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ABSTRACT

This study compared the effectiveness of the recently-developed Early Screening Profiles (ESP) with the Kaufman Assessment Battery for Children (K-ABC), two screening tests designed to measure the cognitive, language, motor, and social development of preschool children. The tests were administered in counterbalanced order to a sample of 29 children between the ages of 3 and 6 by examiners trained in the administration of both tests. The study found that Pearson product moment correlations among scales purportedly measuring similar constructs were statistically significant and in the moderate to high range. The results indicate that the ESP and the K-ABC have substantial overlap and that the ESP can be effectively used as a preschool screening measure. (MDM)

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Abstract

Relationships between the K-ABC and the Early Screening Profiles (ESP) were examined with a sample of 29 preschool children (15 females and 14 males) ranging in age from 2 years, 11 months to 6 years, 0 months with a mean age of 5 years, 1 month. The sample was from rural/suburban communities in the midwest. Each child was evaluated with K-ABC and ESP administered in counterbalanced order by examiners trained in the administration of both instruments. The interval between tests averaged 12 days with a range of 2 to 34 days. The ESP is a nationally normed screening battery for children ages 2 years, 0 months through 6 years, 11 months and measures development in cognitive, language, motor and self-help/social areas. Pearson product moment correlations among scales purportedly measuring similar constructs were statistically significant and in the moderate to high range. The Cognitive Profile correlations with Mental Processing Composite, Achievement, and Global Intelligence Composite were .58, .72 and .67, respectively.

As preschool assessment has assumed greater emphasis, many new screening intruments have been developed. One example is the Early Screening Profiles (ESP: Harrison, 1990) a nationally normed screening battery for children ages 2 years, 0 months through 6 years, 11 months measuring cognitive, language, motor and self-help/social development. In addition to direct measures of skills in these areas, questionnaires are completed by parents, teachers and screening examiners. The battery produces Cognitive and Language Profiles consisting of four subtests (Verbal Concepts, Visual Discrimination, Logical Relations and Basic School Skills), a Motor Profile consisting of two subtests (Gross Motor and Fine Motor) and a Self-Help/Social Profile consisting of four domains (Communication, Daily Living Scale, Socialization and Motor). Separate scores for Expressive Language and Receptive Language Areas are determined from performance on receptive and expressive items of Verbal Concepts and Basic School Skills subtests. Standard scores (mean = 100, standard deviation = 15), national percentile ranks, and age equivalents can be obtained for each of the profiles and the cognitive and language subscales. Actual testing time ranges from 15 to 30 minutes. In addition, the parent and teacher questionnaires are completed in 10 to 15 minutes.

The Cognitive/Language subtests are administered from an easel-format. Sample items are used to communicate the task. The Visual Discrimination subtest involves the child pointing to pictures that match stimulus pictures. In Verbal Concepts the child points to pictures of objects named or described by the examiner. The Logical Relations subtest requires the child to point to pictures that correspond to stimulus pictures and to solve visual analogies. In Basic

School Skills the child answers questions about number and quantity concepts, and names and recognizes number, letters and words.

Items on the Gross Motor subtest assess the use of legs and arms for movement and coordination, while items on the Fine Motor subtest evaluate the use of hands and fingers for manipulating objects.

The standardization sample for the ESP was based on 1990 census estimates and stratified on the basis of sex, race or ethnic group, community size, region of the country, and parents' level of education. The sample consisteed of 1149 children with 76 to 172 children in each of 10 half-year groups between 2 years, 0 months and 6 years, 11 months of age.

Purpose of the Study

An important consideration in the validity of a new test is its relationship to established tests that measure similar skills. Since the ESP purports to measure cognitive abilities in preschool children, its relationship to other tets of cognitive abilities must be demonstrated. Therefore, the purpose of the present study was to compare the performance of a sample of preschool children on the ESP and the K-ABC.

Method

Subjects

The sample consisted of 29 children (15 females, 14 males) ranging in age from 2 years, 11 months to 6 years, 0 months with a mean age of 5 years, 1 month at initial testing. The sample was from rural/suburban communities in the midwest.

Procedure

Each child was evaluated with the ESP and Kaufman Assessment Battery for Children (K-ABC: Kaufman & Kaufman, 1983) by examiners trained in the administration of both tests. The tests were administered in counterbalanced order with 13 children receiving the K-ABC followed by the ESP and 16 children receiving the ESP followed by the K-ABC. Intervals between tests averaged 12 days with a range of 2 days to 34 days.

Results and Discussion

Mean scores with standard deviations in parentheses from the ESP were: Cognitive Profile = 104.35 (10.72): Language Profile = 105.07 (10.53): Expressive Language = 103.17 (9.77): Receptive Language = 104.21 (11.23) and from the K-ABC: Sequential Processing (SEQ) = 101.66 (10.57): Simultaneous Processing (SIM) = 109.07 (10.59): Mental Processing Composite (MPC) = 106.48 (9.35): Achievement (ACH) = 102.54 (10.96): Verbal Intelligence Composite (VIC: consisting of achievement subtests with the exception of Reading) = 103.75 (10.72): and Global Intelligence Composite (GIC: consisting of all subtests with the exception of Reading) = 105.18 (10.48). All mean scores are in the average range for the two tests. Means, standard deviations and ranges for subtests of both measures are presented in Table 2.

In order to compare the two tests with each other, Pearson product moment correlations were computed. Global scale correlations are presented in Table 3. The most meaningful comparisons are among the scales purportedly measuring similar skills. These include Cognitive Profile with MPC ($r = .58$, $p < .001$), ACH ($r = .72$ $p < .001$). VIC ($r = .69$. $p < .001$) and GIC ($r = .67$. $p < .001$): Language Profile with MPC

(r = .53, p < .01), ACH (r = .75, p < .001). VIC (r = .72. p < .001) and GIC (r = .68. p < .001); Expressive Language with MPC (r = .41, p < .05). ACH (r = .70, p < .001), VIC (r = .65, p < .001) and GIC (r = .57. p < .001); and Receptive Language with MPC (r = .45, p < .01). ACH (r = .68, p < .001), VIC (r = .63, p < .001) and GIC (r = .59, p < .001). All correlations are in the moderate to high range and indicate substantial overlap in the constructs measured by the two tests.

The highest correlations are between ESP global scales and the ACH scale of the K-ABC. These correlations are consistently higher than comparisons made with the MPC scale. This is consistent with the nonverbal orientation of the MPC and the emphasis on language development and readiness skills by the ESP. Thus the ESP appears to be measuring academic and verbal reasoning skills. Measurement of these skills is frequently emphasized with screening instruments.

Pearson product moment correlations were also computed for subtests of both measures. Subtest correlations are presented in table 4. The highest correlations for Verbal Concepts are with Expressive Vocabulary and Riddles (.72 and .71, respectively). The most significant correlations for Visual Discrimination are with Reading/Decoding (.60) and Arithmetic (.50). The highest correlations for Logical Relations are with Expressive Vocabulary (.68) and Faces & Places (.60). The highest correlations for Basic School Skills are with Reading/Decoding (.91) and Arithmetic (.74). Subtest correlations indicate a high degree of similarity between the ESP subtests and the Achievement subtests from the K-ABC. These correlations also reflect the emphasis of the ESP as measuring language development and readiness skills.

A series of t-tests for related samples were conducted to determine whether significant differences existed between global scales

purportedly measuring similar constructs. These include Cognitive with MPC.ACH and GIC. as well as Language with ACH and VIC. No significant differences ($p < .01$) were found. These results also indicate substantial overlap in constructs being measured by the two tests.

In conclusion. the ESP demonstrates adequate validity using the K-ABC as a criterion measure. There is substantial overlap in constructs being measured by both tests. The current study lends support to the use of the ESP as a screening measure for preschool children.

References

Harrison, P. (1990). AGS Early Screening Profiles. Circle Pines, MN: American Guidance Service.

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Table 1

Means, standard deviations and minimum - maximum values for global scales.

Scale	Mean	Standard Deviation	Min - Max
ESP			
Expressive	103.17	9.77	82 - 126
Receptive	104.21	11.23	80 - 124
Language	105.07	10.53	82 - 130
Cognitive	104.35	10.72	78 - 127
K ABC			
Sequential	101.66	10.57	85 - 131
Simultaneous	109.07	10.59	88 - 127
Mental Processing Composite	106.48	9.35	93 - 129
Achievement	102.54	10.96	82 - 132
Verbal Intelligence Composite	103.75	10.72	83 - 131
Global Intelligence Composite	105.18	10.49	89 - 134

Table 2

Means, standard deviations and minimum - maximum values for subtests.

Scale	Mean	Standard Deviation	Min - Max
ESP			
Verbal Concepts	107.62	11.54	83 - 133
Visual Discrimination	101.52	10.22	82 - 124
Logical Relations	102.45	13.47	76 - 128
Basic School Skills	101.83	9.86	85 - 119
K ABC			
Magic Window	11.18	1.78	9 - 14
Face Recognition	11.09	1.97	7 - 13
Hand Movements	9.69	2.25	6 - 14
Gestalt Closure	11.14	2.62	4 - 16
Number Recall	11.14	2.28	6 - 17
Triangles	11.32	2.48	7 - 17
Word Order	9.92	2.04	7 - 15
Matrix Analogies	10.94	1.51	8 - 13
Spatial Memory	12.50	1.79	8 - 16
Photo Series*	-	-	-
Expressive Vocabulary	102.64	13.19	83 - 127
Faces & Places	105.62	12.25	81 - 131
Arithmetic	99.11	9.88	82 - 126
Riddles	105.96	9.49	86 - 124
Reading/Decoding	98.58	12.16	78 - 118

* - Photo series was only administered to one subject.

Table 3

Correlations (Global)

	Seq	Sim	MPC	ACH	VIC	GIC
Cog	.32***	.57*	.58*	.72*	.69*	.67*
Lang	.40***	.44**	.53**	.75*	.72*	.68*
Expressive	.43**	.23	.41***	.70*	.65*	.57*
Receptive	.31	.40***	.45**	.69*	.63*	.59*

* $p < .001$

** $p < .01$

*** $p < .05$

Table 4

Correlations (Subtests)

	Verbal Concepts	Visual Discrimination	Logical Relations	Basic School Skills
Magic Window	.06	.11	.18	-.23
Face Recognition	.50	.60***	.58***	.46
Hand Movements	.18	.28	.03	.25
Gestalt Closure	.53**	.18	.43***	.21
Number Recall	.06	.11	-.27	.29
Triangles	.49**	.22	.36***	-.20
Word Order	.29	.42***	-.07	.34***
Matrix Analogies	.17	.35	.28	.06
Spatial Memory	-.03	.20	-.23	.15
Expressive Vocabulary	.72**	.17	.68***	.29
Faces & Places	.70*	.07	.60*	.14
Arithmetic	.45**	.50**	.18	.74*
Riddles	.71*	.28	.43***	.40***
Reading/Decoding	.43***	.60**	-.03	.91*

* $p < .001$

** $p < .01$

*** $p < .05$