

VALIDATION OF A SHORT FORM ESTIMATION OF W.A.I.S. IN SUBNORMAL AND PSYCHOPATHIC PATIENTS

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Using Wechsler's own data (1955), Doppelt (1956) selected four subtests of the W.A.I.S. which correlated highly with the full scale I.Q. These were Arithmetic, Vocabulary, Block Design and Picture Arrangement. The sum of the scaled scores in the four subtests was correlated with the full scale score in seven age groups. The slopes of the regression lines were so similar that Doppelt recommended that the sum of the four subtests be multiplied by 2.5 and a constant of 10 added for subjects aged 16-34; 9 for subjects aged 35-44; 8 for those aged 45-54; 7 for those aged 55-64; 5 for those aged 65-74; and 4 for those of 75 and over. The resulting scores were translated into I.Q.'s, by entering Wechsler's age tables for Full Scale Scores. Pearson r 's between the Doppelt I.Q. and the W.A.I.S. I.Q. for each age group ranged from .95 to .96.

Clayton and Payne (1959) published a validation of this brief scale I.Q. in a clinical population composed of 72 schizophrenics; 51 personality disorders; 27 organics; 28 mental defectives; and 50 mixed diagnoses (total $N=228$). Pearson r 's for all groups, except mental defectives, ranged between .96 and .97. The correlation for defectives was .92. This was significantly lower than the other correlations at the .02 level (t test). No significant differences were found between the means of estimated I.Q.'s. and the means of Full Scale I.Q.'s. in any of the groups. They concluded that, with the possible exception of mental defectives, the abbreviated W.A.I.S. provided as valid an estimation of the Full Scale I.Q. in a clinical population as it did in the "normal" standardisation group.

The exclusion of subnormals on the basis of a sample as small as $N=28$, made it desirable that this finding should be further investigated using a larger number of subjects. Rampton Hospital caters for subnormal and psychopathic patients in need of special security treatment. Since 1963, male patients had been tested routinely on admission or referral with all eleven subtests of the W.A.I.S. An opportunity therefore existed to correlate Doppelt I.Q.'s. with Full Scale I.Q.'s. in a population that was largely borderline defective or dull-normal.

Method

The psychological files were examined for completed W.A.I.S. protocols and 341 were extracted. Doppelt's short form I.Q. was calculated for each of them, and the data tabulated in five legal categories: mental illness (M.I.) $N=18$; subnormality (S.) $N=140$; severe subnormality (S.S.) $N=56$; psychopathic disorder (P.D.) $N=99$; and dual classification (e.g. P.D. and S.) $N=28$. The mean age of the group was 28.75 years (S.D. 9.28). The distribution was positively skewed with the mode in the 19.5-24.5 range. Only the S.S. patients were significantly older than the others with a mean age of 31 years.

Results

A. Highly significant correlations ($P=<.01$) were obtained between the Short Form I.Q. and the W.A.I.S. Full Scale I.Q. for the total group, and for each legal category taken separately. Pearson r 's ranged from +.931 to +.988 (Table I). None of these differences in degree of correlation were significant. However, it was discovered that Doppelt estimations yielded I.Q. scores that were significantly higher

than W.A.I.S. Full Scale I.Q's. This was true for all legal categories. Only in the dual classifications was there any indication that the Doppelt I.Q. was equivalent in level to the W.A.I.S. I.Q. Even then, the difference of +1.53 was significant at the .05 level.

B. The frequency distributions of actual deviations between Doppelt and W.A.I.S. I.Q's. were constructed. Arbitrary intervals of five units were established, and the relevant scores plotted in age groups and in classification groups. In spite of the fact that the Doppelt I.Q. significantly over-estimated the Full Scale I.Q., the actual amount of difference was negligible. Only in the M.I. category (+4.05 I.Q. units) and the S.S. category (+2.33 I.Q. units) was the mean difference greater than two. Consequently, when the frequency distributions of score deviations were formed, it was found that the Doppelt I.Q. was within ± 5 I.Q. points in 70-80% of cases, depending on age range and classification.

Conclusions

In this sample of special security patients, the highest correlation between a brief form estimate and W.A.I.S. Full Scale I.Q. was obtained from patients classified Subnormal (Pearson $r=+.988$). The lowest correlation ($r=+.931$) occurred in Severely Subnormal patients. The differences in degree of correlation were not significant. This result tempers the findings of Clayton and Payne (op. cit.) and suggests that the Doppelt method is a reasonable screening device for intellectual assessment in subnormal patients. This conclusion is qualified by the fact that the Doppelt significantly over-estimated the Full I.Q. by 1-4 I.Q. points, depending on age and classification. One explanation of this could be that the lower scale scores normally obtained by such patients in General Knowledge and Similarities have diminished the Full Scale I.Q. The frequency distributions of score deviations demonstrated that three-quarters of the patients were estimated within ± 5 I.Q. points of the actual W.A.I.S. I.Q.

It is perhaps as well to note that the data used in both of the previous studies, as well as in this one, were based on four subtests, extracted after the complete W.A.I.S. protocols had been administered. It is difficult to say what influence the application of the abbreviated form alone might have, outside the context of the Full W.A.I.S. The only means of investigating the importance of this variable would be to follow up the Doppelt estimate with a Full Scale retest after a stipulated period of time had elapsed. This manoeuvre was not within the scope of the present study.

TABLE I: Pearson correlations between Doppelt I.Q's. and W.A.I.S. Full I.Q's. for the total group, and for each legal category.

	W.A.I.S. Full Scale I.Q.					
	Total Group (N=341)	M.I. (N=18)	P.D. (N=99)	S. (N=140)	S.S. (N=56)	Dual (N=28)
Doppelt I.Q.	+ .963**	+ .965**	+ .941**	+ .988**	+ .931**	+ .958**
t tests =	65.60	4.656	27.38	75.28	18.70	17.00

** significant at $<.01$.

M.I.=Mental Illness; P.D.=Psychopathic Disorder; S=Subnormality; S.S.=Severe Subnormality; Dual=Dual Classification (e.g. P.D. & S.).

References:

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