
Relationships Between Adaptive Behavior and Impairment

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3.1 Relationships Between Adaptive Behavior and Impairment

Adaptive behavior generally refers to one's ability to meet daily living responsibilities and to respond to the needs of others. The American Association on Intellectual and Developmental Disabilities (AAIDD) defines adaptive behavior as “the collection of conceptual, social, and practical skills that have been learned and are performed by people in their everyday lives” (AAIDD, 2010, p. 76). The AAIDD's 2010 definition cited three primary domains of that constitute adaptive behavior: conceptual skills, social skills, and practical skills. The *Diagnostic and Statistical Manual of Mental Disorders (DSM)* emphasizes the importance of these domains in its diagnostic criteria for intellectual disability (intellectual developmental disorder) (American Psychiatric Association (APA), 2013).

3.2 Standards Guiding the Development and Use of Measures of Adaptive Behavior

Four sets of standards guide the development and use of measures of adaptive behavior in reference to impairment: (a) those governing test development and use; (b) those informing diagnoses and classifications; (c) those established by laws and

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related legal policies and practices, including case law; and (d) those guiding ethical behaviors of professionals. Each is reviewed next, with emphasis placed on the second and third.

3.2.1 Standards Governing Test Development and Use

The Standards for Educational and Psychological Testing (American Educational Research Association, American Psychological Association, and National Council on Measurement in Education, 2014; hereafter referred to as the standards) provides the most authoritative industry standards governing ways tests should be developed and used. Assessment practices associated with adaptive behavior and other psychological constructs are addressed in the standards, including test construction, evaluation, and documentation; fairness in testing; and test applications. Some key features from these standards that lay a foundation for sections of this and perhaps other chapters in this book are summarized next.

The standards define a *test* as “a device or procedure in which a sample of an examinee’s behavior in a specified domain is obtained and subsequently evaluated and scored using a standardized process” (American Educational Research Association et al., 2014, p. 2). “Assessment is a broader term than test, commonly referring to a process that integrates test information with information from other sources (e.g., information from other tests, inventories, and interviews; or the individual’s social, educational, environment, health, or psychological history (American Educational Research Association et al., 2014, p. 2).

Test validity constitutes a test’s most important quality (American Educational Research Association et al., 2014). *Validity* refers to the accuracy with which a test measures a construct and how the results may be used appropriately. Validity is judged in light of theory and empirical evidence that support the manner in which test data are interpreted and used. Strictly speaking, a test does not have validity. Validity may be attenuated by various conditions. Two that are most prominent include construct underrepresentation (i.e., when a test fails to measure important aspects of the construct) and construct irrelevance (i.e., when qualities extraneous to the construct attenuate its measurement).

Test *reliability* refers to the consistency of scores. The standards define reliability as “the degree to which test scores for a group of test takers are consistent over repeated applications of a measurement procedure and hence are inferred to be dependable, and consistent for an individual test taker; the degree to which scores are free of random errors of measurement for a given group” (American Educational Research Association et al., 2014, p. 223).

3.2.2 Standards Informing Diagnosis and Classification

Seven international sources are used to define disabilities and disorders. All have implications for the use of scales that assess adaptive behavior and skills. Three sources provide the most authoritative, comprehensive, and widely used systems to

classify mental disorders: the fifth edition of the *DSM (DSM-5)* (APA, 2013); its international edition (APA, 1995); and the *International Classification of Diseases and Related Health Problems, Tenth Edition (ICD-10)* (World Health Organization (WHO), 1992a). The disorders identified by the *ICD-10* generally are consistent with those cited in and are cross-referenced to the *DSM's* international version (APA, 1995). The International Classification of Functioning and Disability (ICIDH-2, formerly International Classification of Impairments, Disabilities, and Handicaps; WHO, 1992b) and its revision, the *International Classification of Functioning, Disability, and Health (ICF)* (World Health Organization, 2001) provide a unified and standard language framework for describing human functioning and disability components of health, including physical and mental health. The Organization for Economic Co-operation and Development (2004) proposed the use of three broader criteria to classify children with disabilities: those with organic difficulties (e.g., hearing impairments or severe cognitive disabilities), those for whom social disadvantage is the origin, and those with learning difficulties whose origins may be organic or social disadvantage (e.g., dyslexia). The diagnostic criteria promulgated by the AAIDD, formerly known as the American Association on Mental Retardation, also has an international influence in reference to one disability category: development disabilities, including intellectual disability.

Information on methods promulgated by the *DSM* and the AAIDD as well as the *ICF* is summarized next, given the prominence of the first two and emerging importance of the last (Table 3.1).

3.3 Diagnostic and Statistical Manual of Mental Disorders

The DSM-5 (APA, 2013) uses the WHO Disability Assessment Schedule, Version 2.0 (WHODAS 2.0) (Kostanjsek, Chatterji, & Rehm, 2010) as a global measure of disability. The use of the WHODAS 2.0 was a major shift from the previous DSM-IV-TR (APA, 2000) that relied on a multiaxial system and the Global Assessment of Functioning (GAF). A GAF score was used to indicate overall level of functioning and reflected one's level of impairment. The GAF was based on the Global Assessment Scale, described by Endicott, Spitzer, Fleiss, and Cohen (1976). Ratings include psychological symptoms as well as occupational and social functioning and exclude impairment due to environmental or physical limitations. The DSM-5 removed the GAF due to "its conceptual lack of clarity (i.e., including symptoms, suicide risk, and disabilities in its descriptors) and questionable psychometrics in routine practice" (APA, 2013, p. 16).

The WHODAS 2.0 is included, for further study, in the DSM-5 Section III: Emerging Models and Measures. The WHODAS is based on the International Classification of Functioning, Disability and Health (ICF) and is used across all of medicine and health care. In addition to the WHODAS 2.0, a modified version created by the Impairment and Disability Study Group of the DSM-5 was developed for children/adolescents. Both the WHODAS 2.0 and modified child/adolescent version were included in the DSM-5 field trial (APA, 2013).

Table 3.1 American Association on Intellectual and Developmental Disabilities adaptive skills and domains

Communication	Speech, language, and listening skills needed for communication, including vocabulary, responding to questions, and conversation skills
Community use	Skills needed for functioning in the community, including use of community resources, shopping skills, and traveling in the community
Functional academics	Basic reading, writing, mathematics, and other academic skills needed for daily, independent functioning, including telling time, measurement, and writing notes or letters
Home/school living	Skills needed for basic care of a home, living setting or school, including cleaning, organizing, maintaining and repairing property, preparing food, and performing chores
Health and safety	Skills needed for the protection of health and to respond to illness and injury, including following safety rules, using medicines, and showing caution
Leisure	Skills needed for engaging in and planning leisure and recreational activities, including playing with others, engaging in recreation at home, and following rules in games
Self-care	Skills needed for personal care including eating, dressing, bathing, toileting, grooming, and hygiene
Self-direction	Skills needed for independence, responsibility, and self-control, including starting and completing tasks, keeping a schedule, following time limits, following directions, and making choices
Social	Skills needed to interact socially and get along with other people, including having friends, showing and recognizing emotions, assisting others, and using manners
Work	Skills needed for successfully holding a job and functioning in a part-time or full-time work setting, including completing work tasks, working with supervisors, and following a work schedule
Motor skills ^a	Basic fine and gross motor skills needed for locomotion and manipulation of the environment as well as for the development of more complex activities, including sitting, pulling up to a standing position, walking, fine motor control, and kicking
Three domains and associated skills	
Conceptual	Includes communication, functional academics, and self-direction
Social	Includes social skills and leisure skills
Practical	Includes self-care, home/school living, community use, health and safety, and work skills

^aAlthough fine and gross motor development is not included as one of the ten skills identified by the American Association on Intellectual and Developmental Disabilities, it is included in some scales of adaptive behavior

The WHODAS 2.0 is a 36-item measure used to assess disability in adults ages 18 years and older. Disability is assessed across six domains using a five-point Likert scale of “none,” “mild,” “moderate,” “severe,” and “extreme or cannot do.” The six domains include understanding and communication, getting around, self-care, getting along with people, life activities—household, life activities—school/work,

and participation in society. The scale is completed by an individual who is asked to rate the level of difficulty he or she has had in a specific area over the past 30 days. If an individual is unable to complete the scale, a knowledgeable informant may act as a proxy using the proxy-administered version. For population norms and interpretation of the WHODAS 2.0, the DSM-5 refers readers to *Measuring Health and Disability: Manual for WHO Disability Assessment Schedule (WHODAS 2.0)* (Kostanjsek et al., 2010). The WHODAS 2.0 can be administered in regular intervals to track changes of an individual's level of disability.

3.4 The American Association on Intellectual and Developmental Disabilities

Adaptive behavior has been linked closely with intellectual disability. Thus, further knowledge of intellectual disability, particularly its diagnosis, informs us of the important role of adaptive behavior for this disorder. The AAIDD and its predecessor, the AAMR, have been the most authoritative voice in reference to issues pertaining to persons with intellectual disability. Its current definition of intellectual disability is: "A disability characterized by significant limitations both in intellectual functioning and in adaptive behavior as expressed in conceptual, social, and practical adaptive skills. This disability originates before age 18" (AAIDD, 2010, p. 6). Five assumptions important to this definition then are discussed.

1. Limitations in present functioning must be considered within the context of community environments typical of the individual's age peers and culture.
2. Valid assessment considers cultural and linguistic diversity as well as differences in communication, sensory, motor, and behavioral factors.
3. Within an individual, limitations often coexist with strengths.
4. An important purpose of describing limitations is to develop a profile of needed supports.
5. Within appropriate personalized supports over a sustained period, the life functioning of the person with ID generally will improve. (AAIDD, 2010, p. 6–7)

Almost all definitions of intellectual disability make reference to significant deficits in intellectual functioning as well as adaptive behavior that occur before age 18. Some definitions provide specific scores (e.g., <75) to demarcate levels that constitute significant deficits (APA, 2013).

3.5 International Classification of Functioning, Disability, and Health

The WHO's *International classification of functioning, disability and health (ICF)* (WHO, 2001) provides a framework for viewing behaviors from three broad and different perspectives: physiologic, physical, and psychological functions; the extent to which persons engage in functional life activities; and their participation in social settings. The *ICF* does not emphasize pathology or lead to a diagnosis. However, the *ICF* can be used as a companion to WHO's *ICD-10* (1992a) when

diagnosing disorders. The *ICD-10* provides a system for classifying and diagnosing health conditions, including diseases, disorders, and injuries based on etiology. In contrast, the *ICF* emphasizes a client's full and accurate description, not diagnosis, based on medical and social models of disability through biological, individual, and social perspectives of health. When a diagnosis is needed to obtain benefits, the *ICD-10* may be used to classify a client's disability. The combined use of the *ICF* and *ICD-10* provides for more comprehensive descriptions and is useful for program planning and intervention services.

The *ICF* places considerable emphasis on identifying functional impairments and thus strongly emphasizes the importance of adaptive behavior. Specifically, its activities and participation components address the execution of a task or action by an individual and his or her involvement in life situations (WHO, 2001). The term *activities* refers to tasks or actions a client is able to perform. Examples for older children and adults include writing, talking, and calculating. The term *participation* refers to activities that become integrated into one's life. Examples for children include regularly taking others to nearby places, talking by telephone with family and friends, and refraining from embarrassing others.

Activities and participation include the following nine domains (with examples of corresponding adaptive skills in parentheses): learning and applying knowledge (e.g., functional academics); general tasks and demands (e.g., work); communication (e.g., communication); mobility (e.g., fine and gross motor skills); self-care (e.g., self-care); domestic life (e.g., school and home living); interpersonal interactions and relationships (e.g., social skills); major life areas (e.g., health and safety, leisure skills); and community, social, and civic life (e.g., community use). The skills in parentheses are those identified by the AAIDD (2010) and *DSM-5* (APA, 2013) as important adaptive skills.

A *skill deficit* occurs when a person does not display a needed behavior. A *performance deficit* occurs when a person has displayed a needed skill yet does not use it when needed. For example, a child who does not have the ability to dress oneself displays a skill deficit. In contrast, a child who has displayed the ability to dress oneself and does not do so regularly is described as having a performance deficit. If deficits in adaptive behavior and skills have been identified and an individual is in need of services, then the *ICF* aids in describing the disability in terms of an interaction between impairment, functioning, and the environment. Strengths or weaknesses may be identified, including the adequacy of one's adaptive skills, in light of environmental needs.

An understanding of a client's health requires knowledge of the dynamic nature among body functions, body structures, activities as well as participation, and environmental factors. Each influences the others. The *ICF* emphasizes the importance of identifying possible conditions that have an impact on activities and performance deficits. An understanding of a client's activities and performance requires knowledge of personal, social, and environmental conditions that may be having an impact on them. For example, a person's adaptive skills may be influenced adversely by his or her body functions (e.g., mental, sensory, and neuromusculoskeletal functions) and structures (e.g., nervous, cardiovascular, and metabolic systems). In addition,

his or her environment may not provide needed opportunities to acquire adaptive skills as well as support and reward their use. Thus, knowledge of a client's adaptive skills in conjunction with body functions, structures, and environment is important for diagnosis and is essential to the design, delivery, and monitoring of services intended to have an instrumental and functional impact on a client's life.

An overlap between the *ICF*'s activities and participation framework and adaptive behavior is clear. Thus, there is considerable agreement among the WHO, AAIDD, and the APA regarding the importance of these skills. The assessment of adaptive behavior is directly applicable to the utilization of the *ICF* and can assist in better understanding, describing, and classifying functioning, disability, and health under this model.

3.5.1 Legal Standards Governing the Use of Measures of Adaptive Behavior

Professionals working in public schools typically rely on federal laws and policies that become translated into state board of education agency rules and policies when diagnosing disorders. Although the *DSM* is known and may be considered by school-based professionals, diagnostic criteria approved by their state boards of education constitute the protocol to be used in public schools.

3.6 Individuals with Disabilities Education Act

The federal government partially funds education and support services for approximately 6.5 million individuals with special education needs (U.S. Department of Education, 2006). The Individuals with Disabilities Education Act (IDEA; U.S. Code Service, 2007) governs the provision of early intervention, special education, and related services by state and local educational agencies for children over age 2 to young adults age 21 (U.S. Code Service, 2007).

Part C of IDEA addresses assistance for infants and toddlers beyond age 2 and authorizes states to develop and maintain early intervention programs for infants and toddlers with disabilities (Apling & Jones, 2005). Eligibility is based on a diagnosis of developmental delay that requires early intervention services. The assessment of adaptive behavior provides data that are helpful in establishing impairment and eligibility for services.

Part B of IDEA addresses assistance for students with disabilities ages 3 through 21 (Apling & Jones, 2005). Eligibility is based on 13 categories of disabilities (U.S. Department of Education, 2006). The assessment of adaptive behavior is needed to determine eligibility for students with developmental and intellectual disabilities. In addition, measures of adaptive behavior are helpful for determining the strengths and weaknesses in daily living skills of any student suspected of having a disability.

IDEA requires local educational agencies to use multiple assessment methods and sources of information when compiling developmental and functional information. These data have three purposes: to assist in determining whether a child has a disability, to inform the content of an educational plan, and to provide baseline data useful for determining later changes (Council for Exceptional Children, 2004). Local educational agencies should emphasize the assessment of functional skills, thereby supporting interventions that can have a direct and functional impact on important practical life skills.

Measures of adaptive behavior provide important information about a child's behavior and functional age-related daily living skills. This information is critical when determining whether a child has intellectual disability or developmental disabilities and can be useful by indicating the presence of other difficulties or disabilities; informing the contents of educational programming; determining progress and current performance of academic, daily living, and work skills; and providing information for reevaluations.

For example, the results of a measure of adaptive behavior may show a weakness in practical daily life skills such as those associated with community use, health and safety, and self-care. Following intervention with the student, including psychoeducation, consultation, modeling, guided practice, and opportunities for independent monitoring, follow-up assessment of adaptive behavior may show improvement toward meeting goals for the performance of these important life skills. School districts are obligated to develop and implement a program to help students receiving special education services to transition from school to work and other postsecondary life activities. Given their focus on functional behaviors, measures of adaptive behavior should be used to assist students, their parents, and educators in identifying life skill strengths and deficits, particularly those associated with practical behaviors (e.g., work skills) and their personal behavior (e.g., communication, functional academic, and social skills). No single measure may be used to determine whether a child is served by the appropriate educational or work program. However, a measure of adaptive behavior may provide the most important information when planning a transition program for students served under IDEA. Results inform the proceedings of transition-planning conferences, indicate particular proficiencies and areas of impairment, and thereby facilitate a successful progression to gainful life activities.

3.7 Social Security Disability and Supplemental Security Income

The federal Social Security Administration administers the Social Security and Supplemental Security Income disability programs for individuals with disabilities who meet medical criteria (Social Security Administration, 2015). The Social Security Administration defines disability in adults as “the inability to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment(s) which can be expected to result in death or which has lasted

or can be expected to last for a continuous period of not less than 12 months.” (Social Security Administration, 2015). A multistep sequential evaluation process determines whether a person who is not working meets criteria to be considered disabled by determining whether the person’s condition is severe and if the person can perform either work they previously performed or other work (Social Security Administration, 2015). Results from measures of adaptive behavior help answer these questions.

An applicant for Social Security disability or Supplemental Security Income must have a medical condition sufficiently severe to interfere with basic work-related activities. Eligibility decisions for Social Security can be based partially on information from measures of adaptive behavior that reveal functional limitations in daily life activities, including impairment in work skills.

For example, an individual with a physical or mental disorder must demonstrate severe functional limitations for at least 12 months to qualify for Supplemental Security Income. Functional limitations are determined, in part, by whether a person displays self-care, maintains one’s physical well-being, and works. Adaptive behavior measures that evaluate self-care, health and safety, and work skills provide needed information to address these questions. Their use is integral to establishing impairment and functional limitations leading to eligibility for services.

Subsequent reevaluations can help establish the stability of an individual’s impairment and disability. Therefore, a comprehensive and valid assessment of adaptive behavior can provide a systematic and scientifically supported method that is respected by the legal system, including courts, to help provide information that has an impact on legal matters in these and other life-altering situations.

3.8 Atkins v. Virginia

The *Atkins v. Virginia* (2002) U.S. Supreme Court ruling prohibits the execution of individuals with intellectual disability (intellectual developmental disorder). The impact of this ruling applies to prisoners currently being adjudicated as well as those who were adjudicated previously and are on death row. Responsibility for establishing standards and methods for evaluating intellectual disability was left to the states. Prominent attorneys and professional organizations have recommended procedures to implement *Atkins* at the state level (American Bar Association, 2006; Bonnie, 2004; Bonnie & Gustafson, 2007; Ellis, 2003). However, many details remain controversial (Duvall & Morris, 2006; Olley, Greenspan, & Switzky, 2006). No nationwide policy exists on these issues. Although all diagnoses can lead to important life-changing events, the decision regarding whether a prisoner is diagnosed with intellectual disability can lead to life-and-death decisions.

The assessment of adaptive behavior figures prominently in the decision regarding whether a prisoner is diagnosed with intellectual disability. The requirement for impairment of adaptive behavior was more pertinent in *Atkins* petitions from the *Hall v. Florida* (2014) ruling. Here the defendant, despite having IQ scores below the cut-off of 70 in Florida had his *Atkins* petition rejected, as there was not enough

evidence to support impairment of adaptive behavior. In *Hall v. Florida* (2014) Justice Kennedy stated, “intellectual disability is a condition, not a number” and noting that all evidence including both intellectual and adaptive behavior needs to be considered.

As noted elsewhere in this chapter, definitions of intellectual disability generally require evidence of adaptive behavior deficits before age 18. If this standard is established by a state, then information on a death row inmate’s adaptive behavior is needed before age 18. This possesses considerable challenges when assessing a person aged 20 or older—especially those aged 50 and older. The examiner must locate and interview others who knew the person while a teenager and rely on records that provide this information. Locating and gaining access to such records and persons are difficult at best and often not possible. Furthermore, some courts are allowing prison guards to provide information about the prisoner’s adaptive behavior and skills displayed in prison. This practice is unsupported and should not occur. Olley and Cox (2008) discussed more fully the use of adaptive behavior measures in adult forensic cases.

3.8.1 Ethical Standards Governing Use of Measures of Adaptive Behavior

Professions and those societies in which they are practiced are linked through an unwritten social contract whose broad principles are clear. A society agrees to establish and fund institutions that enable professions to select and prepare neophytes, define and license a profession’s practice, and fund related research. In turn, professions are expected to serve all members of the society well by addressing critical national issues. The profession’s ethics code communicates the ways the profession will serve society.

Ethics codes often are based on fundamental principles that underscore the profession’s commitment to provide high-quality services to their clients. The American Psychological Association’s 2002 *Ethical Principles of Psychologists and Code of Conduct* (amended 2010) emphasizes the following five principles: beneficence, fidelity and responsibility, integrity, justice, and respect for people’s rights and dignity.

The principle of beneficence underscores the need to strive to provide services that benefit others. Minimally, professionals strive to do no harm. The principles of fidelity and responsibility underscore the importance of establishing relationships based on trust. Professionals uphold professional standards of conduct, clarify their professional roles and obligations, accept appropriate responsibility for their behavior, and seek to manage conflicts of interest that could lead to exploitation or harm. The principle of integrity underscores the importance of promoting accuracy, honesty, and truthfulness in one’s services. Moreover, professionals strive to keep their promises and to avoid unwise or unclear commitments.

The principle of justice underscores the right of all persons to have access to and benefit from professional contributions and to equal quality in the processes, procedures, and services being conducted by them. The principle of respect for people’s

rights and dignity underscores a person's rights to privacy, confidentiality, and self-determination. Professionals are aware of and respect cultural, individual, and role differences, including those based on age, gender, gender identity, race, ethnicity, culture, national origin, religion, sexual orientation, disability, language, and socioeconomic status and consider these factors when working with members of such groups.

The use of measures of adaptive behavior should be guided by these ethical principles. For example, professionals strive to develop relationships with those who complete these measures (i.e., the respondents) based on honesty, accuracy, and trust, thus encouraging respondents to complete the measures honestly, accurately, and in a timely fashion. Professionals discuss possible uses of information obtained from these measures. Their use should result in some benefits derived by those being assessed, their family, or caregivers. After scoring these measures, professionals communicate the results in ways that accurately describe a person's adaptive skills and behaviors, identify limitations in the data, and discuss implications of this information. Professionals recognize that, although the data may be useful when forming diagnoses, their benefit ultimately lies in informing caregivers and others about practical and functional uses of this information. In addition, professionals are aware of, respect, and do not discriminate on the basis of cultural, individual and role differences, age, gender, gender identity, race, ethnicity, culture, national origin, religion, sexual orientation, disability, language, and socioeconomic status. Moreover, they consider these qualities, if needed, when interpreting data.

3.9 Measures of Adaptive Behavior

Thus, as noted, measures of adaptive behavior can be used in various ways. The assessment of adaptive behavior and skills is useful for diagnosis and classification; the clinical assessment of individuals' strengths and weaknesses; treatment planning, implementation, and evaluation; documenting and monitoring progress; and conducting research. Data from measures of adaptive behavior help determine eligibility for special services (e.g., IDEA or Social Security Disability and Income), differentiate diagnoses and classifications, inform treatment planning, and establish baseline data from which to evaluate change. Although adaptive behavior measures have been used principally with individuals who display intellectual disability and developmental delays, they also provide useful information regarding children who display autism spectrum disorder (ASD), emotional and behavioral disorders, and learning disabilities. Three popular norm-referenced measures of adaptive behavior are reviewed next.

3.9.1 Adaptive Behavior Assessment System: Third Edition

The Adaptive Behavior Assessment System—Third Edition (ABAS-3; Harrison & Oakland, 2015) provides an assessment of adaptive behavior and skills for individuals from birth through age 89 (Table 3.2). The standardization sample consists of

4500 individuals who completed 7737 research forms and is representative of 2010 US census data for gender, race/ethnicity, and socioeconomic status (Harrison & Oakland, 2015). The sample is primarily derived from typically developing individuals with a proportion of the sample including individuals with disabilities. Five forms are provided in English and Spanish: Parent/Primary Caregiver Form (for ages 0–5), Teacher/Day Care Provider Form (for ages 2–5), Parent Form (for ages 5–21), Teacher Form (for ages 5–21), and an Adult Form (for ages 16–89). All forms can be administered either using paper forms or online.

The ABAS-3 was developed to reflect current standards of adaptive behavior and subsequently diagnosing conditions that may be impaired (e.g., AAIDD, 2010; APA, 2000, 2013; IDEIA, 2006; WHO, 2001). Consistent with the adaptive behavior model promulgated by the AAIDD and APA, the ABAS-3 provides a three-tier model: 11 skill areas, three domains, and a general adaptive composite. Nine skill area scores combine to produce standard scores in the following domains: conceptual (communication, functional pre-academics/academics, and self-direction skill areas); social (social and leisure skill areas); and practical (self-care, home or school living, community use, and health and safety, skill areas) (Table 3.2). A motor adaptive area is included for those from birth to 5 years old and is not included in any of the three domains, but is included in the adaptive general composite. A general adaptive composite score is derived from the skill area scores.

The ABAS-3 is a psychometrically sound instrument and demonstrates high internal consistency (Harrison & Oakland, 2015). Reliability coefficients for the standardization sample range from .96 to .99 for the general adaptive composite, .85 to .99 for the three adaptive domains, and .72 to .99 for the skill areas. Likewise, reliability coefficients for the mixed clinical sample range are .99 for the general adaptive composite, .96 to .99 for the adaptive domains, and .91 to .98 for the skill areas. Test-retest reliability coefficients conducted between 5 days to 7 weeks (mean = 3 weeks) range from .82 to .89 for the general adaptive composite, whereas form averages range from .76 to .85 for the three domains, and .70 to .80 for the skill areas. Interrater reliability coefficients (e.g., between teachers, daycare providers, and parents) range from .72 to .92 for the general adaptive composite, whereas the form averages range from .77 to .83 for the three domains, and .67 to .87 for the skill areas.

Support for the validity of scores on the ABAS-3 is based on the test's sound theoretical structure and empirical evidence, which support interpretations of scores for their intended purpose. The theoretical structure of the ABAS-3 is derived from the model of adaptive behavior promulgated by the AAIDD (2010) and DSM-5 (2013), legal and professional standards applicable to special education and disability classification, as well as research into diagnosis and classification of individuals with disabilities. "Consistent with this theoretical structure, the ABAS-3 items comprise 10 adaptive skills areas, all of which are expected to be internally consistent and sensitive to age differences. Furthermore, the adaptive skill areas are expected to share common variance, yet also be demonstrably independent of one another" (Harrison & Oakland, 2015). Intercorrelational data support the theoretical structure of the ABAS-3. Intercorrelations among the skill areas are moderate

Table 3.2 Current assessment measures in adaptive behavior

Title and date of publication	Adaptive behavior assessment system— <i>Third edition</i> (2015)	Scales of independent behavior— <i>Revised</i> (1996)	Vineland adaptive behavior scales— <i>Third edition</i> (2016)
Authors	Harrison and Oakland	Bruininks, Woodcock, Weatherman, and Hill	Sparrow, Cicchetti, and Balla
Forms and ages	Parent/Primary Caregiver Form (ages 0–5 years); Teacher/Day Care Provider Form (ages 2–5 years); Parent Form (ages 5–21 years); Teacher Form (ages 5–21 years); and Adult Form (ages 16–89)	Full scale (ages 3 months–80 years); Short Form (ages 3 months–80 years); and Early Development Form (infancy to 6 years of age or to older individuals with developmental ages less than 8 years)	Interview Form—Comprehensive (birth–90+ years); Interview Form—Domain-Level (3–90+ years); Parent/Caregiver Form—Comprehensive (Birth–90+ years); Parent/Caregiver Form—Domain-Level (3–90+ years); and Teacher Rating Form—Comprehensive and Domain-Level (3–21 years)
Behavior domains and skills measured	Domains: general adaptive composite, conceptual, social, practical	Domains: motor; social interaction and communication; personal living; community living; broad independence; internalized maladaptive behavior; social maladaptive behavior; externalized maladaptive behavior; problem behaviors (general)	Domains: adaptive behavior composite; communication; daily living skills; socialization; motor (optional); maladaptive behaviors (optional)
	Skills: communication, functional pre-academics/academics, and self-direction skills; leisure and social skills; community use, home/school living, health and safety, and self-care skills; work and motor (optional)	Skills: gross motor and fine motor; social interaction, language comprehension, and language expression; eating and meal preparation, toileting, dressing, personal self-care, and domestic skills; time and punctuality, money and value, work skills, and home/community orientation; hurtful to self, unusual or repetitive habits, and withdrawal or inattentive behavior; socially offensive and uncooperative, hurtful to others, destructive to property, and disruptive behavior	Skills: receptive, expressive, and written skills; personal, domestic, numeric and community skills; interpersonal relationships, play and leisure, and coping skills; gross and fine motor skills (optional); internalizing and externalizing behaviors and critical items (optional)

and lower than those between skill areas and the general adaptive composite; also, intercorrelations between skill areas and their respective adaptive domains are higher than those between skill areas. Evidence of the ABAS-3's construct validity is provided through confirmatory factor analyses using data from the standardization sample, which confirmed that a one-factor model of adaptive behavior provides the most parsimonious fit, although a three-factor model also provides a close fit to the data (Harrison & Oakland, 2015). The work and motor adaptive skill areas were excluded in the confirmatory factor analyses. The authors note the factor structure is consistent with AAIDD (2010) descriptions of adaptive behavior (Harrison & Oakland, 2015).

Items on which clinicians often rely were selected to ensure the measurement of adaptive skills relevant to clinical and applied practice. Each rating form has a sufficient number of items and an acceptable level of internal consistency to ensure a robust measure of each skill area. Items with strong behavior references were selected for use to ensure the measurement of qualities that could be readily observed. Concurrent validity with the Vineland Adaptive Behavior Scales—Second Edition, Adaptive Behavior Composite range from .77 to .89 (Harrison & Oakland, 2015). Investigations using the ABAS-3 with clinical samples, described in the adaptive behavior research section of this chapter, provide additional support for the validity of the measure.

3.9.2 Scales of Independent Behavior: Revised Edition

The Scales of Independent Behavior—Revised Edition (SIB-R; Bruininks, Woodcock, Weatherman, & Hill, 1996) provides an assessment of adaptive behavior and skills for individuals from 3 months through 80 years (Table 3.2). The norm group of 2182 individuals was reflective of data from the 1990 US census for gender, geographic region, occupational status and level, race/ethnicity, and type of community. A portion of the norm group also was administered Woodcock-Johnson Tests of Cognitive Ability to obtain a concurrent estimate of intellectual functioning. The SIB-R provides three forms: a Short Form, an Early Development Form, and a Full Scale Form. The Short Form serves as a screener for all ages and contains items from the 14 subscales that comprise the Full Scale Form. The Early Development Form is used with children from infancy through age 6 or with older individuals with severe disabilities who function at developmental levels below age 8.

The SIB-R provides adaptive behavior scores on the following clusters based on data from 14 skill areas: motor skills (gross motor skills and fine motor skills); social interaction and communication skills (social interaction, language comprehension, and language expression); personal living skills (eating and meal preparation, toileting, dressing, personal self-care, and domestic skills); and community living skills (time and punctuality, money and value, work skills, and home/community orientation). A broad independence score is derived from all skill area scores.

The Maladaptive Behavior Scale assesses problem behavior in the following three domains and eight problem areas: internalized maladaptive behavior (hurtful to self, unusual or repetitive habits, and withdrawal or inattentive behavior); asocial

maladaptive behavior (socially offensive and uncooperative behaviors); and externalized maladaptive behavior (hurtful to others, destructive to property, and disruptive behavior). A general problem behaviors score is based on scores from the eight problem areas.

The SIB-R displays suitable internal consistency (Bruininks et al., 1996). Median corrected split half reliabilities range from .97 to .98 for the broad score, .84 to .96 for the four clusters, and .70 to .88 for the skill areas. Test-retest reliability coefficients range from .98 to .99 for the broad score, .96 to .99 for the four clusters, and from .83 to .98 for the skill areas. Coefficients for the Short Form, Early Development Form, and Maladaptive Behavior Scale are somewhat lower and generally range from .74 to .92. Interrater reliability coefficients (e.g., between parents or teachers and teacher aides) range from .80 to .96 for the broad score, .74 to .97 for the four clusters, and .58 to .96 for the skill areas.

Support for the content validity of the SIB-R is based on the test's development. The SIB-R subscales assess critical skills identified by various definitions, models, research findings, and theories on adaptive behavior. "The content of the SIB-R includes adaptive behaviors found to predict personal and community independence among elderly people ... and among adults with mental retardation" (Bruininks et al., 1996, p. 186). Correlations between the current and prior Scales of Independent Behavior generally are in the .90s.

Several studies with normal and clinical groups were conducted to assess the validity of the SIB-R. High correlations among SIB-R subscales provide support for the construct validity of the measure. Subscale correlations are higher with the clusters in which they are included than with other clusters. Correlations between the subscales and broad independence scores also are high. Criterion-related validity is demonstrated through correlations between SIB-R adaptive behavior scores and Woodcock-Johnson Revised Broad Cognitive Ability scores. Correlations were low, providing evidence that adaptive behavior and cognitive ability, as measured by these two tests, represent different competencies and patterns of development (Bruininks et al., 1996). A concurrent validity study between the SIB-R Early Development Form and the Vineland Adaptive Behavior Scales' Early Screening Profiles reported correlations ranged from .77 to .90 for the four clusters (Bruininks et al., 1996).

A review of the SIB-R noted various positive features, including easy administration and scoring procedures (Maccow & Zlomke, 2001). Training objectives are provided for each subscale to determine which skills are most impaired and thus need the most improvement. Further, the SIB-R provides information about maladaptive behaviors that may impair independent daily living.

3.9.3 Vineland Adaptive Behavior Scales: Third Edition

The Vineland Adaptive Behavior Scales—Third Edition (Vineland-3; Sparrow, Cicchetti, & Balla, 2016) provides an assessment of adaptive behavior for individuals from birth through age 90+ (Table 3.2). The Vineland-3 was normed on a sample representative of the 2014 US census for geographic region, educational level, race/ethnicity,

and gender. The normative sample for the Interview and Parent/Caregiver forms comprise 2560 individuals aged birth through 90+ years old, whereas the Teacher form sample comprises 1415 students aged 3 through 18 years old.

The manual states for students aged 19 through 21 the norms for 18 year olds should be used. The Vineland-3 has six forms. The Interview Form-Comprehensive and Parent/Caregiver-Comprehensive age ranges from birth to 90+ years old. The Interview Form-Domain-Level and Parent/Caregiver Form-Domain-Level ranges from 3 years old to 90+ years old, whereas the Teacher-Comprehensive and Domain-Level Forms range from 3 years to 21 years old. Trained professionals use a semi-structured interview format to administer the Interview Forms. The Comprehensive Forms comprise 246 to 381 core items with an additional 87 to 121 optional items for the motor skills and maladaptive behavior domains. The Domain-Level Forms are shorter and are based on 96 to 135 core items and 53 to 60 optional items. Forms can be administered either through paper-and-pencil administration or online administration.

The Vineland-3 provides scores in various domains. Domains (with subdomains in parentheses) include: communication (receptive, expressive, and written); daily living skills (personal, domestic/numeric, and community/school community); socialization (interpersonal relationships, play and leisure, and coping skills); motor skills (gross and fine motor); and maladaptive behavior (internalizing, externalizing, and critical items) (Table 3.2). Scores from the communication, daily living skills, and socialization domains are used to comprise an adaptive behavior composite score. The motor skills and maladaptive behavior domains are optional and not included in the composite score.

The Vineland-3 generally demonstrates suitable internal consistency. Test-retest reliability coefficients using an interval of 12 to 35 days range from .78 to .92 for the adaptive behavior composite, .62 to .94 for the five domains, and .60 to .93 for the subdomains (Sparrow et al., 2016). Interviewer and interrater reliability coefficients range from .58 to .93 for the adaptive behavior composite, .46 to .93 for the five domains, and .22 to .94 for the subdomains.

Empirical and theoretical evidence for the validity of the Vineland-3 is based on the test's content, response process, test structure, clinical groups, and relationships with other measures (Sparrow et al., 2016). The theoretical structure, which includes adaptive behaviors and skills in three domains, is based on models promulgated by the AAIDD and APA (DSM-5; APA, 2013). An investigation of item-scale functioning provides supportive evidence for content validity. Additionally, the hierarchical structure of adaptive behavior was investigated through intercorrelations between subdomains and hierarchical factor analysis (Sparrow et al., 2016). Subdomain correlations within a domain tend to be larger than those between domains.

Further evidence of the measure's validity is derived from investigations with clinical groups. The Vineland-3 showed meaningful patterns of deficits in groups of individuals with diagnoses including: developmental delay, intellectual disability, ASD, visual impairment, and hearing impairment. Evidence for validity also is provided through correlations between the Vineland-3 and other measures.

High to moderately high correlation coefficients between the Vineland-3 and the Vineland Adaptive Behavior Scales, Second Edition (Vineland-2) indicates a high degree of consistency between the forms in the measurement of adaptive functioning.

3.10 Research on Adaptive Behavior

The use of adaptive behavior data traditionally is associated with eligibility decisions for persons with intellectual and developmental disabilities, such as intellectual disability and ASD. Measures, including the ABAS-3 (Harrison & Oakland, 2015) and the Vineland-3 (Sparrow et al., 2016), show sensitivity between clinical and non-clinical groups as well as different profiles of strength and weakness displayed by children, adolescents, and adults who have been diagnosed with developmental and intellectual disabilities as well as other disorders, such as emotional and behavioral disorders, ADHD, learning disabilities, and visual/hearing impairment.

3.10.1 Developmental and Intellectual Disabilities

On the ABAS-3, individuals with intellectual disability displayed below average general adaptive behavior with score differences compared to matched samples falling two standard deviations lower in almost every adaptive skill area across all forms. This is consistent with current research (Harrison & Oakland, 2015). On the Vineland-3, individuals with intellectual disability displayed impaired general adaptive behavior as well as deficits in communication, daily living, socialization, and motor skills (Sparrow et al., 2016). Thus, those with intellectual disability have difficulty independently displaying general adaptive behavior, including impairments in various skill areas. Given the pervasive influence of adaptive behavior on developmental and intellectual disorders, researchers have investigated the adaptive behavior of persons who display other disabilities and disorders (Harrison, 1990; Reschly, 1990), including ASD (Bölte & Poustka, 2002; Fisch, Simensen, & Schroer, 2002; Freeman, Del'Homme, Guthrie, & Zhang, 1999; Gilotty, Kenworthy, Sirian, Black, & Wagner, 2002; Harrison & Oakland, 2003; Liss et al., 2001; Schatz & Hamdan-Allen, 1995; Sparrow et al., 2016); externalizing problems and psychological disturbances (Clark, Prior, & Kinsella, 2002; Harrison & Oakland, 2015; Sparrow & Cicchetti, 1987); ADHD (Harrison & Oakland, 2015; Sparrow, Cicchetti, & Balla, 2005); and learning disabilities (Harrison & Oakland, 2015; Leigh, 1987; Strawser & Weller, 1985; Weller & Strawser, 1987).

3.10.2 Autism Spectrum Disorder

On the Vineland-3, children with autism spectrum disorder (ASD) displayed impairment in general adaptive behavior (Sparrow et al., 2016). Specifically, those with IQs of 70 and above fell two standard deviations below typically developing peers,

whereas those with IQs less than 70 fell three standard deviations below typical peers. The most relevant impairments were displayed in social communication and social interaction in the communication domain, and interpersonal relationships and play in the socialization domain. The authors purport that restricted and repetitive patterns of behaviors, interests, or activities are not adaptive behavior skills; rather they are maladaptive behaviors (Sparrow et al., 2016). Therefore, these behaviors are captured in the maladaptive critical items. Likewise, the ABAS-3 found children diagnosed with ASD had clinically meaningful impairments in all domains and skill areas when compared to typically developing peers (Harrison & Oakland, 2015). Findings from these studies are consistent with the dominant definition of ASD that emphasizes impairment in communication (verbal and nonverbal) and socialization skills (APA, 2013).

Research on the adaptive behavior and skills of children with ASD generally reveals social skills deficits. The general adaptive behavior as well as adaptive conceptual, social, and practical behaviors were far below average in 24 students with ASD (mean age 10.3) (Ditterline, Banner, Oakland, & Becton, 2008). The students displayed significant impairment in community use, health and safety, communication, self-direction, social, leisure, and self-care skills, yet relative strength in functional academics and school living—thus suggesting that the educational programs for these students were responsive to their needs. Adaptive daily living and socialization skills were studied in 72 children and adolescents with ASD (mean age of 8.2) (Schatz & Hamdan-Allen, 1995). Daily living skills were found to be least impaired and socialization skills to be most impaired. This is consistent with other findings (e.g., Bölte & Poustka, 2002) as well as the accepted definition of ASD.

A finding that adaptive communication and socialization skills are correlated with the metacognitive abilities of initiation and working memory in 35 children with ASD (mean age 10.5) suggests that ASD is associated with deficits in executive functioning (Gilotty et al., 2002). Correlates of adaptive behavior were compared for 35 9-year-old children with high-functioning ASD and 40 9-year-old children with low-functioning ASD (Liss et al., 2001). Intelligence limited the ability of lower functioning children to acquire adaptive skills, while specific deficits including autistic symptomology as well as impairments in language and verbal memory limited the ability of higher functioning children.

When children with ASD were compared to those with intellectual disability, Schatz and Hamdan-Allen (1995) found those with ASD displayed smaller increases in adaptive behavior at progressively higher levels of intellectual functioning. This suggests that the impact of intelligence on adaptive behavior may be less for children with ASD than for those with intellectual disability.

Partial support for this finding was found in a study of the adaptive social skills of 210 individuals with ASD (ages 3 to 19) (Freeman et al., 1999). Improvements in social skills were unrelated to participants' intellectual ability. However, improvements in communication and daily living skills were related to their intellectual ability. Individuals with IQs above 70 made greater gains in communication and daily living skills compared to those with IQs below 70. Further, adaptive behavior improved with age (Freeman et al., 1999). In contrast, a longitudinal 2-year study of

18 children with ASD (ages 3–12) found they generally acquired general adaptive behavior, communication, daily living, and socialization skills at a slower-than-average rate (Fisch et al., 2002). Further longitudinal research with larger samples is needed to determine the specific relationships among age, IQ, and adaptive changes in children with ASD (Table 3.3).

3.10.3 Externalizing and Internalizing Disorders

On the ABAS-3, children with emotional and behavioral disorders (ED/BD) had significantly lower adaptive skills than matched controls (Harrison & Oakland, 2015). Those with comorbid intellectual disability and ED/BD demonstrated the lowest adaptive functioning when compared to others with comorbid disorders. The comorbid intellectual disability and ED/BD sample exhibited the lowest adaptive skills in communication and functional academics. Children with comorbid ADHD and ED/BD demonstrated lowest functioning in self-direction (Harrison & Oakland, 2015). Impairments in social skills also were evident. Another study found adaptive conceptual and social behaviors to be below average in 28 students receiving special education services for emotional disturbance (mean age 8.3). Impairment was most severe in self-direction, social, and self-care skills (Ditterline et al., 2008). The Vineland-3 did not conduct any studies of those with ED/BD and deferred to the previous edition due to the high correlations between versions (Sparrow et al., 2016). On the Vineland-2, individuals with emotional and behavioral disturbance exhibited below average general adaptive behavior. They displayed significant impairment in adaptive socialization, receptive and expressive language, and daily living skills as well as elevated (i.e., abnormal) internalizing and externalizing behaviors (Sparrow et al., 2005). Results confirmed that those with emotional and behavior disorders display general impairment when interacting with others as well as difficulty in various discrete adaptive skill areas.

For individuals who display externalizing disorders (e.g., ADHD, conduct disorder, and oppositional defiant disorder), the severity of impairment in adaptive behavior tends to increase with the severity of their emotional disturbance (Sparrow & Cicchetti, 1987). Deficits in socialization are displayed most often. Although some children with externalizing disorders display deficits in communication and daily living skills, these patterns are less predictable than patterns indicating deficits in socialization.

The adaptive social and communication skills of 110 adolescents were compared across four groups: an oppositional defiant disorder/conduct disorder-only group, an oppositional defiant disorder/conduct disorder and ADHD group, an ADHD-only group, and a control group (Clark et al., 2002). Compared to the control group, all three clinical groups displayed lower adaptive social skills. Among the clinical groups, participants in the ADHD group displayed the highest social skills and the lowest communication skills. Adolescents in the oppositional defiant disorder/conduct disorder group displayed the lowest social skills and the highest communication skills.

Table 3.3 Research of adaptive behavior with clinical samples

Disability	ABAS-3	Vineland-3
Developmentally delayed		No domains under 2 SD
Intellectual disability (IQ 50–70)		ABC, communication, daily living skills, socialization, receptive (3–18 years), expressive, written, community, interpersonal relationships (19+ years), play and leisure, coping skills (19+ years)
Intellectual disability (IQ 35–49)		Ages 3–18 years: ABC, communication, daily living skills, socialization, receptive, expressive, written, personal, community, play and leisure, coping skills
Intellectual disability (IQ <35)		Ages 19+ years: ABC and all domain and skill areas
Intellectual disability (general)		ABC and all domain and skill areas
	Ages 0–5: GAC, conceptual, social, practical, communication, community use, home living, health and safety, self-care, self-direction, social	
	Ages 5–21 years: GAC and all domain and skill areas	
Autism spectrum disorder	Ages 0–5 years: GAC, conceptual, social, practical, communication, community use, functional pre-academics, home living, health and safety, leisure, self-care, self-direction, social	IQ <70: ABC, communication, daily living skills, socialization, receptive, expressive, written (9–20 years), personal, domestic (3–8 years), community, interpersonal relationships, play and leisure, coping skills, fine motor (3–8 years)
	Ages 5–21: no domain or skill areas <2 SD	IQ >70: Ages 3–8: no domain or skill areas <2 SD; Ages 9–20: ABC, socialization
ADHD	No domain or skill areas <2 SD	
Learning disorders	Communication, functional academics, self-direction	
Hearing impaired	No domain or skill areas <2 SD	No domain or skill areas <2 SD
Visual impaired		No domain or skill areas <2 SD

Note: Table indicates adaptive behavior composites, domains, and skill areas scores that fall greater than two standard deviations below the mean for each disability on the ABAS-3 and Vineland-3 compared to typically developing peer samples

ABC adaptive behavior composite, ADHD attention deficit/hyperactivity disorder, GAC general adaptive composite

3.10.4 Attention Deficit/Hyperactivity Disorder

On the ABAS-3, children with ADHD displayed profiles similar to those displayed by children with emotional and behavioral disorders. Children with ADHD displayed greatest impairment in self-direction skills, underscoring their general difficulty with maintaining attention and regulating impulsivity, which impacts the ability to start and complete tasks, maintain a schedule, follow directions, and make choices (Harrison & Oakland, 2015). The Vineland-3 manual does not provide a sample of children diagnosed with ADHD and defers to the previous edition (Sparrow et al., 2016). On the Vineland-2, those diagnosed with ADHD showed impairment in adaptive communication and socialization behaviors as well as elevated maladaptive behaviors (Sparrow et al., 2005). These deficits may lead to impairment in educational settings in which students with ADHD must display independent responsibility for the organization and thoroughness of their work.

In contrast to more flexible home settings, structured educational settings are most difficult for children with ADHD, as demonstrated by differences in adaptive behavior ratings made by parents and teachers. Parent ratings generally are higher than matched teacher ratings. Thus, in contrast to their impairments at home, children with ADHD at school may display greater impairments in adaptive communication, self-direction, and socialization skills and display greater difficulty in classrooms in which self-control, rule-governed behavior, and attention to detailed academic tasks are required.

3.10.5 Learning Disabilities

On the ABAS-3, children with learning disabilities displayed significantly lower general adaptive behavior when compared to a matched control group. Their communication, functional academics, and self-direction skills were most impaired (Harrison & Oakland, 2015). Twenty-six students with learning disabilities (mean age 8.1) displayed below average conceptual adaptive behaviors (Ditterline et al., 2008). Their impairments were most evident in functional academics, communication, and self-direction skills. The Vineland-3 deferred to the second edition for those with learning disabilities (Sparrow et al., 2016). On the Vineland-2, individuals with learning disabilities exhibited deficits in adaptive communication and writing skills (Sparrow et al., 2005). Thus, although academic problems may be most common for individuals with learning disabilities, they also tend to display impairment in important adaptive skill areas.

Three distinct groups emerged when relationships among adaptive behavior, processing speed, academic achievement, and intellectual ability were examined in 112 students with learning disabilities (ages 8–11) (Strawser & Weller, 1985). Group 1 displayed average intellectual ability, mild-to-moderate deficiencies in adaptive behavior, and discrepancies between intellectual ability and academic achievement. Group 2 displayed average levels of intellectual ability, severe deficiencies in adaptive behavior, and significantly greater discrepancies among intellectual ability,

academic achievement, and processing speed. Group 3 displayed below average intellectual ability, moderate deficiencies in adaptive behavior, and no discrepancies between intellectual ability and academic achievement or processing speed. Results suggest that students with learning disabilities present with heterogeneous conditions, and their adaptive behavior deficiencies may range from mild to severe. The most severe levels of adaptive behavior deficits were found in those students who displayed the greatest discrepancies among intellectual ability, academic achievement, and processing speed. Thus, prior to placement and programming decisions, consideration of adaptive behavior may aid in determining the severity of a particular learning disability subtype and the impact the learning disability may have on a child's adaptive functioning.

Adaptive self-care, communication, social, academic, and occupation skills of 114 students with learning disabilities (66 elementary-level participants with a mean age of 9.1 and 48 secondary-level participants with a mean age of 13.4) were compared with same-age peers with normal intelligence or with intellectual disability who comprised the norm group of the Adaptive Behavior Inventory (Leigh, 1987). The adaptive skills of students with learning disabilities were more impaired than students with normal intelligence and less impaired than students with intellectual disability.

Students with learning disabilities generally displayed their highest skills in self-care and lowest skills in academic areas. Further, adaptive behavior was considerably lower in adolescents than in children, suggesting that adaptive behavior deficits may be more prevalent in adolescence than in childhood.

Students receiving special education services for multiple or more severe disorders (e.g., emotional disturbance in combination with specific learning disability or ASD) display more severe impairment in adaptive behavior than students receiving services for singular disorders (e.g., emotional disturbance) (Ditterline et al., 2008). The general adaptive behavior as well as the adaptive conceptual, social, and practical behaviors were below average for 20 students receiving services for both emotional handicap and specific learning disabilities (mean age 8.5). These students displayed their greatest impairment in social, self-direction, school living, leisure, health, safety, and communication skills (Ditterline et al., 2008). The presence of an emotional and behavioral disturbance together with a specific learning disability may lead to impairment in general adaptive behavior as well as impairment in multiple skill areas.

Thus, research illustrates impairment in the adaptive behavior and skills of individuals with various disabilities. Those with intellectual disability display deficits in general adaptive behavior as well as in various skill areas. Individuals diagnosed with ASD tend to display deficits in adaptive communication and socialization. Those with emotional and behavioral disturbance tend to display deficits in socialization, while deficits in other skill areas such as communication and daily living are less predictable. Individuals diagnosed with learning disabilities tend to display deficits in conceptual adaptive behaviors (i.e., qualities related to academic skills).

3.10.6 Hearing/Visually Impaired

On the ABAS-3 a sample of those diagnosed with deaf or hard of hearing did not significantly differ from the general adaptive composite mean (Harrison & Oakland, 2015). Additionally, significant differences were not found in domain or skill areas. The Vineland-3 found those diagnosed with a hearing-impairment had significantly lower scores on the three communication domains when compared to matched controls (Sparrow et al., 2016). No statistically significant differences were found on the other domains or the maladaptive scales. Also on the Vineland-3 with a sample of individuals with visual impairment, the adaptive behavior composite and all domain scores fell in the low average range.

3.11 Conclusion

Adaptive behavior refers to one's ability to meet daily living responsibilities and respond to the needs of others, including the conceptual, practical, and social skills that people need to function in their everyday lives. The assessment of adaptive behavior traditionally has been associated with diagnosing developmental disabilities. Intellectual disability is generally characterized by significant impairments in adaptive behavior and intellectual functioning (AAIDD, 2010).

The assessment of adaptive behavior increasingly is being used for diagnosis and classification together with treatment planning and evaluation for individuals with various disabilities. Adaptive skills should be assessed routinely for any individuals who have difficulties and disorders that may impair their daily functioning. For example, individuals with attention disorders, ASD, developmental disabilities, emotional and behavioral disturbance, and learning disabilities generally exhibit impairments in daily living skills as well as patterns of strength and weakness in discrete adaptive skill areas. The assessment of adaptive behavior provides useful information for diagnosis, functional assessment, and treatment planning and evaluation for these and other individuals.

The WHO, AAIDD, and APA emphasize the importance of adaptive behavior and skills. The assessment of adaptive behavior is necessary for the diagnosis of intellectual disabilities under AAIDD and APA guidelines. Also, the evaluation of adaptive behavior yields information that is useful to professionals using the *WHODAS 2.0* (APA, 2013). The WHO's *ICF* provides a framework that professionals may find useful for gathering information about clients' functional status. The Activities and Participation portions of the *ICF* emphasize the acquisition of knowledge about skills used in daily life. Measures of adaptive behavior help provide this information, thus assisting professionals to describe clients more comprehensively.

Further, qualification for services under federal programs often requires information from measures of adaptive behavior. Information from adaptive skills assessments informs eligibility decisions under programs such as the Individuals with Disabilities Education Act, Supplemental Security Income, and Social Security disability.

This information may be required to establish stable daily functional limitations—information that often is necessary for the receipt of services. Thus, information from adaptive behavior assessments aids professionals in developing, monitoring, and ameliorating individual and family service, education, and transition services for people with various disabilities. The information also is helpful in the creation of programs for those entering prevocational training or vocational activities and in the evaluation of the needs of the elderly for assisted living and other forms of support. Professionals can select from several well-developed norm-referenced measures of adaptive behavior. Information on three scales reviewed in this chapter is intended to help professionals in the selection of one or more measures that best meet their needs. The use of these measures provides information that assists professionals in completing more comprehensive assessments for individuals, identifying specific areas of impairment, and developing, implementing, and monitoring intervention services. Professionals often find measures of adaptive behavior to be valuable because results provide data useful for clinical assessment and individual evaluation, assisting in differential diagnosis, establishing eligibility for special services, informing program planning, and identifying changes over time in the skills used by individuals to effectively function in their daily lives.

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