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Relation between some cognitive variables and some aspects of maladjustment in pre-school children

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The paper analyzes the relationships between maladjustment behaviour and cognitive functioning in children. The investigation covered 177 pre-school children, 102 boys and 75 girls. The average age was 6 years and 3 months. The following instruments were applied: Praper Maladjustment Symptoms Questionnaire, Goodenough Draw a Man Test, Bender Visual Motor Gestalt Test, Kohs Block Design Test and Wechsler Intelligence Scale for Children - verbal scale. Low, but relatively consistent negative correlations were found between total number of maladjustment symptoms and measures of verbal intelligence in the total sample. However, correlations were not significant in the female sample as well as for the non-verbal tests. The results, to a certain degree, justify the hypothesis about the integrative functioning of an individual's personality.

The theoretical and practical work of many psychologists has shown that there are relationships between intelligence and personality in a narrow sense, i.e., that the functioning of personality is integrative. General intelligence cannot be equated to intellectual capabilities alone but should be understood as an expression of integrative personality (Wechsler, 1950). Non-intellectual factors of intelligence, such as the ability to adapt and act appropriately, influence mental efficiency in real life situations. The most significant is the cumulative effect of the characteristics of personality on the level of intellectual performance. This relationship is reciprocal although it is not symmetrical (Anastasi, 1976).

Within Piaget's theory of development, other researchers have found that there are relations between various aspects of personality functioning - more emotionally stable and socially better adapted children are better in logical thinking operations (Marjanović, 1979). This effect on cognitive functioning increases as the child grows older (Curley and Pubis, 1978). The relationship between temperament and intelligence is most frequently examined. It has been found that the relations between various characteristics of temperament are not always the same for different ages and intellectual levels or even for the two sexes (Dreger 1968).

In the clinical research comparisons are made between children with problems in behavioral adaptation and non-problem children. It is most often found that children with problems tend to function on a lower cognitive level than their non-problem peers. A tendency has been observed shoving an increase of negative correlation with age of the child (Mavrin - Cavor, 1989). Tests of verbal intelligence correlate mostly with measures of maladjustment such as emotional immaturity and emotional problems of the child (Guerin and Gottfried, 1987). The correlations obtained range from low to medium values.

Based on the findings from the literature one can conclude that the relations between cognitive functioning and behavioral adjustment in children at an early developmental stage are not unambiguously established. Hence the problem presented to the researchers was as follows: to examine the nature of the relationships between certain forms of maladjustment and certain aspects of cognitive functioning in children in the year before starting school, and to determine whether sex has any influence on the relations between measures of maladjustment and cognitive measures.

METHOD

The research was carried out on a sample of 177 children, 102 boys and 75 girls, with average age of 6 years 3 months. All the children were attending kindergarten in five districts of Zagreb and were relatively uniform in terms of social status and family background. Children with serious physical defects or serious psychological problems, and children in the process of adaptation to kindergarten were excluded.

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Maladjusted behaviour was assessed using Praper's Maladjustment Symptoms Questionnaire for parents. The questionnaire consists of 39 elements (Praper, 1981). The maladjustment indicators extracted are: the total number of symptoms of maladjustment (TNSM), and the number of symptoms in three areas: physical symptoms (PHYSYM), specific habits in body orientation (SPECHAB) and emotional and behavioural disturbances (BEHDIS). Cognitive ability was tested using the Goodenough Draw a Man Test (GOOD, results expressed as the mental age of the child), the Bender Visual Motor Gestalt Test (LB, results in centiles), the Kohs Block Design Test (KOHS, results expresses as IQ) and Wechsler's Intelligence Scale for Children - verbal scale (WICV-V, results expressed as IQ) with all its subscales: information (INF), comprehension (COM), arithmetic (ART), similarities (SIM) and memory (MEM).

Sex was used as a control variable. Every child was examined individually under standard conditions, after which one of the parents filled in the Maladjustment Symptoms Questionnaire.

RESULTS AND DISCUSSION

For the purpose of the analysis relationships between the two sets of data - measures of maladjustment behaviour and achievement in cognitive variables - the correlations of the two sets of data for the entire sample are shown in Table 1.

Table 1 shows that correlations between the sets of data are very low, generally negative and insignificant. The total number of maladjustment symptoms has a low significant negative correlation with the results on WISC verbal scale while there is no significant correlation with the other cognitive measures. The total number of maladjustment symptoms correlates significantly negatively with the ART and SIM verbal subscales. Of the individual groups of symptoms, SPECHAB correlates significantly positively with the GOOD and BEHDIS significantly negatively with the COM subscale.

Summarising, the overall measure of maladjustment consistently shows low negative correlation with measures of verbal intelligence. The most important research findings in the literature on the relations between child's cognitive and personality sphere refer to verbal intelligence and language development. Thus, it was found that children already identified as having behavioural problems at the age of three showed reduced global and verbal intelligence at the age of nine and more difficulties in mental efficiency in school (Praper, 1981). Significant negative correlations were obtained between general developmental status, verbal expression and verbal comprehension on one hand, and emotional and social immaturity, hyperactivity, emotional and behavioral maladjustment of children on the other hand (Guerin and Gottfried, 1987).

Table 1

Intercorrelations of the measures of behavioral maladjustment and cognitive variables in the total sample (N=177)

Cognitive measures	Measures of behavioral maladjustment			
	TNSM	PHYSYM	SPECHAB	BEHDIS
GOOD	.058	-.035	.211**	.062
LB	-.084	-.078	.049	-.083
KOHS	-.126	-.091	.029	-.099
WISC - V	-.151*	-.141	-.009	-.109
INF	-.023	-.083	.024	-.055
COM	-.118	-.057	-.013	-.146*
ART	-.166*	-.124	-.047	-.118
SIM	-.152*	-.140	-.071	-.104
MEM	-.039	-.066	.036	-.019

*$p<.05$;

** $p<.01$

A negative relation between the appearance of emotional and behavioural disturbances (BEHDIS) and success in comprehension (COM) could indicate the difficulties of these children in social adaptation. Comprehension and adaptation to situations contribute significantly to this group of disturbances. Low positive correlation between success in drawing human figures and disturbances in the SPECHAB group is surprising. More successful children seem to be more susceptible to cultural pressure, they seem obedient and in some way endure more subjectively - the child has less freedom, it is restrained and therefore has a need to express its repressed impulses through various body-oriented habits such as thumb sucking or nail biting.

In spite of very low correlations, these findings suggest a need for increased attention to verbal abilities in the clinical treatment of pre-school children with adaptation problems. The literature indicates a general negative relation between behavioral problems and competence and suggests that competence in certain areas decreases the risk of psychopathological development (Cohen et al, 1988). Verbal cognitive abilities can be understood as a child's advantage in the process of adaptation.

In order to examine the influence of sex on the relation between measures of maladjustment and cognitive measures, correlations between the two sets of data were examined for boys and girls separately. No significant correlations were found in the sample of girls. Among boys, two correlations were significant: between the total number of maladjustment symptoms and the ART (r = -.203) and SIM (r = -.207) verbal subscales. Few authors have found that the relations between various aspects of functioning depend on the sex of the child. For example, greater stability against neuroticism among boys is related to greater intellectual achievement and better motor coordination, while among girls this relation is not significant (Ismail, 1976).

In comparison with other findings the results obtained in this research could be interpreted in terms of the fluid and crystallised intelligence of Horn and Cattell (1967, after Kvaščev, 1981). The WISC verbal scale measures crystallised intelligence and it is logical to expect verbal achievements to be more closely related to cultural or personal variables. No such relation has been found for the non-verbal tests, which are more a measure of fluid intelligence.

The correlations obtained in this research are very low and we have to be very careful with their interpretation. In spite of that, in practical work we cannot ignore maladjusted behaviour and cognitive deficiencies in early development of children. The treatment could aim at developing child's intellectual and social competence and the reduction of maladjusted behaviour. In the school teaching process it is necessary to consider the emotional needs of the child. Consideration of the overall effect of a child's personality will contribute to its enhanced competence, which is the ultimate goal of the developmental process.

CONCLUSION

This research, to a certain extent confirms earlier findings on the tendency towards low negative relation between cognitive functioning, especially verbal, and maladjusted behaviour of children. This relation is significant for boys and for the entire sample but it is not significant for girls. A few findings can be found in the literature on the sex differences within this area so the results point to the need for further research.

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