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Concurrent validity of WAIS-III short forms in a geriatric sample with suspected dementia: Verbal, performance and full scale IQ scores

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Abstract

Evaluation of intellectual abilities using the WAIS-III is a common component of neuropsychological assessments. However, clinicians might be interested in administering reliable and valid short forms due to practical and clinical reasons. The present study examined the concurrent validity of eight short forms of the WAIS-III with full form IQ scores in a sample ($n = 43$) of geriatric outpatients referred for assessment of suspected dementia. There were no significant differences between the short and full form VIQ scores at $P < .01$, while half of the short form PIQ and FSIQ scores were significantly different from their respective full form scores at $P < .01$. Correlations between short and full form IQ scores ranged from .89 to .99. Seven-subtest short forms were able to accurately estimate over 80% of scores within ±2 S.E.M.s. This study supports limited use of WAIS-III short forms when conducting evaluations of older adults with suspected dementia.

Keywords: WAIS-III; Elderly; Assessment; Dementia; Abbreviation; Short form

1. Introduction

Psychological and neuropsychological evaluations of older adults often involve an assessment of intellectual abilities. One of the most widely used measures for evaluating intellectual

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abilities has been the Wechsler Adult Intelligence Scale (WAIS; Wechsler, 1955, 1981, 1997). The popularity of the WAIS has come from its utility with various clinical populations and large amount of research literature. In addition, the most recent revision of the WAIS, the WAIS-III, has increased utility with geriatric patients compared to previous versions with the normative data extended up to the age of 89 years (Wechsler, 1997).

Administration of the WAIS-III to obtain IQ scores includes six verbal (VIQ) and five performance (PIQ) subtests, with all 11 subtests contributing to a full-scale score (FSIQ). According to the WAIS-III manual, estimated administration time ranges from 60 to 90 min, but these times may increase to as long as two hours when being administered to some patient populations (Ryan, Lopez, & Werth, 1998), including geriatric patients with suspected dementia. One technique for reducing the amount of time spent testing intellectual abilities has been to employ short form versions of the WAIS, which involve only administering selected subtests to obtain estimated IQ scores. Ryan et al. (1998) reported that 10 of the 11 short forms they gave to patients reduced administration time by at least 50%.

Some of the WAIS short forms have included seven-subtest versions derived by Ward (1990) and Paolo and Ryan (1993). Although these short forms were originally developed with the WAIS-R, the same abbreviated forms have been extended to the WAIS-III. Overall, many studies have reported that seven-subtest versions of the WAIS-III (i.e., Ward's; Paolo & Ryan's) can be substituted for the full WAIS-III with various clinical populations, as they are very highly correlated, provide estimates that are not significantly different from the original scores, and are generally able to accurately classify persons compared to the full version (Axelrod, Ryan, & Ward, 2001; Pilgrim, Meyers, Bayless, & Whetstone, 1999; Ryan & Ward, 1999). Accuracy of estimated scores with short form versions has been highest for VIQ and FSIQ scores, while the ability to estimate PIQ scores has been less reliable. For example, Axelrod (2002) found VIQ and FSIQ scores could be accurately estimated (97% of scores within ± 10 points for both IQ estimates) with a four-subtest version of the WAIS-III, while the estimated PIQ scores were significantly higher than actual PIQ scores and only 76% of cases fell within ± 10 points of the WAIS-III PIQ scores.

Axelrod (2002) also examined the accuracy of another method for estimating IQ scores, the Wechsler Abbreviated Scale of Intelligence (WASI; Psychological Corporation, 1999). The WASI consists of four subtests (vocabulary, similarities, block design, and matrix reasoning, with different questions compared to the WAIS-III), has its own manual, normative data, and provides a table for estimating WAIS-III FSIQ scores from WAIS FSIQ scores. While the manual suggests the WASI should have strong concurrent validity with the WAIS-III, Axelrod (2002) found that abbreviated versions of the WAIS-III had higher accuracy compared to the WASI for VIQ, PIQ, and FSIQ scores in a mixed clinical sample. In addition, it took significantly longer to administer the WASI than the comparable four-subtest version of the WAIS-III. Further research is needed to examine the WASI and how it compares to abbreviated versions of the WAIS-III in various clinical samples.

Studies examining the accuracy of WAIS-III short forms have used either normal controls or mixed clinical populations (e.g., Axelrod, 2002), and have typically only examined one or two short forms with the population of interest. Information regarding the accuracy of different short form versions of the WAIS-III with a geriatric population referred for assessment of suspected dementia is limited. Wymer, Rayls, and Wagner (2003) examined three abbreviated forms