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Introduction

Adaptive behavior is defined as behavior that has been learned and is performed to meet society's expectation across living settings, including the home, school, work, and other community settings (Schalock et al., 2010). Adaptive behavior is indexed on chronological age because as a society, we have different expectations of all members of our community as they age.

Adaptive behavior is a required criterion of all diagnostic systems defining intellectual disability (see American Psychiatric Association, 2000; Schalock et al., 2010; World Health Organization, 1992). The American Association on Intellectual and Developmental Disabilities defined adaptive behavior as the collection of Conceptual, Social, and Practical Skills that have been learned by people to function in their everyday lives (Luckasson et al., 2002; Schalock et al., 2010). The three adaptive behavior skill areas have been defined as follows: (1) conceptual skills consist of communication skills, functional academics, and self-direction; (2) social skills consist of interpersonal skills, social responsibility, following rules, self-esteem, gullibility, naiveté, and avoiding victimization; and (3) practical skills consist of basic personal care skills such as hygiene, domestic skills, health and safety as well as work skills.

The American Association on Intellectual and Developmental Disabilities (AAIDD) is generally considered the leading professional authority in defining "intellectual disability." The AAIDD, first established in 1876, is the oldest interdisciplinary professional association in the field of intellectual and developmental disabilities (Tassé & Grover, 2013). The AAIDD has led the field in establishing the definition and diagnostic criteria for intellectual disability for over a century. Since its first definition of intellectual disability in 1905, AAIDD has revised its definition 10 times to reflect the changes in research and understanding of this condition. The AAIDD definition of intellectual disability has historically been adopted by all federal and state governments as well as the American Psychiatric Association's Diagnostic and Statistical Manual (DSM) in defining intellectual disability. It was not, however, until the 5th edition of its diagnostic manual, that AAIDD required the assessment of adaptive behavior as a criterion for defining intellectual disability (Heber, 1959, 1961).

The American Psychiatric Association has historically adopted the AAIDD definition and diagnostic criteria of mental retardation in its Diagnostic and Statistical Manual of Mental Disorders. The DSM first included adaptive behavior in its diagnostic criteria of intellectual disability in its 2nd edition of the DSM (American Psychiatric Association, 1968). In fact, in the DSM-2, the American Psychiatric Association actually refers the reader to the AAIDD 1961 definition of intellectual disability (see Heber, 1961) for a fuller definition of intellectual

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disability (see p. 14; DSM-2). In fact, the text in the DSM-2 reads “*Mental retardation refers to subnormal general intellectual functioning which originates during the developmental period and is associated with impairment in either learning and social adjustment or maturation, or both*” (p. 14). The DSM-2 defined adaptive behavior using the wording found in Heber (1959), which defined it as maturation, learning, and social adjustment. The 2002 and 2010 editions of the AAIDD Terminology and Classification Manual returned to the psychometrically supported framework of three adaptive behavior domains, including Conceptual, Social and Practical Skills (see Luckasson et al., 2002; Schalock et al., 2010), originally proposed by Heber (1959, 1961). Hence, the definition of intellectual disability and the conceptualization of the adaptive behavior construct has not really changed in the last 50 years.

Relationship Between Intellectual Functioning and Adaptive Functioning

One of the forefathers of intelligence testing used the concept of “adaptation” in his definition of “intelligence” (Binet & Simon, 1905). For a long time and still to this day—the two concepts are sometimes intertwined but increasingly, the larger definition of intelligence is much more focused on mental capabilities and capacity whereas adaptive behavior is much more focused on the actual performance of skills when needed and in response to societal demands and expectations. The definition of intelligence adopted by AAIDD (Schalock et al., 2010) comes from the existing consensus position of prominent intelligence researchers and is defined as follows:

Intelligence is a very general mental capability that, among other things, involves the ability to reason, plan, solve problems, think abstractly, comprehend complex ideas, learn quickly and learn from experience. It is not merely book learning, a narrow academic or test-taking smarts. Rather, it reflects a broader and deeper capability for comprehending our surroundings —‘catching on,’ ‘making sense’ of things, or ‘figuring out’ what to do. (Gottfredson, 1997, p. 13).

There are a number of studies that have examined the changes in adaptive functioning among adults with developmental disabilities after deinstitutionalization (Felce, deKock, Thomas, & Saxby, 1986; Fine, Tangeman, & Woodard, 1990; Silverman, Silver, Sersen, Lubin, & Schwartz, 1986). Consistently, a meaningful positive change in adaptive functioning has been reported after moving from a more institutional living environment to a less restrictive community setting (Lakin, Larson, & Kim, 2011). Charlie Lakin and his colleagues did a review of the research literature that included 23 longitudinal studies published between 1977 and 2010 and reported that all but three studies documented adaptive behavior improvements when individuals moved to less restrictive community-based living arrangements. The increase in adaptive behavior was especially marked in the following skill areas: self-care, domestic skills, and social skills.

As conceptual constructs, intelligence and adaptive behavior are somewhat related but are clearly distinct from one another (Keith, Fehrmann, Harrison, & Pottebaum, 1987; McGrew & Bruininks, 1990). Thus, discrepancies in the measurement of intelligence and adaptive behavior are to be expected. Not everyone with significant limitations in intellectual functioning will have commensurately limited adaptive behavior and conversely, not everyone with significant limitations in adaptive behavior will have comparable significant limitations in intellectual functioning. Due to a wide range of measures for IQ and adaptive functioning, conducting research on children with developmental disabilities and interpreting the results can be challenging. However, some studies have reported a low-to-moderate correlation between the measures (Harrison & Oakland, 2015; Sparrow, Balla, & Cicchetti, 2005). A much small number of studies have (Carpentieri & Morgan, 1996) demonstrated a high correlation, while others have demonstrated that a larger portion of the variance (35%) in adaptive functioning among adults with intellectual disability can be explained by environmental variables other than intellectual ability (21%; Hull & Thompson, 1980). As a way to examine the relationship

between these two constructs, some studies generated tables of values needed for statistical significance between various IQs and adaptive behavior scores. They concluded that a difference of at least 10 or more standard points was needed for a statistical difference between two measures when a 95% confidence level was adopted. They concluded that it is not unreasonable to interpret the IQ-adaptive score discrepancy as indicative of a real underlying difference between cognitive capacity and day-to-day performance. Research findings have tended to document higher correlation between these two constructs in individuals with more severe to profound deficits in intellectual functioning than for those who present with milder impairments in intellectual functioning (Childs, 1982; Sattler, 2002).

Information about changes in IQ and adaptive measures over time and their relationship to each other is useful for diagnosing mental retardation, predicting prognosis, and planning treatments. Many questions, however, remain unanswered. IQ scores appear to be stable over time, yet they might be somewhat different across IQ levels. Changes in adaptive functioning have not been well studied, especially for children with mental retardation. The general consensus in the field appears to be that the IQ and adaptive behavior constructs are distinct constructs but remain constructs that have a modest relationship. Thus, adaptive behavior is a construct that provides valuable information about the person's functioning that is not captured by measures of intellectual functioning.

Assessing Adaptive Behavior

Although the assessment of intellectual functioning has a longer history (e.g., first standardized test was developed in 1905) than the measurement of adaptive behavior, standardized tests of adaptive behavior have progressed significantly since the first such scale was published (Vineland Social Maturity Scale, Doll, 1936). The first version of the Vineland instrument consisted of items organized into six broad domains (self-help: general, dressing, and eating;

self-direction; communication; socialization; motor; and work). Reflective of the times, the 1936 Vineland scale had items measuring the persons use of telephone Doll (1953) defined the construct of social competence as “*the functional ability of the human organism for exercising personal independence and social responsibility*” (see page 10). Doll’s vision of assessing social competence (what would later be called adaptive behavior) remains ingrained in today’s definition of adaptive behavior and associated standardized measures: “Our task was to measure attainment in social competence considered as habitual performance rather than as latent ability or capacity” (see Doll, 1953; page 5). This interpretation is consistent with AAIDD’s current position that the assessment of adaptive behavior focuses on the individual’s typical performance and not maximal ability (see Schalock et al., 2010, 2012). This is a critical distinction with the assessment of intellectual functioning, where we assess best or maximal performance.

According to Tassé et al. (2012), the critical aspects of assessing adaptive behavior for the purpose of diagnosing intellectual disability include:

- assessing the individual’s typical behavior (and not maximal performance);
- assessing the individual’s present adaptive behavior;
- assessing the individual’s adaptive behavior in relation to societal expectations for his age group and culture;
- using standardized adaptive behavior scales that were normed on the general population;
- using a convergence of information (i.e., several informants, informants from different life contexts [home, school, work, play/leisure], over time [childhood, adulthood], multiple modalities and sources [see listed below]);
- using clinical judgment throughout the assessment process.

The American Association on Intellectual and Developmental Disabilities has specified: “*For the purpose of making a diagnosis or ruling out*

ID [intellectual disability], a comprehensive standardized measure of adaptive behavior should be used in making the determination of the individual's current adaptive behavior functioning in relation to the general population, The selected measure should provide robust standard scores across the three domains of adaptive behavior: conceptual, social, and practical adaptive behavior" (Schalock et al., 2010; p. 49). It is possible in some cases that the use of a standardized assessment instrument will not be possible. A standardized adaptive behavior scale is generally completed with the information from a respondent. Multiple adaptive behavior scales can be completed, but generally only one respondent is used to complete the entire scale, per administration procedures.

Standardized Adaptive Behavior Scales

Adaptive behavior scales are used predominantly for two purposes. The first purpose is in assessing the person's adaptive behavior for the purposes of establishing planning goals for intervention and habilitation. The other reason these standardized scales are used to assess a person's adaptive behavior is to determine whether or not there is a presence of significant deficits or not for the purpose of determining if the person meets criteria for a diagnosis of intellectual disability or developmental disability. Some instruments have been developed to attempt to serve both functions while other instruments focus on one aspect. We will briefly describe the following adaptive behavior instruments that are most suitable for use in assessing adaptive behavior for the purpose of determining intellectual disability: (1) *Adaptive Behavior Assessment System—3rd Edition (ABAS-3; Harrison & Oakland, 2015)*, (2) *Vineland Adaptive Behavior Scale—2nd Edition (Vineland-II; Sparrow, Cicchetti, & Balla, 2005)*, (3) *Scales of Independent Behavior—Revised (SIB-R; Bruininks, Woodcock, Weatherman, & Hill, 1996)*, (4) *Adaptive Behavior Diagnostic Scale (ABDS,*

Pearson, Patton, & Mruzek, 2016), and (5) *Diagnostic Adaptive Behavior Scale (Tassé et al., in press)*.

Adaptive Behavior Assessment System—3rd Edition

The *Adaptive Behavior Assessment System, 3rd Edition (ABAS-3; Harrison & Oakland, 2015)* is the third edition of the ABAS, first published in 2000. The ABAS-3 is a comprehensive norm-referenced measure of adaptive behavior that can be used for multiple purposes, including the following: (1) assisting in the diagnosis and classification of intellectual disability, developmental disabilities, learning disabilities, behavioral disorders, and emotional disabilities; (2) identify functional limitations of individuals with conditions such as autism spectrum disorder, attention deficit/hyperactivity disorder, and Alzheimer's disease; (3) document a person's eligibility for special education services, social security administration benefits, and placement for other types of interventions; (4) assist with identifying and measuring progress toward adaptive behavior and daily functioning intervention goals, and (5) use as an outcome measure in program evaluation and treatment studies. The ABAS-3 can be used to assess the adaptive behavior of individuals between the ages of 0 and 89 years. There are 5 distinct questionnaire forms for the ABAS-3:

- **Parent or Primary Caregiver Form (0–5 years old):** can be used to assess adaptive behavior of infants to preschoolers in the home and other community settings. The respondents for this form are generally the child's parents or other primary caregivers.
- **Teacher or Daycare Provider Form (2–5 years old):** can be used to assess adaptive behavior of toddlers and preschoolers in a childcare, preschool, and other similar setting. The respondents for this form are generally the child's teachers, daycare or childcare aides, or other similar childcare or preschool personnel.

- **Parent Form** (5–21 years old): this form is used to assess adaptive behavior of children to adults in the home and other community settings. The respondents for this form are generally the child's parents or other primary caregivers.
- **Teacher Form** (5–21 years old): this form is used to assess adaptive behavior of children to adults in their school settings (K-12). The respondents for this form are generally the child's teachers, aides, and other school personnel.
- **Adult Form** (16–89 years old): this form is used to assess adaptive behavior of adults in the home and across other community settings. The respondents for this form can be any number of individuals, including the person her- or himself, family members, work supervisors, peers, others who are familiar with the individual's everyday functioning. There are separate normative tables for the Adult Form for self-ratings and ratings from third-party respondents.

Although the User's Manual (Harrison & Oakland, 2015) indicated that the administration time is approximately 15–20 min, the more realistically time of administration is probably closer to 30–40 min to complete the Adult Form. The ABAS-3 continues to be the only standardized adaptive behavior scale that provides norms for self-reported adaptive behavior when using the Adult Form.

The ABAS-3 yields standard scores (Mean = 100; standard deviation = 15) for each of the three domains: Conceptual, Social, and Practical, as well as a standard score for General Adaptive Composite, which combines information from all items and provides an overall estimate of the person's adaptive behavior. The ABAS-3 scoring also provides standard scores based on a mean = 10 and standard deviation = 3 across potentially all 11 adaptive skill areas: communication, functional academics, self-direction, leisure, social, community use, home/school living, health and safety, self-care, motor (only on forms for children <6 years old), and work

(ratings are obtained only when assessed person has a part-time or full-time employment). The standard scores for the 11 adaptive skill areas have intervention, treatment, and other similar clinical utility.

Since the ABAS-3 is a very recently published revision, few independent reliability and validity data have yet been published. Harrison and Oakland (2015) reported excellent psychometric properties. The internal consistency of the ABAS-3 GAC ranges from 0.96 to 0.99 and from 0.85 to 0.99 for the adaptive behavior domains (conceptual, social, and practical), yielding lean average standard error of measure (SEM) coefficients for the adaptive behavior domains and GAC.

Vineland Adaptive Behavior Scale—3rd Edition

The *Vineland Adaptive Behavior Scale (3rd edition; Vineland-3; Sparrow, Cicchetti, & Saulnier, 2016)* is the third iteration of what is probably the better-known comprehensive standardized adaptive behavior scales. It was first published as the Vineland Social Maturity Scale (Doll, 1936) and then revised by Sparrow, Balla, and Cicchetti (1984) as the Vineland Adaptive Behavior Scales and again as the Vineland-II (Sparrow, Cicchetti, & Balla, 2005). The Vineland-3 was developed to assess adaptive behavior in individuals from 0 through 90 years old and has two versions: comprehensive and domain level—of each of the Vineland-3 forms: Interview Form, Parent/Caregiver Form, and Teacher Form. The comprehensive-level forms offer a more in-depth evaluation much like the previous Vineland-II version, providing results across: adaptive behavior composite, domains, subdomain, and item level. The domain-level versions provide a briefer set of items across each form and yields standard scores only at the domain level (Daily Living Skills, Communication Skills, and Social Skills), adaptive behavior composite, and item level. The domain-level forms can be used for diagnostic purposes,

whereas the comprehensive-level forms can be used for both diagnostic and intervention planning purposes.

- **Interview Form:** Provides a comprehensive assessment of individual adaptive behavior. The assessor administers the Vineland-3 Interview Form to a parent or caregiver using a semi-structured interview format. This approach gathers more in-depth information with its open-ended questions (with or without probes) and promotes rapport between the interviewer and respondent. According to Sparrow et al. (2016):

- Comprehensive: 0–90 years; 502 items; administration time is approximately 35–40 min.
- Domain Level: 3–90 years; 195 items; administration time is approximately 23–27 min.

- **Parent/Caregiver Rating Form:** The Parent/Caregiver Rating Form contains the same content as the Interview Form, but uses a rating scale format. This alternative approach works when time or access to the respondent is limited. The Parent/Caregiver Rating Form is also a valuable tool for progress monitoring. The Vineland-3 Manual suggests using the Interview Form for an initial assessment and then uses the Parent/Caregiver Rating Form to track progress over time. According to Sparrow et al. (2016):

- Comprehensive: 0–90 years; 502 items; administration time is approximately 20–25 min.
- Domain Level: 3–90 years; 180 items; administration time is approximately 10–15 min.

- **Teacher Form:** Assesses adaptive behavior for students in preschool or school. The Teacher Form uses a questionnaire format completed directly by the child's teacher or daycare provider. The Teacher Form covers content that a teacher would observe in a classroom setting. According to Sparrow et al. (2016):

- Comprehensive: 3–21 years; 333 items; administration time is approximately 15–20 min.
- Domain Level: 3–21 years; 149 items; administration time is approximately 8–10 min.

It should be noted the administration times reported above are the times provided in the Vineland-3 user's manual and appear to be somewhat low-ball estimates of time needed to complete the different scales.

The domain names of the Vineland-3 are Communication Skills (i.e., expressive and reception language skills, and written language), Socialization Skills (interpersonal skills, play and leisure skills, and coping skills), Daily Living Skills (personal care, self-care skills, domestic skills, and work skills), and Motor Skills (is optional and only used for children from 3 to 6 years old). These Vineland-3 domains do not align with the current tripartite model of adaptive behavior (Conceptual, Social, and Practical) used in existing diagnostic systems (e.g., AAIDD, DSM-5). Tassé, Schalock, Balboni, Spreat, and Navas (2016) proposed the following alignment of the Vineland-3 subscales with the existing tripartite model of adaptive behavior: Communication = Conceptual Skills; Socialization = Social Skills; and Daily Living Skills = Practical skills.

The Vineland-3 also has an optional Maladaptive Behavior Domain that assesses the presence and severity of problem behavior and may be used for planning behavioral intervention around these behaviors but is not taken into consideration when computing the person's adaptive behavior level. The Vineland-3 has an extensive and representative normative sample. It has a long-track record of use and strong psychometric properties. The structure of the Vineland-3 provides standard scores with a mean = 100 and standard deviation = 15 for each of the four domains: Motor Skills (<6 years old), Daily Living Skills, Communication Skills, and Socialization Skills. The Vineland-3 continues to be available as a paper–pencil questionnaire administration but can now also be administered electronically using Pearson's Q-Global.

Scales of Independent Behavior—Revised

The *Scales of Independent Behavior—Revised* (SIB-R; Buininks et al., 1996) is a comprehensive standardized adaptive behavior scale that was standardized on a representative sample of individuals from the general population. It was developed for use with individuals from 3 months to 80+ years old and consists of three separate forms: Early Development (3 months–8 years old), Comprehensive Form (3 months–80 years old) and Short Form. The Developmental Form and Short Form are a different subset of 40 items drawn from the full SIB-R instrument. The SIB-R may be administered using the structured interview or a checklist procedure where the respondent completes the questionnaire directly.

The SIB-R full-form contains two sections: adaptive behavior items and problem behavior items. The adaptive behavior contains a total of 259 and yields a total standard scores called Broad Independence and 4 domain scores: Motor Skills, Social Interaction and Communication Skills, Personal Living Skills, and Community Living Skills. The problem behavior section contains 8 distinct challenging behaviors rated for their frequency (0–5) and severity (0–4). The SIB-R requires approximately 60 min to complete and may be completed either as a rating scale directly by the respondent or via an interview between an interviewer and a respondent.

Although the reliability and validity psychometric data for the Comprehensive Form are adequate, the psychometric properties of the Short Form and Developmental Form are questionable (Maccow, 2001).

Adaptive Behavior Diagnostic Scale

The *Adaptive Behavior Diagnostic Scale* (ABDS; Pearson, Patton, & Mruzek, 2016) is a recently released standardized adaptive behavior scale (Pearson, Patton, & Mruzek, 2016). It is a replacement adaptive behavior scale for PRO-ED's Adaptive Behavior Scale—Residential

Community scale that previously only had been normed on adults with intellectual disability. The ABDS is an interview-based scale that assesses the adaptive behavior of individuals between the ages of 2 and 21 years and is normed on a typically developed population. The structure of the scale includes the three prevalent domains, including Conceptual, Social, and Practical Skills. The scale administration is structured according to these three domains and each domain consists of 50 discrete adaptive skills. The results obtained yield standard scores with a mean = 100 and standard deviation = 15 for each of the three domains: Conceptual, Social, and Practical as well as an overall Adaptive Behavior Index.

Having only been recently released, there exists no independent psychometric evaluation of the ABDS. The authors (Pearson et al., 2016) report excellent psychometric properties, including internal consistency coefficients for all domain and overall index standard scores above 0.90. The authors also reported a sensitivity coefficient of 0.85 and specificity coefficient of 0.99.

A review of the scale and its user's manual supports the use of the ABDS for use in obtaining standardized adaptive behavior assessment information for the purpose of making an intellectual disability determination.

Diagnostic Adaptive Behavior Scale

The *Diagnostic Adaptive Behavior Scale* (DABS; Tassé, Schalock, Balboni, Bersani, Borthwick-Duffy, Spreat, Thissen, Widaman, & Zhang, in press) was designed specifically for the purpose of being a standardized assessment instrument to assist with the diagnosis of intellectual disability. The DABS was designed from its earliest conception to assist in the ruling in or ruling out of intellectual disability (formerly mental retardation) by providing a comprehensive assessment of an individual's current adaptive behavior and be most precise and reliable at the cutoff score that is equivalent to 2 standard deviations below the population mean. The DABS was developed based upon the

conceptual framework of the AAIDD 2002 and 2010 definition of adaptive behavior (Luckasson et al., 2002; Schalock et al., 2010) and measures the following three domains: Conceptual, Social, and Practical Skills.

The DABS was standardized on a large national sample of typically developing children and adults between the ages of 4 and 21 years (inclusively). The DABS was developed across a period of approximately 7 years. There are numerous steps involved in the development of such a scale. The interested reader is encouraged to consult the DABS Manual (Tassé et al., in press) for a detailed description of the development and standardization of the DABS. This chapter summarizes only essential elements of the scale's development.

The DABS was specifically developed to tap the three domains (Conceptual, Social, and Practical Skills) of adaptive behavior based on current factor analytic work and was developed to be a relatively shorter and more efficient assessment instrument that focuses solely on the diagnosis of intellectual disability and not on identifying programming/intervention or support needs. The DABS' item pool includes relevant items that relate directly to the concepts of gullibility, vulnerability, and social cognition (that involve social perception, the generation of strategies for resolving social problems, and consequential thinking)—often lacking from existing measures of adaptive behavior. One major innovation of the DABS is that it was developed and its scoring is entirely based on item response theory (IRT).

The DABS consists of a total of 75 items (25 items are administered in each of the three domains) and is administered via face-to-face interview between a professional (i.e., interviewer) and a respondent (e.g., parent, grandparent, caregiver, teacher). The estimated administration time for the DABS Interview varies slightly depending on the interviewer and number of persons being interviewed simultaneously but on average, the DABS administration is approximately 30 min. The scoring of the DABS is done using a computerized scoring system that uses IRT algorithms to analyze the

response patterns and computes a standard score for each of Conceptual, Practical, and Social Skills as well as a Composite Score. The standard scores have a mean of 100 and standard deviation of 15.

At the time of completion of this chapter, the DABS was not yet available commercially. It is expected that the American Association on Intellectual and Developmental Disabilities will be making the DABS available in late 2017.

In Addition to the Use of Standardized Measures

The use of standardized measures of adaptive behavior should not be used in isolation. There are many instances where the use of standardized adaptive behavior scales may be insufficient or impossible. This might be because there are no reliable respondents available to provide comprehensive information on the assessed person's adaptive behavior, the respondents providing the adaptive information can only provide partial information, or the evaluator cannot ensure the proper administration of the instrument per test guidelines. In these instances, alternate sources of adaptive behavior information should be referenced as complementary or alternative sources of the person's adaptive behavior.

The AAIDD (Schalock et al., 2010, 2012) and Olley (2015) recommend using several of the following different sources of adaptive behavior information as part of a comprehensive adaptive behavior assessment:

- medical records.
- school records.
- employment records.
- previous psychological evaluation reports and raw data (adaptive behavior, IQ, achievement, mental health, employment, career counseling, etc.).
- therapy or intervention reports and records (e.g., mental health, habilitation services, employment support, developmental disability services).

- drivers and motor vehicle bureau records.
- information from state or federal offices that might have eligibility information (social security administration, state developmental disabilities department, medicaid).
- in criminal cases: affidavits, declarations, transcripts of testimony or interviews, prison records.
- informal interviews with individuals who know the person and had the opportunity to observe the person in the community, etc.
- interview with the defendant/assessed person.

All types and sources of information should be reviewed and analyzed critically for content, relevance, and accuracy. One should also ascertain the comparison group when determining ability and limitations. “For example, in some special education programs, a ‘C’ grade denotes something very different in achievement level than a ‘C’ grade granted in a regular education classroom” (Schalock et al., 2010; p. 48).

Respondents

Adaptive behavior scales are typically completed via input and observations of the assessed individual’s adaptive behavior and either directly rate items on an adaptive behavior scale or provide this information via an interview with an adaptive behavior assessor who is responsible for the adaptive behavior assessment. Generally, the best respondents are typically adults who know well the assessed individual and have the most knowledge and have had opportunities to observe the assessed individual in his or her everyday functioning across settings (Tassé, 2009). Adaptive behavior respondents are most often selected among the assessed person’s family (e.g., parents or guardians, grandparents, older sibling, aunts/uncles), spouse, and/or roommates. Other individuals who can also provide valuable adaptive behavior information include neighbors, teachers, coworkers, supervisors, coaches, and others who have had multiple opportunities to observe the assessed person functioning in everyday community settings such

as school, work, leisure, community). The interviewer or person responsible for conducting the adaptive behavior assessment also has the responsibility of ensuring that the respondents are able to provide reliable and accurate information. The use of clinical judgement and professional experience with clinical interviews and the assessment of adaptive behavior will guide the evaluator in making these determinations.

There may be situations where there is no respondent available who has knowledge of the assessed individual that is sufficiently comprehensive to be able to complete a standardized adaptive behavior scale. In these instances, the assessor will need to rely more heavily on the use of respondents who provide qualitative information in discrete areas of life (e.g., school or work or neighborhood). In such instances, the use of multiple respondents and sources of adaptive behavior information (see school records, medical history, DMV, etc.) are even more important.

Retrospective Assessment

The diagnosis of intellectual disability implicitly requires two conditions related to the adaptive behavior criterion: (1) adaptive functioning (*i.e.*, Conceptual, Social, Practical Skills) is defined as behavior that is learned and typically performed to *meet society’s expectations/demands* for individuals of his chronological age and cultural group, and (2) the assessment of the individual’s *present adaptive functioning*. These two conditions, however, are often at odds when assessing adaptive behavior in criminal cases where the individual’s “present” adaptive functioning can only be assessed against life in prison (Tassé, 2009). It is in these situations that an expert will need to conduct a retrospective evaluation of the individual’s adaptive functioning to a time period when he lived in the community (*i.e.*, prior to incarceration). Using retrospective assessment has been endorsed by AAIDD (Schalock et al., 2010, 2012).

Again, adaptive behavior is defined as conceptual, social, and practical adaptive behavior that is learned and performed to meet community standards of personal independence and social

responsibility, in comparison with same-age peers and of similar sociocultural background (APA, 2013; Schalock et al., 2010). The assessment of a person's adaptive behavior is done with a combination of standardized adaptive behavior scales, clinical evaluations, and interviews of significant others, and a thorough review of all available records. The historical records can inform the expert's clinical judgment regarding prong 3, but often, a retrospective method of conducting adaptive behavior interviews can provide two valuable sources of information: assessed person's adaptive functioning level prior to incarceration (i.e., while still living in the community) and provide an assessment of the person's adaptive functioning prior to age 18.

Using a retrospective assessment to make a determination of intellectual disability relies heavily upon the informant's memory of the assessed individual's functioning and their ability to accurately recall this information. Sometimes in when a person has been living with their aging parents and not receiving any paid services and supports cases, the retrospective recall is going back 15–20 years. The above-mentioned adaptive behavior scales are the preferred measures to use in assessing adaptive behavior and have all been standardized using contemporary psychometric methods. Although there are a number of authors who have appropriately cautioned users regarding the dangers of breaking standardization and the validity of the obtained ratings from a retrospective adaptive behavior assessment (Stevens & Price, 2006), the author of this chapter agrees with others (Macvaugh & Cunningham, 2009; Olley & Cox, 2008) that with proper precautions and critical considerations experts should be able to use retrospective assessments when making an intellectual disability determination using a retrospective approach.

The AAIDD User's Guide (Schalock et al., 2012) provided some guidelines to follow when conducting a retrospective assessment/diagnosis of intellectual disability:

1. Conduct a thorough social history.
2. Conduct a thorough review of all available records (see above).
3. Assess adaptive behavior:
 - using multiple informants and multiple contexts;
 - recognizing that limitations in present functioning must be considered within the context of community environments typical of the individual's peers and culture;
 - with awareness that many important social behavioral skills, such as gullibility and naiveté, are not measured on current adaptive behavior scales;
 - using an adaptive behavior scale that assesses behaviors that are currently viewed as developmentally and socially relevant;
 - understanding that adaptive behavior and problem behavior are independent constructs and not opposite poles of a continuum; and
 - realizing that adaptive behavior refers to typical and actual functioning and not to capacity or maximum functioning.
4. Recognize that self-ratings have a high risk of error in determining "significant limitations in adaptive behavior." However, consistent with the need for multiple informants or respondents, self-ratings can be used under the following cautions:
 - people with ID are more likely to attempt to look more competent and "normal" than they actually are—which is sometimes incorrectly interpreted as "faking";
 - people with ID typically have a strong acquiescence bias or inclination to say "yes" or try to please the authority figures; and
 - ID is a social status that is closely tied to how a person is perceived by peers, family members, and others in the community.
5. Conduct a longitudinal evaluation of adaptive behavior that involves multiple raters, very specific observations across community environments (especially in regard to social competence), school records, and ratings by peers during the developmental process.
6. Do not use past criminal behavior or verbal behavior to infer level of adaptive behavior or about having ID.

Tassé (2009) proposed the following instructions for the expert conducting the retrospective adaptive behavior interview:

- Identify a clear time period during which you want the informant to focus their report of the individual's adaptive behavior. For example, you might instruct the respondent to recall the assessed individual before he was incarcerated.
- Build rapport with the informant and ask her or him to think about where the assessed person was living at that specified time, what school/grade he was in, where was he working, etc. These points of reference will be important to assist the respondent to recall that time period.
- Periodically, remind the respondent that she or he is assessing the individual's adaptive behavior in that specific time period.

In the end, using retrospective assessment may be the only method available to establish whether the person's adaptive skill deficits were present during the developmental period. It is the responsibility of the clinician to use her or his clinical judgment in reviewing the totality of the available clinical information in reaching a well-founded conclusion regarding the age of onset criterion and the overall determination of intellectual disability.

Deficits of Adaptive Behavior Can Be Explained by Other Factors

It is important to recall one of the AAIDD assumptions regarding the definition of intellectual disability (see Schalock et al., 2010): Adaptive behavior deficits can and do coexist with mental illness and other behavioral disorders. The presence of other mental illnesses or behavior health problems do not dismiss or explain away deficits in adaptive behavior nor do they negate a diagnosis of intellectual disability. The DSM-5 (APA, 2013) is categorical, as it has been in previous iterations of its diagnostic manual, there are NO exclusionary conditions to

a diagnosis of intellectual disability. That means, regardless of the presence of any other coexisting behavioral or mental illness (such as antisocial personality disorder, to mention one), a diagnosis of intellectual disability should be made if the individual meets all three diagnostic prongs of intellectual disability, regardless of etiology or comorbid conditions. Holland and his colleagues (2002) in fact reported that comorbidity of intellectual disability and antisocial behavior or disorder is quite common in the criminal justice population. As it pertains to a diagnosis of "antisocial personality disorder" explaining the deficits of adaptive behavior and precluding a diagnosis of intellectual disability, firstly, they can coexist. Secondly, a diagnosis of intellectual disability originates before the age of 18 years (see AAIDD; Schalock et al., 2010; APA, 2013), but the diagnosis of antisocial personality disorder is not made until after the age of 18 years (DSM-5; APA, 2013). Again, there is no exclusionary criterion between intellectual disability and antisocial personality disorder. They can and do coexist.

People with intellectual disability can acquire a mental illness, substance abuse disorder, or other secondary health conditions. In fact, people with intellectual disability are 3–4 times more vulnerable than people in the general population to presenting with a comorbid mental or behavioral disorder (Cooper, Smiley, Morrison, Williamson, & Allan, 2007; Fletcher et al., 2007; Reiss, 1994; Rojahn & Tassé, 1996). Substance abuse by people with intellectual disability is not as common overall but is more prevalent in adults with intellectual disability intersecting with the criminal justice system (Chapman & Wu, 2012; McGillivray & Moore, 2001). For adults with an intellectual disability and substance abuse problem increases the likelihood of criminal behavior and arrests for criminal activities (Holland et al., 2002). Sadly, many adults with intellectual disability make poor choices and end up using and abusing alcohol and drugs. To use the presence of a substance abuse disorder as a reason to rule out or explain the presence of deficits in adaptive behavior or intellectual disability is clearly tautological. These conditions

can and do cooccur, especially in a forensic population. Generally speaking, when someone stops using alcohol and drugs, they will not be cured of their intellectual disability.

Adaptive Behavior Assessment Is Objective

There is a clear distinction to be made between information that is provided by a subject and subjective information. Yes, adaptive behavior assessment relies on the reporting of observed adaptive behavior, but this is done in a rigorous, standardized, and objective manner. When the respondent is asked about the assessed person's adaptive behavior, they are asked about behaviors that they have directly observed. They are not asked to estimate or imagine whether he could do such and such a behavior. In fact, if they do guess on more than 2 items in one domain, that informant's information will be viewed as less reliable than one that has no guessing. Having a standardized set of items, administered in a systematic fashion and scored in a prescribed manner that then yields results that are compared and converted statistically to a normative scale, yields quite objective results. In fact, standardized adaptive behavior scales yield standardized results that are presented on the same normative metric as IQ scores, where an average score = 100 and the population deviation score = 15 (Harrison & Oakland, 2015; Sparrow, Cicchetti, & Balla, 2005).

Typical Performance not Potential

Adaptive behavior assessment is focused on what a person typically does and the degree to which they perform that behavior independently, which aide or support (Schalock et al., 2010; Tassé, 2009). Adaptive behavior scales provide clear guidance that the person providing information regarding their observation of the person performing a behavior or skill. Hence, the

independent performance of a discrete adaptive behavior captures the person's knowledge or prior learning of the behavior, recognition that the behavior needs to occur (e.g., "finds the bathroom in a public place"), their willingness or motivation to perform said behavior (e.g., "chooses not to say mean or embarrassing things"), the degree of prompting or assistance the individual needs to perform the behavior adaptive (e.g., "performs behavior when needed and without reminders or help").

Adaptive behavior scales measure a complex array of cognitive and behavioral aspects to adaptive functioning. And in so doing is interested in measuring not what does the person know or do they know how to do but rather do they do it. For example, there is an item in the Home-Living Scale on the ABAS-3 that asks "folds clean clothes." The assessed behavior is not "can..." or "does he know how..." but rather [does he] fold clean clothes without prompts or help? This is an important difference in the assessment of adaptive behavior. If a person has learned a behavior and possesses a skill but chooses not to perform that behavior when needed or expected, he or she does not get full credit for that adaptive behavior. For the purposes of assessing adaptive behavior to make a determination of intellectual disability we assess "what does this person typically do." If we were conducting an assessment of adaptive behavior for the purpose of intervention planning, we would likely follow-up our initial assessment with a series of follow-up queries to determine whether the person does not perform the behavior due to a lack of knowledge, skill, or willingness. Of course, it takes the combination of many items where the skill/behavior is lacking to yield a standard score that is significantly subaverage. In contrast to adaptive behavior, the assessment of intellectual functioning seeks to capture the person's fullest potential and capacity. Further illustrating that these are two different and distinct constructs of human functioning and both are necessary to make a determination of intellectual disability (Tassé, Luckasson, & Schalock, 2016).

Measurement Error

In the same way, standardized tests of intellectual functioning yield observed scores that should be interpreted with clinical judgment and consideration for all sources of measurement error, so do the results from adaptive behavior scales. The observed scores should be interpreted within the accepted recommended practice (see Schalock et al., 2010) of 95% confidence interval or plus/minus $2 \times$ the test's standard error of measurement. Unlike with performance on tests of intelligence, current research on adaptive behavior assessment results does not indicate a rise in obtained scores or significant inflation in results due to obsolescence of adaptive behavior test norms. Because of the nature of adaptive behavior assessment, practice effects are a non-issue. Adaptive behavior assessment also seems to be immune to the phenomenon of rising scores over the years following norming of standardized tests, as has been clearly documented with standardized tests of intellectual functioning (i.e., Flynn effect).

Summary

All major diagnostic systems (AAIDD & APA) are in alignment in defining intellectual disability as a developmental disability requiring the presence of significant deficits in both intellectual functioning and adaptive behavior (as expressed in Conceptual, Social, and Practical Skills). A comprehensive evaluation and determination of intellectual disability requires clinical judgment (Schalock & Luckasson, 2014). Although individually administered standardized tests play a critical role in assessing a person's intellectual functioning and adaptive behavior, results from standardized tests must be interpreted using clinical judgment and in conjunction with relevant information from multiple collateral sources.

Adaptive behavior is an essential construct used for the purpose of making a determination of intellectual disability and also plays an important role because of its value as an outcome

indicator for evaluating the effectiveness of intervention programs across the life span. Adaptive behavior is what Henry Leland once referred to as the skills that make one "invisible" in society. The more adaptive skills we learn and perform, the less we stand out. Hence, teaching adaptive skills to persons will equip them to better respond to their community's demands and society-at-large's expectations. Adaptive skills are translatable into better coping skills, consumer skills, social interaction, personal health care, hygiene, cooking and home-living skills, employment, etc. When Schalock and his colleagues (2010) assert the assumption/aspiration: "With appropriate personalized supports over a sustained period, the life functioning of the person with intellectual disability generally will improve" (p. 1), what they are talking about are the person's adaptive behavior. With proper intervention and supports, any person can learn and improve their ability to meet society's expectations. This is important because we can teach anyone with an intellectual disability, no matter their level of ability/disability, new adaptive skills that will contribute to their improved independence/interdependence and resulting quality of life.

References

- American Psychiatric Association. (1968). *Diagnostic and statistical manual of mental disorders* (2nd ed.). Washington, DC: Author.
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th edn., text rev.). Washington, DC: Author.
- American Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.). Arlington, VA: American Psychiatric Publishing.
- Binet, A., & Simon, T. (1905). Méthodes nouvelles pour le diagnostic du niveau intellectuel des anormaux. *L'Année Psychologique*, 11, 191–244.
- Bruininks, R. H., Woodcock, R., Weatherman, R. F., & Hill, B. K. (1996). *Scales of independent behavior—Revised (SIB-R)*. Itasca, IL: Riverside Publishing.
- Carpentieri, S., & Morgan, S. B. (1996). Adaptive and intellectual functioning in autistic and nonautistic retarded children. *Journal of Autism and Developmental Disorders*, 26, 611–620.
- Chapman, S. L. C., & Wu, L. T. (2012). Substance abuse among individuals with intellectual disabilities.

- Research in Developmental Disabilities*, 33(4), 1147–1156.
- Childs, R. E. (1982). A study of the adaptive behavior of retarded children and the resultant effects of this use in the diagnosis of mental retardation. *Education and Training of the Mentally Retarded*, 17, 109–113.
- Cooper, S. A., Smiley, E., Morrison, J., Williamson, A., & Allan, L. (2007). Mental ill-health in adults with intellectual disabilities: prevalence and associated factors. *The British Journal of Psychiatry*, 190(1), 27–35.
- Doll, E. A. (1936). *The Vineland Social Maturity Scale*. Vineland, NJ: Vineland Training School.
- Doll, E. A. (1953). *Measurement of social competence: A manual for the Vineland Social Maturity Scale*. Circle Pines, MN: American Guidance Service Inc.
- Felce, D., de-Kock, U., Thomans, M., & Saxby, H. (1986). Change in adaptive behavior of severely and profoundly mentally handicapped adults in different residential settings. *British Journal of Psychology*, 77, 489–501.
- Fine, M. A., Tangeman, P. J., & Woodard, J. (1990). Changes in adaptive behavior of older adults with mental retardation following deinstitutionalization. *American Journal on Mental Retardation*, 94, 661–668.
- Fletcher, R. J., Loschen, E., Stavrakaki, C., & First, M. (2007). *Diagnostic manual for individuals with intellectual disabilities: A clinical guide for diagnosis of mental disorders in persons with intellectual disability*. Kingston, NY: NADD Press.
- Gottfredson, L. (1997). Mainstream science on intelligence: An editorial with 52 signatories, history, and bibliography. *Intelligence*, 24, 13–23.
- Harrison, P. L., & Oakland, T. (2015). *Adaptive behavior assessment system third edition (ABAS-III): Manual*. San Antonio, TX: Pearson.
- Heber, R. (1959). A manual on terminology and classification in mental retardation: A monograph supplement. *American Journal of Mental Deficiency*, 64, 1–111.
- Heber, R. (1961). *A manual on terminology and classification in mental retardation* (rev ed.). Washington, DC: American Association on Mental Deficiency.
- Holland, A. J., Clare, I. C. H., & Mukhopadhyay, T. (2002). Prevalence of “criminal offending” by men and women with intellectual disability and the characteristics of “offenders”: Implications for research and service development. *Journal of Intellectual Disability Research*, 46, 6–20.
- Hull, J. T., & Thompson, J. C. (1980). Predicting adaptive functioning of mentally retarded persons in community settings. *American Journal of Mental Deficiency*, 85, 253–261.
- Keith, T. Z., Fehrmann, P. G., Harrison, P., & Pottebaum, S. M. (1987). The relationship between adaptive behavior and intelligence: Testing alternative explanations. *Journal of School Psychology*, 25, 31–43.
- Lakin, K. C., Larson, S. A., & Kim, S. (2011). *Behavioral outcomes of deinstitutionalization for people with intellectual and/or developmental disabilities: Third decennial review of US studies, 1977–2010*. Minneapolis, MN: Research and Training Center on Community Living, Institute on Community Integration, University of Minnesota.
- Luckasson, R., Borthwick-Duffy, S., Buntinx, W. H. E., Coulter, D. L., Craig, E. M., Schalock, R. L., et al. (2002). *Mental Retardation: Definition, classification, and systems of supports* (10th ed.). Washington, DC: American Association on Mental Retardation.
- Maccow, G. (2001). Test review of the scales of independent behavior—Revised. In B. S. Plake and J. C. Impara (Eds.), *The fourteenth mental measurements yearbook* [Electronic version]. Available from <http://www.unl.edu/buros>
- McGillivray, J. A., & Moore, M. R. (2001). Substance use by offenders with mild intellectual disability. *Journal of Intellectual and Developmental Disability*, 26(4), 297–310.
- Macvaugh, G. S., & Cunningham, M. D. (2009). Atkins v. Virginia: Implications and recommendations for forensic practice. *Journal of Psychiatry & Law*, 37, 131–187.
- McGrew, K. S., & Bruininks, R. H. (1990). Defining adaptive and maladaptive behavior within a model of personal competence. *School Psychology Review*, 19, 53–73.
- Olley, J. G. (2015). Adaptive behavior instruments. In E. A. Polloway (Ed.), *The death penalty and intellectual disability* (pp. 187–200). Washington, DC: American Association on Intellectual and Developmental Disabilities.
- Olley, J. G. & Cox, A. W. (2008). Adaptive Behavior Assessment System-II. In T. Oakland & P. L. Harrison (Eds.), *Adaptive Behavior Assessment System-II: Clinical use and interpretation* (pp. 381–398). San Diego, CA: Elsevier Inc.
- Pearson, N. A., Patton, J. R., & Mruzek, D. W. (2016). *Adaptive behavior diagnostic scale: Examiner’s manual*. Austin, TX: PRO-ED.
- Reiss, S. (1994). *Handbook of challenging behavior: Mental health aspects of mental retardation*. Columbus, OH: IDS Publishing.
- Rojahn, J., & Tassé, M. J. (1996). Psychopathology in mental retardation. In J. W. Jacobson & J. A. Mulick (Eds.), *Manual of diagnosis and professional practice in mental retardation* (pp. 147–156). Washington, DC: American Psychological Association.
- Sattler, J. M. (2002). *Assessment of children: Behavioral and clinical applications* (4th ed.). California: Jerome M. Sattler, Publisher.
- Schalock, R. L., Borthwick-Duffy, S. A., Bradley, V. J., Buntinx, W. H. E., Coulter, D. L., Craig, E. M., et al. (2010). *Intellectual disability: Diagnosis, classification, and systems of supports* (11th ed.). Washington, DC: American Association on Intellectual and Developmental Disabilities.
- Schalock, R. L., & Luckasson, R. (2014). *Clinical Judgment* (2nd ed.). Washington, DC: American Association on Intellectual and Developmental Disabilities.

- Schalock, R. L., Luckasson, R. A., Bradley, V., Buntinx, W. H. E., Lachapelle, Y., Shogren, K. A., et al. (2012). *Intellectual disability: Definition, classification, and system of supports (11e)—User's Guide*. Washington, DC: American Association on Intellectual and Developmental Disabilities.
- Silverman, W. P., Silver, E. J., Sersen, E. A., Lubin, R. A., & Schwartz, A. A. (1986). Factors related to adaptive behavior changes among profoundly mentally retarded, physically disabled persons. *American journal of mental deficiency*.
- Sparrow, S. S., Balla, D. A., & Cicchetti, D. V. (1984). *Vineland: Vineland adaptive behavior scales*. Circle Pines, MN: American Guidance Service.
- Sparrow, S. S., Cicchetti, D. V., & Balla, D. A. (2005). *Vineland-II: Vineland adaptive behavior scales* (2nd ed.). Minneapolis, MN: Pearson Assessments.
- Sparrow, S. S., Cicchetti, D. V., & Saulnier, C. A. (2016). *Vineland adaptive behavior scales* (3rd ed.). Minneapolis, MN: Pearson Assessments.
- Stevens, K. B., & Price, J. R. (2006). Adaptive behavior, mental retardation, and the death penalty. *Journal of Forensic Psychology Practice*, 6, 1–29.
- Tassé, M. J. (2009). Adaptive behavior assessment and the diagnosis of mental retardation in capital cases. *Applied Neuropsychology*, 16, 114–123.
- Tassé, M. J. & Grover, M. D. (2013). American Association on Intellectual and Developmental Disabilities (pp. 122–125). In F. R. Volkmar (Ed.), *Encyclopedia of autism spectrum disorders*. New York: Springer.
- Tassé, M. J., Luckasson, R., & Schalock, R. L. (2016). The relation between intellectual functioning and adaptive behavior in the diagnosis of intellectual disability. *Intellectual Developmental Disabilities*, 54, 381–390.
- Tassé, M. J., Schalock, R. L., Balboni, G., Bersani, H., Borthwick-Duffy, S. A., Spreat, S., et al. (2012). The construct of adaptive behavior: Its conceptualization, measurement, and use in the field of intellectual disability. *American Journal on Intellectual and Developmental Disabilities*, 117, 291–303.
- Tassé, M. J., Schalock, R. L., Balboni, G., Bersani, H., Borthwick-Duffy, S. A., Spreat, S., Thissen, D. T., Widaman, K. F., & Zhang, D. (in press). *Diagnostic adaptive behavior scale: User's manual*. Washington, DC: American Association on Intellectual and Developmental Disabilities.
- Tassé, M. J., Schalock, R. L., Balboni, G., Spreat, S., & Navas, P. (2016). Validity and reliability of the diagnostic adaptive behavior scale. *Journal of Intellectual Disability Research*, 60, 80–88.
- World Health Organization. (1992). *The international classification of diseases (10th revision; ICD-10)*. Geneva: Author.

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