

Early Childhood Measurement and Evaluation Tool Review

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Vineland Adaptive Behavior Scales-Second Edition (Vineland-II)

Measurement Areas:

The Vineland is designed to measure adaptive behavior of individuals from birth to age 90. The Vineland-II contains 5 domains each with 2-3 subdomains. The main domains are: Communication, Daily Living Skills, Socialization, Motor Skills, and Maladaptive Behavior (optional). The domain scores yield an adaptive behavior composite.

Purpose:

The Vineland-II is a standardized norm-referenced assessment tool that can be used for:

- measuring an individual's daily functioning
- measuring deficits in adaptive behavior
- clinical diagnosis of autism spectrum disorders, genetic disorders, developmental delays, emotional and behavioral disturbances as well as other mental, physical or injury related conditions
- developmental evaluations
- progress monitoring
- program planning
- research

Length and Structure:

The Vineland-II scales are available in three formats. First, there are two survey forms, the survey interview form and the parent/caregiver rating form. These forms assess the four broad domain areas: communication, daily living skills, socialization and motor skills. In addition there is an optional scale that measures maladaptive behaviors. The two forms are identical except for the mode of administration (either interview or rating scale). Second, there is an expanded interview form which measures the broad domain areas. In addition the expanded form also provides a basis for developing educational, residency or treatment programs. Finally, there is a teacher rating form which measures the four domain areas as the teacher sees the behavior occurring specifically within the educational setting. This form also includes items pertaining to academic functioning. The teacher rating form is for students aged 3 to 21 years 11 months.

The Vineland-II is designed to be administered individually. Eleven general subdomains are grouped into four domains: communication, daily living skills, socialization, and motor skills. The domains are made up of subdomains in which the scores are added to form the domain composite scores. The four domain composite scores then combine to form the adaptive behavior composite for those individuals aged birth to 6 years 11 months. Three domain composite scores (communication, daily living skills and socialization) combine to form the adaptive behavior composite for those aged 7 through 90.

Using the interview format, the administration of the Vineland-II takes approximately 20-60 minutes. Using the parent/caregiver self report form requires between 30-60 minutes to complete.

Materials:

The Vineland-II is an instrument that requires graduate level training in psychology or social work and experience in assessment and test interpretation. This tool is targeted to institutions with personnel possessing masters and doctorates of psychology or social work, and has licensure in a relevant area of assessment with provincial or national organizations. The Vineland-II survey starter sets range from USD \$164.75 to USD \$398.35. Vineland-II scoring and reporting software ranges from USD \$290 to USD \$445.00. Additional record forms are also available from the publisher.

Accessibility:

The Vineland-II is available in the English language. A Spanish version of the survey interview form, report to parents, and report to caregivers, is also available.

Administration, Scoring, and Interpretation:

The Vineland-II manual suggests that the test examiners and scorers have graduate training in test administration and interpretation. A rater (e.g., teacher, parent, and caregiver) should be an adult who is familiar with the everyday activities and behavior of the individual being assessed. The rater should also have significant contact with the individual over an extended period of time. A caregiver could be a parent, guardian, grand parent, nurse, social worker or other individual who is close to the person being assessed. Raw scores can be converted to Vineland-II derived scores, standard scores, V-scale scores, percentile ranks, age equivalents, and stanines. In addition, confidence intervals can be constructed for scores. Results can be described by adaptive levels and maladaptive levels. Adaptive levels are descriptive categories which communicate test results. The maladaptive levels are descriptive categories in which maladaptive behaviors are rated as average, elevated, or clinically significant. Individuals with formal graduate-level or professional training in psychological assessment should interpret test results using the 6 step interpretation method described in the manual. The manual contains a chapter on interpretation, including exemplar case studies.

Subscales:

The Vineland-II consists of 5 domains each with subdomains. The manual lists the following description of the Vineland-II (p.3):

1. Communication Domain:

Receptive: How the individual listens and pays attention and what he or she understands.

Expressive: What the individual says, how he or she uses word and sentences to gather and provide information.

Written: What the individual understands about how letters make words, and what he or she read and writes.

2. Daily Living Skills Domain:

Personal: How the individual eats, dresses, and practices personal hygiene.

Domestic: What household tasks the individual performs.

Community: How the individual uses time, money, the telephone, the computer, and job skills.

3. Socialization Domain:

Interpersonal Relationships: How the individual interacts with others.

Play and Leisure Time: How the individual plays and uses leisure time.

Coping skills: How the individual demonstrates responsibility and sensitivity to others.

4. Motor Skills Domain:

Gross Motor: How the individual uses arms and legs for movement and coordination.

Fine Motor: How the individual uses hands and fingers to manipulate objects.

5. Maladaptive Behavior Domain (Optional):

Maladaptive Behavior Index: A composite of Internalizing, Externalizing and other types of undesirable behavior that may interfere with the individual's adaptive functioning.

Maladaptive Behavior Critical Items: More severe maladaptive behaviors that may provide clinically important information.

Adaptive Behavior Composite: A composite of the communication, daily living skills, socialization, and motor skills domains.

Documentation:

The Vineland-II Survey Forms Manual provides specific procedures for administration and scoring. The manual also contains comprehensive chapters on interpretation, test standardization, norm development, validity, and reliability. Examples of case studies and interpretation are included in the manual.

Norming Sample:

The Vineland-II Parent/Caregiver rating form was standardized using a nationally representative American sample of 3,695 individuals from birth to 90 years. The norm sample was stratified according to demographic variables such as sex, race/ethnicity, socioeconomic status, and geographic region. The researchers also controlled for community size and special education program placement.

Data for norming and standardization were collected on eleven clinical groups: attention deficit/hyperactivity disorder, autism-nonverbal, autism-verbal, emotional or behavioral disturbance, deafness/hard of hearing, learning disability, cognitively delayed-mild (child and

adult samples), cognitively delayed-moderate (child and adult samples), cognitively delayed severe/profound (adult sample) and visual impairment.

The demographic stratification on many of the variables is close to that of the 2001 US Current population survey. According to the manual, persons classified as being Native American or American Indian were included in the standardization but these individuals were included in the category “other” along with Alaska Natives, Asians, and Pacific Islanders. The entire “other” sample is approximately 6% of the norming sample.

Reliability:

Four methods were used to evaluate the reliability of the Vineland-II.

Internal Consistency: A split-half reliability test determined the reliability of scores for two halves of the test using the standardization sample data. The spearman-brown formula was used to determine correlations of the domains and subdomains. Across the age groups, the communication domain correlations ranged from .84 to .93. For the Daily Living Skills domain correlations ranged from .86 to .91. The Socialization domain ranged from .84 to .93. The Motor Skills domain ranged from .77 to .90. The Maladaptive Behavior Index demonstrated internal consistency coefficients ranging from .85 to .91 across age groups. The Adaptive Behavior Composite reliability was determined by the formula from Nunnally (1978); correlations for this composite ranged from .93 to .97 across the age groups.

Test-retest Reliability: The manual notes that in order to determine test stability a sample of 414 respondents from the standardization sample completed two forms of the Vineland-II on separate occasions (between 13 and 34 days from the first administration). Average correlations were found to range between .76 and .92 across domains (with the exception of the Maladaptive Behavior Subscales and Index), subdomains, and ages. The Maladaptive Behavior Subscales and Index have test-retest correlations ranging from .74 to .98.

Inter-interviewer Reliability: In order to determine if scores remain consistent and do not change drastically depending on interviewer, 148 respondents were interviewed on two different occasions by two different interviewers. Average correlations ranged between .70 to .76 across domains/subdomains (with the exception of the Maladaptive Behavior Subscales and Index) and ages. The Maladaptive Behavior Subscales and Index demonstrate correlations ranging from .59 to the mid .80s across age groups.

Interrater Reliability: Interrater reliability measures the degree to which scores from different respondents about the same individual are consistent. Data from 152 individuals were used to determine interrater reliability. Average correlations ranged between .71 to .81 across domains/subdomains (with the exception of the Maladaptive Behavior Subscales and Index) and ages. The Maladaptive Behaviors Subscales and Index demonstrated correlations between .59 and .83 for the Survey Interview Form and between .39 and .87 for the Parent/caregiver rating form across age groups.

Validity:

The sources of validity evidence listed in the Vineland-II manual come from test content, response process, test structure, clinical groups, and relationships to other measures.

Test Content: The Vineland-II was designed to measure 4 major aspects of adaptive functioning: Communication, Daily Living Skills, Socialization and Motor Skills. Each of the domains has subdomains each with target behaviors which are deemed important to adaptive functioning. The content of the Vineland-II is supported from several important sources including American Association on Cognitively delayed (2002), American Psychological Association (1996), and the National Academy of Sciences, as well as from the previous version of the Vineland (Vineland ABS).

The manual also notes that test development followed various procedures to ensure test content would be representative of the purported measurement areas. This process included “justifying the theoretical structure, defining the content and test blueprint, and evaluating the representativeness of the content” (Sparrow, Cicchetti, & Balla, 2005, p.125). Items within each subdomain were analyzed using some methods from item response theory to ensure that each item was included within its appropriate domain.

Group Differences: The test developers evaluated measurement bias at the item and scale levels using differential item functioning (DIF). Difference among sex, socioeconomic status, ethnic and group membership were found to small.

Test Structure: The intercorrelations of subdomain, domain, and Adaptive Behavior Composite scores were analyzed. The authors indicate that “generally correlations between subdomains are moderate in size, and are higher at younger ages than older ages. Subdomain correlations within a domain tend to be larger than those between domains. Overall, however, the amount of subdomains clustering is modest, implying that there are functional relationships among adaptive behaviors in different subdomains” (Sparrow, Cicchetti, & Balla, 2005, p.132).

The manual lists results of confirmatory factor analyses. Overall, the results indicate that the data fit the proposed model well.

Clinical Groups: Another important facet of this adaptive functioning measure is to demonstrate how the information provided by the measure assists in diagnostic decisions. It would be expected that certain groups would present with distinctive score profiles. The clinical groups included: Cognitively delayed, Autism, Attention-Deficit/Hyperactivity Disorder, Emotional/Behavioural Disturbance, Learning Disability and Visual and Hearing Impairments. It was demonstrated that generally those with cognitively delayed have a mean adaptive behavior composite score two standard deviations below the mean of the nonclinical group. An adaptive measure score of this nature is required for diagnosis as listed in the DSM-IVTR and by the American Association for Cognitively delayed. For those with Autism, again it was found that they generally have a mean score two standard deviations below the mean of the nonclinical sample. The Vineland-II score profiles also were able to differentiate severity among individuals with cognitively delayed and autism.

The Vineland was also able to demonstrate distinct profiles for those with attention deficit/hyperactivity disorder, emotional and behavior disorders, leaning disabilities and visual and hearing impairments.

Relationship to other measures: Concurrent validity is determined by demonstrating the relationship between the scale and other scales that measure the same construct. The

Vineland-II was compared to the previous version the *Vineland Adaptive Behavior Scales*. Correlations between the two measures ranged between .69 to .96 across domain/subdomains and across ages. The Vineland-II scores were also compared to scores on the *Adaptive Behavior Assessment System-Second Edition (ABAS-II)* for 197 individuals. The overall Adaptive Behavior Composite on the Vineland-II and the General Adaptive Composite from the ABAS-II correlated at .70. Using a sample of 236 children and adolescents, the Vineland-II scores were also compared to those produced by the *Behavior Assessment System for Children, Second Edition (BASC-2)* parent rating form. It should be noted that the Vineland-II measures mostly adaptive behavior while the BASC-2 measures predominately maladaptive behavior with a section devoted to adaptive skills. The most similar subscales were correlated and results indicated a range of .34 to .74 across the age range. Maladaptive scales on the Vineland correlated with the Behavior Symptoms Index on the BASC-2 at .80 for the Parent Rating Form - Child and .69 the Parent Rating Form - Adolescent.

Discriminant validity demonstrates that a measure is not related to tools that purport to measure different constructs. The relationship between the Vineland-II and the Wechsler Intelligence Scales for Children-Third Edition (WISC-III) and the Wechsler Adult Intelligence Scale- Third Edition (WAIS-III) was investigated on a group 28 children and 83 adults. The results for the relationship between the WISC-III and the Vineland-II indicate a near zero correlation. Similarly the relationship between the Vineland-II adaptive behavior composite and the WAIS-III full scale IQ score was .20. These results are not unexpected as measures of adaptive behavior differ greatly from measures of intelligence.

Publication Information:

This review is based on the *Vineland Adaptive Behavior Scales-Second Edition* published in 2005 by AGS Publishing

Materials Used for Tool Review:

Vineland-II Survey Forms Manual

References:

Nunnally, J. C. (1978). *Psychometric theory* (2nd ed.). New York: McGraw-Hill.

Sparrow, S. S., Cicchetti, D. V., & Balla, D. A. (2005). *Vineland-II Adaptive Behavior Scales: Survey Forms Manual*. Circle Pines, MN: AGS Publishing.

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