

Unlike other social behavior assessments, The Matson Evaluation of Social Skills for Individuals with Severe Retardation (MESSIER; Matson, 1995) was specifically designed to measure social behavior strengths and weaknesses for adults diagnosed with intellectual disabilities that fall in the severe-to-profound range. This makes the MESSIER unique compared to other social behavior assessments that may focus on social behaviors too complex for this population. The MESSIER includes 85 items that fall into six behavior categories: positive verbal, positive nonverbal, positive general, negative verbal, negative nonverbal, and negative general. Items on the MESSIER are rated on a Likert scale ranging from 0 (i.e., never) to 3 (i.e., almost always). Items on the MESSIER should be rated by a parent, caregiver, or staff member that has frequent interactions with the individual, knows them well, and has known them for at least 6 months. The MESSIER is also typically conducted in a semi-structured interview format in which an individual trained in the test administration conducts the interview with the parent, caregiver, or staff member that knows the individual well. Examples of items on the MESSIER that are prosocial positive behaviors include (a) turning head in the direction of caregiver, (b) looking at the face of caregiver when spoken to, (c) smiling in response to positive statements, and (d) saying "please" when asking for something (Matson, 1995). Examples of items on the MESSIER that would fall within the negative verbal, nonverbal, and general categories are (a) disturbing others, (b) preferring to be alone, (c) crying at inappropriate times, and (d) avoiding eye contact (Matson, 1995). Similar to the MESSY assessment tool, the MESSIER is also an assessment tool that can provide valuable information for identifying social behavior goals to increase and identifying aberrant behaviors to decrease and replace them with more appropriate social behaviors.

Conclusion

Knowing common deficits of individuals with intellectual disabilities as well appropriate assessments to evaluate social behavior is critical for treatment planning. It can help professionals and parents design intervention programs which can effectively improve important social behaviors. This should result in practitioners implementing interventions which have empirical support and scientific evidence to support their use (e.g., video modeling, behavioral skills training, social skill groups, and the teaching interaction procedure) and avoiding interventions which have weak empirical evidence (e.g., Social Stories™; Leaf et al., 2015), are not evidence based (e.g., Social Thinking®; Leaf et al., 2016), or have the hallmarks of pseudoscience or antiscience (e.g., Social Thinking® or Floortime; Leaf et al., 2016). Doing so will improve the quality of life of individuals diagnosed with intellectual disabilities so they can live meaningful and happy lives (Schalock, 2004).

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