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Prevalence of Low Scores on the WISC-IV-HR: Are the Low Scores Always a Reason for Concern?

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Abstract: The fourth edition of the Wechsler Intelligence Scale for Children (WISC-IV) was published in 2003. and it quickly became one of the world's most used measures of intelligence for children and adolescents. Adaptation and standardization for the Croatian language, in 2009, made this test available for experts to assess the level of intelligence of children in Croatia, but for the interpretation of individual achievement to be accurate, there is a need to consider the overall prevalence of low subtest and Index scores in healthy children. Understanding the prevalence of obtaining low scores on a particular test battery provides an estimate of the probability that a specific result obtained by the clinician is clinically significant and unusual for the normative population. The aim of the study was to examine the prevalence of low scores on the WISC-IV-HR subtests and Indexes in overall Croatian standardization sample and depending on child's intelligence level.

The study included 1200 children and adolescents aged between 6 years 0 months and 16 years 11 months. The results show that even when considering a cut-off more than 2 *SD* below the mean, 1 out of 5 children obtains at least one low WISC-IV subtest score. The prevalence of low Index scores is smaller but still should not be ignored while interpreting test results. Also important to keep in mind is that those results cannot be explained only by the overall level of child's intelligence since even using the most rigorous cut-off value, around 1 out of 10 children with average or higher intelligence level will obtain low subtest scores and around 3% of them will have one low Index score.

Key words: intelligence, Croatian adaptation, WISC-IV, low scores

Views of the structure of intelligence have differed over the years, from models that considered it a unitary construct, i.e., overall cognitive ability (g factor) to models of intelligence as a multifactor variety of abilities (e.g., Thurstone, 1938; Guilford, 1967). The most recent theory is the one of Cattell-Horn-Carroll (CHC) theory of cognitive abilities (Schneider & McGrew, 2018). The basic idea of CHC theory is that intelligence is both multidimensional and functionally integrated. In CHC theory, the dimensions of ability have a hierarchical structure, meaning that some have a broader scope than others. At the bottom of

the hierarchy are specific abilities, which are tied to a specific task or test, and at the top are broad abilities which represent clusters of narrow abilities that are jointly more correlated with each and not with abilities in other broad-ability clusters.

Although those multiple-factor proponents may or may not acknowledge **g** as a measure of global cognitive ability, they emphasize the importance of a variety of abilities in explaining cognitive functioning (Fiorello et al., 2002). Today there are numerous available intelligence tests worldwide that are useful for assessing child intelligence and have appropriate quantitative and qualitative characteristics, but the Wechsler tests are still one of the most widely used tests of intelligence. The fourth edition of the Wechsler Intelligence Scale for Children (WISC-IV) was published in 2003. and it quickly became one of the world's most used measures of intelligence for children and adolescents (WISC-IV; Wechsler, 2003). Six years later, it was standardized and published in the Republic of Croatia (Wechsler, 2009). With that publication, clinicians and school psychologists were given the opportunity to assess in detail the intelligence of children and to compare it with national norms. In addition to clinical use, the WISC-IV-HR also provided psychologists with the opportunity to use it for research purposes and to advance their knowledge and ability to diagnose and interpret test results. This also opened new questions and discussions among users about the ways of interpreting low scores on intelligence measurements.

As Crawford et al. (2007) state, when using a single intelligence test, usually the criteria are that the results below the 5th percentile are abnormally low and that only 5% of the population is expected to achieve such a score. However, authors also state that for neuropsychological assessment, single tests are rarely used. Rather, in such assessments, batteries of tests are commonly used. As Kaufman (1976a; 1976b) reports, there is a significant amount of test-score "scatter" among the results on test batteries. That is why it is important to know what percentage of healthy individuals with low scores can be "normally" expected on such assessments. Understanding the frequency of low scores and scattering between the highest and lowest results on a particular battery provides an estimate of the probability that a specific result obtained in assessment is clinically significant and unusual for the normative population.

Specifically for the WISC, only a few studies examined the variability in test results of healthy children and adolescents (e. g. Brooks, 2010; Brooks, 2011). Kaufman (1976b) examined the scattering of results for the WISC-R and stated that there is an average of 7 scaled-score points (i.e. 2.3 standard deviations) between the lowest and highest subtest scores children achieved, and that scatter is not related to demographic characteristics such as age, sex, socioeconomic status and level of intelligence. This is also true for the WISC-IV, so it is common to have a healthy child with the lowest scale score that falls below the level indicative for cognitive impairment (see Brooks, 2010). If a clinician is interpreting one low score, there is a chance he will consider that low score an indicator of a child being at risk for cognitive impairment, when in fact chances of a healthy child obtaining such a score are greater than expected. For example, as Brooks (2010) noted, when a single test is used, the probability of obtaining a score equal or lower than the 5th percentile is 5%, but considering the entire battery (for example see Children Memory Scale, CMS; Cohen, 1997) there is a 20% probability of obtaining that score. This principle has also been demonstrated in research on some other test batteries (Grégoire, 2005; Brooks et al., 2009; Grégoire et al., 2011;al., 2011; Hurks et al., 2013. This is

important to keep in mind when interpreting performance on a battery of tests such as the WISC-IV, so research data on the prevalence of low scores in healthy children and adolescents can reduce the chances of misdiagnosing cognitive impairment.

To the best of our knowledge, so far the base rates of low scores for the WISC-IV are reported for American and Canadian normative samples (Brooks, 2010; Brooks, 2011). The aim of this study was to do the same for Croatian children and adolescents assessed in the process of the standardization of the WISC-IV-HR. Therefore, the aim of this study was to examine the variability of scale scores and the prevalence of low and extremely low scores on the WISC-IV-HR subtests and Indexes in the overall Croatian standardization sample and depending on the child's intelligence level.

METHOD

Participants

The study included the Croatian standardization sample of 1200 children aged between 6 years 0 months and 16 years 11 months (608 boys, 592 girls). The sample was stratified by age, sex and county according to the Croatian population Census. Parents signed the informed consent form for all participants and all participants were free to terminate participation at any moment.

PROCEDURE

The WISC-IV is a battery of tests designed for assessing child and adolescent intellectual abilities which has 10 core and 5 supplemental subtests that are combined on four Index scores and Full scale IQ score (list of subtests and Indexes in Table 1).

Assessments were conducted by trained school psychologists. The test was administered individually, in one or two test sessions, depending on the examinees needs and lasted 60 to 90 minutes per child. Administration of all subtests was conducted by the directions given in the test Manual (Wechsler, 2009).

Range of possible raw scores varies between subtests so conversion on standard scores was made. Standard scores used have a mean of 10 and a standard deviation of 3 indicating that scores 10+/-3 represent average scores. Results on each of the 10 core subtests were converted to standard scores and cut-off scores were used to determine whether a single subtest score can be considered as low or

Table 1. Core and supplemental subtests and Index scores of WISC-IV

	Index			
	Verbal Comprehension	Perceptual Organization	Working Memory	Processing Speed
Subtest	Similarities	Block design	Digit Span	Coding
	Vocabulary	Picture Concepts	Letter-Number	Symbol Search
	Comprehension	Matrix Reasoning	Sequencing	
	Information	*Picture Completion*	*Arithmetic*	*Cancellation*
	Word Reasoning			

Note. Supplemental subtests are shown in italic

extremely low. Cut-off scores are derived as in Brooks (2010) and are as follows: ≤25th percentile (below standard score 8), ≤16th percentile (below standard score 7), ≤9th percentile (below standard score 6), ≤5th percentile (below standard score 5) and ≤2nd percentile (below standard score 4). Prevalence of low scores in the overall sample were extracted, as well as the prevalence for different levels of intelligence of examinees. In this study, only results on 10 core subtest and four Indexes are presented (results on 5 supplemental subtests are not presented).

Scores on core subtests are combined in Index scores and Full scale IQ, ranging from 40 to 160 scaled score for Full Scale IQ, from 45 to 155 for Verbal Comprehension Index and Perceptual Reasoning Index, and from 50 to 150 for the Working Memory Index and Perceptual Speed Index. Levels of intelligence were determined on the basis of Full Scale IQ score and divided as in Flannagan and Kaufman (2012), as follows: very low (FSIQ < 80), below average (FSIQ 80-89), lower average (FSIQ 90-99), upper average (FSIQ 100-109), above average (FSIQ 110-119) and very high (FSIQ 120+).

RESULTS

Scores on core subtests were examined on the basis of their prevalence in the overall sample, using defined cut-off scores. The same is done for Index scores. Those results are presented in Table 2. The numbers in the table represent percentages of children and adolescents with 1 or more low scores (out of 10 scores on core WISC-IV subtests), 2 or more low scores etc., as well as number of low Index scores.

In the total sample (N = 1200 participants), when using the ≤25th percentile as

Table 2. Base rates of low subtest scores and low Index scores for different cut-off criteria in total sample (N = 1200)

Number of low subtest scores	≤ 25. percentile	≤ 16. percentile	≤ 9. percentile	≤ 5. percentile	≤ 2. percentile
10	0.7	0.2	0.2	-	-
9 or more	3.0	0.9	0.2	-	-
8 or more	6.2	2.4	1.2	0.2	0.2
7 or more	11.1	5.3	1.6	0.8	0.3
6 or more	17.5	8.2	3.3	1.4	0.6
5 or more	26.2	13.6	5.2	2.2	1.0
4 or more	37.5	20.6	9.2	3.7	1.9
3 or more	50.2	31.2	16.3	7.8	3.2
2 or more	65.7	46.8	28.6	16.6	7.3
1 or more	83.4	68.9	50.0	34.7	22.0
No low scores	16.6	31.1	50.0	65.3	78.0
Number of low Index scores					
4	3.2	1.2	0.3	0.1	-
3 or more	12.6	6.0	2.8	1.2	0.4
2 or more	28.0	15.2	7.6	4.2	1.7
1 or more	53.1	35.9	25.0	14.9	7.2
No low scores	46.9	64.1	75.0	85.1	92.8

the cut-off value, 83.4% of healthy children and adolescents had one or more low subtest scores, while 0.7% had all 10 scores low. This means that in only 16.6% of children tested no low scores (scores beneath the 25th percentile) were found. When looking at Index scores, 53.1% of children had 1 or more low Index scores while 3.2% had all four Index scores low. As expected, those percentages are smaller when using a more rigorous cut-off value (for example ≤16th or ≤9th percentile).

When using ≤5th percentile as the cut-off value (value which is often used in single-test evaluations), 34.7% had one or more low subtest scores and 0.2% had 8 low scores (none had 9 or 10 low subtest scores). Index scores on this cut-off value show that 14.9% of children had one low Index score and 0.1% had all four Index scores low.

Results also show that, even when using a cut-off score of more than 2 *SD* below the mean (≤ 2nd percentile), 22% of children and adolescents had at least one low subtest score and 7.2% had one or more low Index scores. This indicates that 1 out of 5 healthy children tested had at least one low subtest score, even when extremely rigorous cut-off value of ≤2nd percentile was used. This information should not be ignored while interpreting results of a specific child.

Results were also analyzed according to the overall level of intelligence of children tested (indicated by FSIQ result). As explained in the Procedure section, children tested were divided by FSIQ in 6 categories and percentages of low subtest scores for different cut-off points are shown in Table 3.

Results show that frequency of extremely low scores is decreased with higher levels of FSIQ. When using the ≤25th percentile as the cut-off value, all the examinees categorized as FSIQ very low (<80) had at least one low subtest score, as opposed to 16.9% of examinees in the group with very high FSIQ. As expected, reported percentages are smaller when more rigorous cut-off scores were used. When using the ≤9th percentile as a cut-off score, 100% of children with very low level of intelligence (FSIQ <80) had one or more low subtest score, while the percentage was 67.0%

Table 3. Base rates of low subtest scores by result on FSIQ

Number of low subtest scores	FSIQ very low (<80)[a]	FSIQ below average (80-89)[b]	FSIQ lower average (90-99)[c]	FSIQ upper average (100-109)[d]	FSIQ above average (110-119)[e]	FSIQ very high (120+)[f]
≤ 25. percentile						
10	7.6	-	-	-	-	-
9 or more	34.3	-	-	-	-	-
8 or more	65.7	3.1	-	-	-	-
7 or more	96.2	16.8	-	-	-	-
6 or more	99.0	51.3	2.7	-	-	-
5 or more	100.0	84.3	15.8	0.3	-	-
4 or more	100.0	98.4	49.5	3.3	-	-
3 or more	100.0	100.0	82.2	19.7	1.4	-
2 or more	100.0	100.0	97.3	57.2	13.6	1.1
1 or more	100.0	100.0	100.0	91.8	53.3	16.9
No low scores	-	-	-	8.2	46.7	83.1

≤ 16. percentile						
10	1.9	-	-	-	-	-
9 or more	10.5	-	-	-	-	-
8 or more	27.6	-	-	-	-	-
7 or more	56.2	2.6	-	-	-	-
6 or more	76.2	9.9	-	-	-	-
5 or more	96.2	32.5	-	-	-	-
4 or more	99.0	63.9	7.1	-	-	-
3 or more	99.0	88.5	31.6	2.0	0.5	-
2 or more	100.0	99.0	69.4	17.8	3.7	-
1 or more	100.0	100.0	93.6	60.5	31.3	2.2
No low scores	-	-	6.4	39.5	68.7	97.8
≤ 9. percentile						
10	1.9	-	-	-	-	-
9 or more	2.9	-	-	-	-	-
8 or more	13.3	-	-	-	-	-
7 or more	18.1	-	-	-	-	-
6 or more	38.1	-	-	-	-	-
5 or more	56.2	2.1	-	-	-	-
4 or more	81.0	12.6	0.3	-	-	-
3 or more	95.2	42.4	5.1	-	-	-
2 or more	100.0	78.0	26.9	2.6	0.5	-
1 or more	100.0	94.2	67.0	28.3	13.6	1.1
No low scores	-	5.8	33.0	71.7	86.4	98.9
≤ 5. percentile						
10	-	-	-	-	-	-
9 or more	-	-	-	-	-	-
8 or more	2.9	-	-	-	-	-
7 or more	9.5	-	-	-	-	-
6 or more	16.2	-	-	-	-	-
5 or more	25.7	-	-	-	-	-
4 or more	40.0	1.6	-	-	-	-
3 or more	68.6	10.5	0.7	-	-	-
2 or more	88.6	40.8	8.8	0.7	-	-
1 or more	97.1	81.7	37.7	12.8	3.7	-
No low scores	2.9	18.3	62.3	87.2	96.3	100.0
≤ 2. percentile						
10	-	-	-	-	-	-
9 or more	-	-	-	-	-	-
8 or more	1.9	-	-	-	-	-
7 or more	3.8	-	-	-	-	-
6 or more	6.7	-	-	-	-	-
5 or more	11.4	-	-	-	-	-
4 or more	21.9	-	-	-	-	-
3 or more	34.3	1.0	-	-	-	-
2 or more	59.0	11.5	2.3	-	-	-
1 or more	87.6	51.3	17.5	6.2	1.4	-
No low scores	12.4	48.7	82.5	93.8	98.6	100.0

Note. [a] $N=105$. [b] $N=191$. [c] $N=297$. [d] $N=304$. [e] $N=214$. [f] $N=89$.

for those with lower average level of intelligence (FSIQ 90-99) and 1.1% in a group with very high intelligence (FSIQ 120+).

Importantly, even with the most rigorous cut-off value of ≤2nd percentile, there is still 87.6% of those with very low FSIQ and 1.4% with above average (FSIQ 110-119) that have at least one low subtest score on WISC-IV-HR.

Results for prevalence of low scores among Index scores, depending on the level of intelligence and used cut-off score are presented in Table 4.

As expected, the frequency of low Index scores is decreased with higher level of child intelligence (FSIQ score), as is the case for subtests scores. When using the ≤25th percentile as the cut-off value, all the examinees

Table 4. Base rates of low Index scores by level of FSIQ

Number of low subtest scores	FSIQ very low (<80)[a]	FSIQ below average (80-89)[b]	FSIQ lower average (90-99)[c]	FSIQ upper average (100-109)[d]	FSIQ above average (110-119)[e]	FSIQ very high (120+)[f]
≤ 25. percentile						
4 or more	36.2	0.5	-	-	-	-
3 or more	91.4	28.3	0.3	-	-	-
2 or more	100.0	80.1	24.9	2.3	-	-
1 or more	100.0	100.0	80.5	27.6	7.9	1.1
No low scores	-	-	19.5	72.4	92.1	98.9
≤ 16. percentile						
4	14.3	-	-	-	-	-
3 or more	61.9	3.7	-	-	-	-
2 or more	96.2	38.2	3.0	-	-	-
1 or more	100.0	89.0	40.4	10.2	2.3	-
No low scores	-	11.0	59.6	89.8	97.7	100.0
≤ 9. percentile						
4	3.8	-	-	-	-	-
3 or more	32.4	-	-	-	-	-
2 or more	72.4	7.9	-	-	-	-
1 or more	100.0	64.4	20.9	3.0	0.5	-
No low scores	-	35.6	79.1	97.0	99.5	100.0
≤ 5. percentile						
4	1.0	-	-	-	-	-
3 or more	13.3	-	-	-	-	-
2 or more	45.7	1.0	-	-	-	-
1 or more	81.0	34.0	7.7	2.0	-	-
No low scores	19.0	66.0	92.3	98.0	100.0	100.0
≤ 2. percentile						
4	-	-	-	-	-	-
3 or more	4.8	-	-	-	-	-
2 or more	20.0	-	-	-	-	-
1 or more	53.3	9.9	3.0	0.7	-	-
No low scores	46.7	90.1	97.0	99.3	100.0	100.0

Note. [a] *N*=105. [b] *N*=191. [c] *N*=297. [d] *N*=304. [e] *N*=214. [f] *N*=89.

categorized as FSIQ very low (<80) had at least one low Index score, as opposed to 1.1% of examinees with very high FSIQ (120+). As expected, when using the ≤9th percentile as a cut-off score, percentages are smaller in most groups, but still 100% of children with very low level of intelligence (FSIQ <80) have one or more low Index score. Meanwhile, no children with very high FSIQ had low Index scores and only 0.5% of those with above average FSIQ score. As with subtests scores, even using the most rigorous cut-off value of ≤2nd percentile, there is still 53.3% of those with very low FSIQ and 9.9% with below average FSIQ that have at least one low Index score.

DISCUSSION

The aim of this study was to illustrate base rates of low scores on 10 core subtests and four Indexes of the WISC-IV-HR in the Croatian standardization sample. Results show that prevalence of low scores among healthy children, even when using strict and rigorous cut-off scores, is not to be ignored. Results show that frequencies of extremely low scores on some WISC-IV-HR subtests are related to the lower total IQ score (FSIQ), a finding which is in consistent with previous studies (e. g. Brooks, 2010). As the results show, even when using a cut-off score of more than 2*SD* below average, a certain percent of healthy children tested obtain one or more low subtest or Index scores, even among the group of children with an average or above average level of intelligence. That percentage is greater in children with very low FSIQ, which is understandable given the purpose of the test as a measure of intelligence. In other words, even when considering a cut-off more than 2*SD* below the mean, 1 out of 5 children had at least one low WISC-IV subtest score. In the context of evaluation of a child's ability, clinicians should consider that even a healthy child can achieve scores indicative of cognitive impairment on some subtests.

As stated, prevalence of low scores increases in groups with a below average level of intelligence, so children with below average intelligence are more likely than children with above average intelligence to obtain at least one low score on WISC-IV-HR. Of course, these results are under the influence of the fact that low subtest scores contribute to lower overall intelligence scores, thus the percentage of low FSIQ is dependent on the number of low subtest and Index score. However, especially important to note is that, even with rigorous cut-off points, more than 15% of children with average level of intelligence or higher will obtain one low subtest score and 3% of them will have one low Index score. In another words, even while testing children with an average level of intelligence or higher, there is still a considerable chance of obtaining low subtest or Index scores. If clinicians are not careful with interpretations and do not consider this prevalence, they could easily make incorrect conclusions about the child's abilities.

The need for caution when interpreting multiple scores, especially to avoid type 1 errors, has been discussed in other studies (e.g. Naglieri and Paolitto, 2005). This data can help clinicians in their interpretation of results by pointing out that often interpreting one low score as being indicative of cognitive impairment can lead to misdiagnoses, because prevalence rates of low scores are not zero in healthy children and adolescents, especially those with lower level of intelligence. Accordingly, having one or more low Index scores or subtest scores is not necessarily unusual. As Crawford et al. (2007) indicate, more than one quarter of healthy children and adolescents are expected to have at least one Index

score below the 9th percentile. This finding is confirmed in the current study on the Croatian sample so results suggest that the chances for obtaining indicatively low score on some WISC-IV subtest is greater than the commonly used 5% in single test and that should be kept in mind while interpreting results of intelligence testing.

Results presented in the paper show that prevalence of obtaining one or more low scores on the WISC-IV-HR isn't negligible. This notion can be helpful for psychologist to determine whether the scores obtained in the assessment of a child's ability reflect consequences of an illness or injury or whether they are a result of some other factors. These results should not be used for diagnostic purposes but rather as information about whether the low scores of a tested child or adolescent are atypical in healthy children and adolescents, and to what extent.

Although having one or more low scores on subtests or Indexes might not necessarily be an uncommon finding in healthy children and adolescents, it can still reflect a relative weakness of a particular child and have an influence on his cognitive functioning, everyday life and potential treatments.

Limitations of the current study need to be mentioned. It is important to note that in this kind of base rates calculations, all scores have the same psychometric weight but, as Brooks (2010) points out, not all subtests are equally sensitive for cognitive impairment in clinical samples. Having this in mind, further research is needed in clinical samples for the purpose of developing guidelines for identifying cognitive impairments that are based on psychometric data. Also, when examining children with a neurological illness or injury, their level of intelligence could be inaccurately measured because of the illness, so those base rates should be used with caution and it should be considered if there is any cognitive impairment secondary to an illness or injury.

Also, it should be noted that data presented in this paper is obtained in the context of applying only WISC-IV-HR, not other tests. Since the WISC is often used in combination with other tests, that usage will probably increase the likelihood of obtaining low scores. Also, only 10 core subtests results are presented in this paper so rates reported shouldn't be used when applying supplemental subtests. Further analysis of results can be made, as proposed by Flanagan and Kaufman (2012). One example is an identification of Index scores with a statistically significant difference from the average Index score. Such an analysis was used in research by Grégoir et al. (2011) and results for WAIS-IV show that variability in results at the composite score level is relatively frequent in the general population (more than 70% of individuals in the normative sample have at least one Index score that differs significantly from their mean index score). It could be useful to analyze those discrepancies on WISC-IV results, also.

CONCLUSION

Analysis of the prevalence of low WISC-IV-HR subtests and Index scores shows that obtaining one or more low scores is not such an uncommon result. Even with a cut-off more than 2*SD* below the mean, 1 out of 5 children obtains at least one low WISC-IV subtest score and interpreting only that score can lead to misdiagnosis. Prevalence of low Index scores is smaller than on the subtest level but still should not be ignored as well as keeping in mind that low scores can be found even in the group of children with average or higher intelligence level.

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Prevalencija niskih rezultata na WISC-u-IV-HR: Jesu li niski rezultati uvijek razlog za zabrinutost?

Sažetak: Četvrto izdanje Wechslerova testa inteligencije za djecu (WISC-IV), objavljeno 2003. godine, vrlo brzo je postalo jedna od najčešće korištenih mjera inteligencije za djecu i adolescente. Adaptacijom i standardizacijom na hrvatski jezik, 2009. godine, ovaj test je postao dostupan stručnjacima u Hrvatskoj za procjenu razine inteligencije djece, no kako bi interpretacija individualnih postignuća bila točna, potrebno je razmotriti ukupnu prevalenciju pojave niskih rezultata na subtestovima i indeksima kod zdrave djece. Razumijevanje prevalencije dobivanja niskih rezultata na određenoj testnoj bateriji omogućava procjenu vjerojatnosti da je određeni rezultat klinički značajan i neuobičajen u normativnom uzorku. Cilj istraživanja bio je ispitati prevalenciju niskih rezultata na WISC-IV-HR subtestovima i indeksima u ukupnom uzorku na kojem je provedena hrvatska standardizacija i ovisno o razini inteligencije djeteta. Istraživanje je uključivalo 1200 djece i adolescenata u dobi od 6 godina i 0 mjeseci i 16 godina i 11 mjeseci. Rezultati pokazuju da, čak i kad se razmatra granična vrijednost veća od 2 *SD* ispod aritmetičke sredine, jedno od petero djece postiže nizak rezultat na barem jednom WISC-IV subtestu. Prevalencija niskih rezultata na indeksima je manja, ali svejedno ju se ne smije zanemariti tijekom tumačenja rezultata. Također je važno imati na umu da se pojava takvih rezultata ne može objasniti samo ukupnom razinom djetetove inteligencije, jer čak i kad se koristi najstroža granična vrijednost, otprilike jedno od desetero djece s prosječnom ili višom razinom inteligencije postiže niske rezultate na pojedinom subtestu, a oko 3% djece postiže jedan nizak rezultat na indeksu.

Ključne riječi: inteligencija, WISC-IV, hrvatska adaptacija, niski rezultati

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