Perspectives

Utility of the Vineland Adaptive Behavior Scales in Diagnosis and Research With Adults Who Have Mental Retardation

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All diagnostic guidance on mental retardation is consistent in that all systems require an assessment of intellectual functioning and adaptive behavior (American Psychiatric Association, 1994; Luckasson et al., 1992; Luckasson et al., 2002; World Health Organization, 1992). Although there are many measures of adaptive behavior available, the Vineland Adaptive Behavior Scales (Sparrow; Balla, & Cicchetti, 1984) have proved very popular and have remained in print since their revision and restandardization in 1984. The use of the Vineland has been endorsed as a measure of adaptive behavior by the World Health Organization (1994) and the United Kingdom Royal College of Psychiatrists (2001) in their diagnostic guides. The Vineland has also proved to be popular in legal as well as clinical and research contexts. Most significantly, this instrument has been used in major research projects, such as the standardization of the Wechsler Adult Intelligence Scale-Third Edition (Wechsler, 1997) and the development and standardization of the Hayes Ability Screening Index (Hayes, 2000). The scales are also used widely in legal contexts, where the diagnosis of mental retardation is considered to be of relevance for a defendant in mitigation or a complainant or witness. Although not endorsed, the use of the Vineland has been affirmed by the authors of the 10th revision of Mental Retardation: Definition, Classification, and Systems of Supports (Luckasson et al., 2002). According to the latest definition by the American Association on Mental Retardation—AAMR (Luckasson et al., 2002), a person with mental retardation has significant limitations in adaptive behavior as expressed in conceptual, social, and practical adaptive skills. This represents a change from the previous definition of having limitations in a least 2 of 10 specific skill areas (Luckasson et al., 1992). The new definition also includes an operational criteria of two standard deviations (SDs) below the mean for scores on measures of practical, conceptual, and social adaptive skill areas or an overall measure.

In Luckasson et al. (2002), the authors reviewed five measures of adaptive behavior. Of these, only the Vineland Adaptive Behavior Scales met the full requirements of the AAMR 2002 definition. The present commentary concerns the current advantages and disadvantages of using the Vineland in the diagnostic process and research with adults who have mental retardation.

The 1984 Vineland replaced the original Vineland Social Maturity Scale (Doll, 1935, 1965), which was developed for use in the evaluation of mental retardation. The 1984 Vineland was designed to reflect societal changes that had occurred since the 1930s. It was produced in three forms, which are all administered through a respondent. The Survey form and Classroom Edition each have twice as many items as the original Vineland and the Expanded form has three to four times the number of items. The standardization of the instrument was conducted with a sample of 3,000 individuals from birth to 18 years 11 months who were selected across the United States according to demographic information from the 1980 Census. Additional work was undertaken to provide norms for groups of children with emotional disorders, visual impairments, and hearing impairments as well as ambulatory and nonambulatory adults with mental retardation living in residential and nonresidential facilities.

Advantages

The Vineland has a number of advantages. Exploratory and confirmatory factor analytic studies (see Widaman & McGrew, 1996, for a review) have identified four domains: (a) Motor or Physical Competence; (b) Independent or Daily Living Skills, or Practical Intelligence; (c) Cognitive Com-
proficiency, Communication, or Conceptual Intelligence; and (d) Social Competence or Intelligence. The AAMR (Luckasson et al., 2002) has incorporated factor analytic and conceptual work on adaptive behavior and identified conceptual, practical, and social skills to represent this multidimensional component of the definition. The content of the Vineland corresponds to the four domains for children and the later three domains for adults. It provides scores for each domain as well as an overall Adaptive Behavior Composite Score. The scales of the Vineland were subjected to extensive reliability analyses, which showed satisfactory to high levels of internal consistency, split half, test–retest, and interrater reliability. A further advantage is that they can be administered in 20 to 30 minutes.

Because the scales are among the few that have extensive norms, comparisons with same age peers are possible. The Vineland provides standard scores, percentile ranks, stanines, adaptive levels, and age equivalents. Standard scores have a mean of 100 and an SD of 15, similar to many other tests.

The Vineland and diagnosis and research

Disadvantages

The Receptive subdomain of the Communication domain has only 13 items, which are heavily weighted at the basal end of the scale. It has a very low ceiling (8 to 9 years) as compared to alternative measures of receptive skills, such as the Peabody Picture Vocabulary Test (Dunn & Dunn, 1981). Items meant for older individuals, such as “can understand and follow complex directions or instructions” are not included, whereas the ability to give them is included on the Expressive subdomain.

The Vineland has some major psychometric deficiencies when used with adults who have mental retardation. Users are advised to refer to the norm table 18 years and older to derive standard scores for adults on the three domains. However, the normative sample size at this age level is small. In the 16 to 18 years and older age range, there was a sample of 200, which is divided into nine age group norm tables in the test manual. Thus, on average, we would expect 22 individuals in each age group norm table. Therefore, the validity of derived scaled scores is questionable. The norm tables also include standard scores from 20 upwards. Thus, these must be extrapolations based on the normal curve. The ceiling for the scores in the 18 and older table are comparatively lower than for other age groups, suggesting that the scores are not normally distributed, which was found by Loeb (1996) when standardizing the Independent Living Scales on a population of older adults.

Comparing individuals today with the supplementary norms is also problematic. Since the scales were standardized in 1981–1982, major changes have taken place in the provision of services and supports for adults with mental retardation. The impact of social role valorization has brought about a culture of greater opportunities, choice, and community presence and participation. Many of those living in the residential facilities provided in the 1980s would today probably be living in small community-based residences or their own homes, with supports more closely matched to their individual needs.

The Vineland, like most tests of adaptive behavior, are completed with an informant, such as a relative. This may reduce validity because the individual completing the instrument may underestimate or overestimate the individual’s level of competence. Reasons for this may depend on the purpose of the assessment or how well they know the person. Reliability and validity would be improved by a direct assessment of the individual as taken in the Independent Living Scales (Loeb, 1996).

The Vineland is widely used outside the United States; however, this brings about problems regarding the applicability of normative data. With regard to IQ, the World Health Organization (1994) stated in their guidelines that IQ should be determined from standardized intelligence tests for which local cultural norms have been determined. This should also apply to the assessment of adaptive behavior. Indeed, in the AAMR 2002 definition, Luckasson et al. stated that valid assessment considers cultural and linguistic diversity. The reason why we should not assume that the psychometric properties of tests are the same in different cultures has been illustrated by the results of comparisons of performance between United States and United Kingdom samples on the Wechsler Adult Intelligence Scale-Revised and the Third Edition. In both comparisons
slightly different means and restricted SDs for the United Kingdom samples were reported (Crawford, Gray, & Allen 1995; Wechsler, 2000). Thus, Crawford et al. argued that a higher cutoff point of 74 would be more appropriate for a classification of mental retardation in the United Kingdom. It may be possible that the psychometric properties of the Vineland in other countries are also different to those in the United States.

A further issue with the norms is that over the last 20 years, there may have been adaptive behavior inflation because scores rise as the norms become outdated. This has been reported for IQ and may also apply to adaptive behavior; IQs are estimated to rise three points a decade (Wechsler, 1997). Applying this principle to the Vineland, an Adaptive Behavior Composite score of 70 in 1984 would now be 76 and, therefore, above the diagnostic cutoff score of two SDs below the mean, even when confidence intervals are taken into account.

The Vineland was published in 1984 and, like its predecessor, has become dated. There have been major societal changes accompanied by technological advances that have significantly impacted on adaptive behavior. Most of these are in the area of independent or daily living skills. The way we eat has changed due to the changing role of women in the work force and the wide availability of convenience food, especially frozen dinners. The way we manage our finances has moved away from checking accounts to cash, debit, and credit cards. It is now becoming more important to be able to recall a four digit pin number than to sign your name and to use an Automated Teller Machine than write a check or withdrawal slip. The way we communicate has also undergone major change due to the technological advances in computing, which now provide e-mail and Internet services. The mobile phone has also become one of the most widely held accessories. Further, the age at which skills are acquired may have changed. A person of 16 years in 1984 did not have a check book, a telephone of his or her own, or access to a computer. Today, many have cash cards, mobile phones, and a home computer with access to the Internet. When they get hungry, they can put a frozen meal in a microwave oven.

Conclusion

The Vineland is in the process of being revised, but the current version will remain in use for some time. Users should, therefore, employ them with caution. The advantages of the coverage of the main domains of adaptive behavior, their standardization, impressive psychometrics, and brevity are becoming outweighed by significant disadvantages. Despite the efforts to produce a well-standardized scale, the number of adults in the original standardization group was very small, which makes the computation of standard scores for adults questionable. The representativeness of the data in the supplementary norms collected in the early 1980s is also of questionable utility today. The way the scales are administered, despite producing highly reliable results, may be influenced by informant bias and knowledge about the person. A direct approach would be more accurate. The content of the Vineland is becoming dated and out of step with modern living. Those using this instrument in other countries and cultures should also not assume that the content and psychometric properties of the scales are universal. The Vineland has proved to be popular and valuable and the restandardization is timely. It is hoped that the issues of concern will be resolved when the new scale is published.

References
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