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## Comparison of WAIS and WAIS-R Scores of Mildly and Moderately Mentally Retarded Adults

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The Wechsler Adult Intelligence Scale (WAIS) and the Wechsler Adult Intelligence Scale-Revised (WAIS-R) were administered to 29 mildly and moderately mentally retarded adults. The WAIS Verbal and Full Scale IQs were significantly lower than were corresponding WAIS-R IQs. This difference is an exception to the general pattern of IQs being higher for tests that were standardized earlier. The present results suggest that WAIS-R IQs will be much higher than WISC-R IQs.

In 1981, the Wechsler Adult Intelligence Scale (WAIS, Wechsler, 1955) was revised and published as the Wechsler Adult Intelligence Scale-Revised (WAIS-R, Wechsler, 1981). This revision sought to update the WAIS content and to provide new norms based upon the scores obtained from more

recent samples of the population. Due to the differences between the two tests (revised instructions, updated norms, altered scoring of test items, and altered sequence of subtest administration), it is important to determine whether the two scales provide comparable scores. The present study was designed, therefore, to determine the equivalency of WAIS and WAIS-R scores for a population of mildly and moderately mentally retarded adults.

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Subjects were 29 mildly and moderately retarded clients (12 women, 17 men) from a regional mental health and mental retardation center. None of them had been tested for at least 6 months prior to the study. Subjects' ages ranged from 16 to 51 years, with a mean age of 29.5.

TABLE 1  
 MEANS, SDs, F TESTS, AND CORRELATIONS FOR WAIS AND WAIS-R SCORES

Subtest	WAIS		WAIS-R		F(1,27 df)	r
	Mean	SD	Mean	SD		
Information	3.28	1.46	3.00	1.60	0.83	.47 <sup>ns</sup>
Picture Completion	5.76	2.26	4.17	1.71	25.82***	.68 <sup>ns</sup>
Digit Span	2.24	2.13	2.86	1.81	3.97	.66 <sup>ns</sup>
Picture Arrangement	3.93	2.49	3.79	1.70	0.13	.56 <sup>ns</sup>
Vocabulary	2.07	2.09	2.90	1.18	9.02**	.73 <sup>ns</sup>
Block Design <sup>a</sup>	3.96	3.11	4.31	1.69	0.89	.83 <sup>ns</sup>
Arithmetic	2.17	1.31	2.69	0.93	8.15**	.66 <sup>ns</sup>
Object Assembly	5.28	2.79	4.24	1.92	7.48*	.68 <sup>ns</sup>
Comprehension	3.65	2.00	3.10	1.05	2.84	.51 <sup>ns</sup>
Digit Symbol	4.72	1.85	3.83	1.28	14.77***	.75 <sup>ns</sup>
Similarities	3.48	3.49	2.86	1.68	2.16	.84 <sup>ns</sup>
Verbal IQ	58.07	8.39	61.96	5.61	18.69***	.83 <sup>ns</sup>
Performance IQ	67.07	13.05	65.72	7.16	1.05	.89 <sup>ns</sup>
Full Scale IQ	59.86	9.27	62.00	6.11	5.93*	.90 <sup>ns</sup>

<sup>a</sup> WAIS-R Block Design scores were significantly higher than WAIS Block Design scores (means = 4.20 and 3.13, respectively) for subjects who were tested first with the WAIS and second with the WAIS-R,  $F(1, 14) = 7.26, p < .05$ . For the other order of administration, the Block Design scores of the two tests did not differ significantly.

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

The subjects were randomly assigned to two groups. Subjects in the first group ( $n = 15$ ) were tested initially with the WAIS, then with the WAIS-R. Subjects in the second group ( $n = 14$ ) were tested first with the WAIS-R, then with the WAIS. There was an interval of 30 to 45 days between administration of the two tests. Five graduate students proficient in the use of the WAIS and WAIS-R administered and scored the tests according to Wechsler's instructions.

For each of the three IQs<sup>1</sup> and 11 subtests, a Test (WAIS vs. WAIS-R)  $\times$  Order of Administration analysis of variance was performed. Significant differences between the WAIS and WAIS-R were found for two of the IQs and for 5 of the 11 subtests (see Table 1). For the Full Scale IQ and the Verbal IQ, WAIS scores were significantly lower than WAIS-R scores.

No significant main effects for order were found, and only the Test  $\times$  Order interaction for the Block Design subtest was statistically significant,  $F(1, 27) = 4.84, p < .05$  (see footnote in Table 1). All Pearson product-moment correlations for WAIS and

WAIS-R scores were statistically significant (see Table 1).

Since 1932, it has been necessary to establish increasingly more difficult norms for intelligence tests, such as the Wechsler scales, to compensate for the improved test performance of the standardization samples (Flynn, 1984). As a result of the increasing difficulty level of intelligence tests, subjects who are tested with two different intelligence tests nearly always score higher on the test that was standardized earlier. The most recent examples of this general pattern are comparisons of WAIS and WAIS-R IQs, in which investigators have found that WAIS IQs are significantly higher than WAIS-R IQs (Lippold & Claiborn, 1983; Smith, 1983; Wechsler, 1981). In contrast, we found that WAIS Verbal and Full Scale IQs were slightly (4 and 2 points, respectively), but significantly, lower than corresponding WAIS-R IQs. In a similar comparison, Spitz (1983) found that WAIS IQs of 31 retarded subjects did not differ significantly from WAIS-R scores. These two comparisons of WAIS and WAIS-R IQs of retarded adults clearly depart from the general pattern described by Flynn (1984); i.e., IQs are higher for a test that was standardized earlier.

Another exception to this expected pat-

<sup>1</sup> Although the scores of Wechsler scales are referred to as IQs in accordance with *Journal* policy, the authors note that an IQ is merely a test score and not a characteristic of the person being tested.

tern may be found when Wechsler Intelligence Scale for Children-Revised (WISC-R, Wechsler, 1974) and WAIS-R IQs of retarded subjects are compared. Spitz (1983) found that WAIS IQs were much higher (14.31 points) than WISC-R IQs for retarded adolescents and young adults. If this large discrepancy between the WAIS and WISC-R IQs were only a matter of subjects doing better on a test that was standardized earlier, then the updated norms of the WAIS-R should correct this discrepancy. The results of the present study and data presented by Spitz (1983), however, indicate that for retarded subjects WAIS-R IQs are equivalent or slightly higher than WAIS IQs. Thus, the WAIS-R IQs of retarded subjects will probably be much higher than WISC-R IQs. Awareness of the potential for such large discrepancies can help mental retardation workers reach appropriate conclusions during the periodic retesting of retarded adolescents and young adults.

The findings of the present study should be treated with caution because of the small sample size. Further research is needed comparing WAIS and WAIS-R IQs of re-

tarded adults and exploring the factors responsible for the unexpectedly high WAIS-R scores. Studies are also needed that compare WISC-R and WAIS-R IQs of retarded adolescents and young adults.

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