

# Comparative Scores on Two Intelligence Tests with Mentally Retarded Children

NINA L. R. GERSHLOWITZ, SARAH SCHRIRE

## SUMMARY

The intelligence of 25 White institutionalised mentally retarded children was assessed on the Old South African Individual Scale and on the Merrill Palmer Scale. These two tests have a verbal and a non-verbal bias respectively. No significant difference was found between means of the two tests for the sample. A significant correlation was found between the two sets of scores. This suggests an even distribution of verbal and non-verbal abilities in institutionalised retarded children.

*S. Afr. Med. J.*, 48, 1923 (1974).

Research into the intelligence of mentally retarded adults has shown that non-verbal abilities are usually better developed than verbal abilities.<sup>1</sup> Although these studies have been limited to Wechsler-type tests and to retarded adults, it would not be unreasonable to assume that the same applies to mentally retarded children, and when other intelligence tests are used.

In normal children, the development of non-verbal intelligence precedes that of verbal intelligence. Since the latter involves a process of abstraction<sup>2</sup> and is therefore more complicated, it is to be expected that non-verbal abilities will be better developed in retarded children as well. It has been found that this pattern is accentuated when the children are institutionalised.<sup>3</sup>

The present report is based on research into the distribution of verbal and non-verbal abilities in an institutionalised group of mentally retarded children. Use has been made of two intelligence tests, the Old South African Individual Scale (OSAIS)<sup>4</sup> and the Merrill Palmer Scale.<sup>5</sup> The former has a verbal and the latter a non-verbal bias.

## SUBJECTS AND METHODS

### Subjects

Subjects comprised 25 White institutionalised mentally retarded children, all of whom were attending the special school on the premises of the institution. The chronological age distribution was mean 11,81 years, SD 3,13.

#### Alexandra Institution, Maitland, Cape Town

NINA L. R. GERSHLOWITZ, B.SOC. SCI. HONS, *Psychology*

*Intern*  
SARAH SCHRIRE, B.A. HONS, *Psychology Intern*

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## Apparatus and Procedure

Over a period of two months, the OSAIS and the Merrill Palmer Scale were administered to each subject. The OSAIS is suitable for administration on persons between the chronological ages of 3 and 20 years. The Merrill Palmer Scale is suitable for administration on persons between the chronological ages of 18 months and 6 years 6 months.

Many of the subjects tested on the Merrill Palmer Scale were above the chronological age limit, since comparable tests suitable for their chronological age level proved to be too difficult for them. A mental age, and not a chronological age, of below 6 years 6 months was thus substituted as the age limit.

## Qualitative Differences Between Tests Used

Although both tests are designed to yield indices of general intellectual ability, they are qualitatively different. In the OSAIS 70% of the total number of items are verbal, whereas in the Merrill Palmer Scale 85% of the total number of items are non-verbal.

## RESULTS

Data obtained from the sample were subjected to statistical analysis. Using Student's *t*-test for dependent samples, no significant difference ( $t = 0,46$ ) between mean scores was obtained by subjects on the OSAIS (mean  $44,64 \pm 9,24$ ), and the Merrill Palmer Scale (mean  $44,04 \pm 9,07$ ).

The Pearson Product Moment Correlation Coefficient was calculated in order to determine whether there was a significant correlation between scores obtained by subjects on the OSAIS and the Merrill Palmer Scale, and  $r = 0,77$ , significant at 0,01 level was found.

## DISCUSSION

An examination of the results suggests that verbal and non-verbal abilities, as measured by the OSAIS and the Merrill Palmer Scale respectively, are evenly distributed in mentally retarded children of the age range 5-17 years. Since the IQ range of the sample was between 30 and 78 (the same on both tests), the above findings have applicability to all but the most severely retarded children.

Our results are at variance with those of the previous researchers mentioned earlier. For reasons outlined in the introduction, the fact that the present study has made use

of children and not adults is not felt to be operative in accounting for the discrepancy. A more plausible explanation emerges from an examination of the content of the two tests. The abilities stressed by the OSAIS, especially the numerous items relating to social judgement and skills, are those which are encouraged in the institutional setting from which the sample was drawn. On the other hand, the items on the Merrill Palmer Scale involve the manipulation of geometrical shapes and other abilities more foreign to the child in this specific institutional setting.

Two qualifications are necessary here. The one is that results different from those presented here could be obtained with a sample of non-institutionalised retarded children. The other is that a similar study on a sample from an institution which stresses different aspects of intellectual functioning could yield different results.

The implications of our results for future intellectual assessment of children from our specific institution would

seem to suggest that the two tests can be used interchangeably. However, this only applies if one is interested in a purely quantitative assessment of the child's intelligence. If qualitative features are required, it is felt that the Merrill Palmer Scale provides far more opportunity for the observation of abilities relevant to this type of assessment.

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