

Originalni naučni članak

RAZLIKE U BILATERALNOJ KOORDINACIJI IZMEĐU DEČAKA I DEVOJČICA PRVOG RAZREDA OSNOVNE ŠKOLE

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Apstrakt: Istraživanje je sprovedeno sa ciljem da se utvrde razlike u bilateralnoj koordinaciji između dečaka i devojčica prvog razreda osnovne škole. Uzorak je činilo 30 učenika prvog razreda osnovne škole, odnosno deca uzrasta od sedam godina \pm šest meseci. Deca su podeljena u dve grupe na dečake (14) i devojčice (16). Nivo bilateralne koordinacije kod dece procenjen je primenom podtesta Bilateralna koordinacija (sedam varijabli) koji su deo baterije motoričkih testova BOT-2 - the Bruininks-Oseretsky test of Motor Proficiency. Dati testovi se koriste kao standardizovana mera nivoa motoričkih sposobnosti kod dece. Dobijeni podaci obrađeni su u statističkom programu SPSS 19, a za utvrđivanje razlika u bilateralnoj koordinaciji korišćen je neparametrijski Mann-Whitney U test. Nakon obrade podataka uočeno je da postoje razlike u bilateralnoj koordinaciji između dečaka i devojčica,

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ali da one nisu statistički značajne. Za pouzdanije rezultate i samim tim potpunije zaključke, neophodno je izvršiti testiranja na većem uzorku dece.

Ključne reči: *koordinacija, bilateralna koordinacija, BOT-2 test, deca*

UVOD

Motorički razvoj deteta označen je kao jedno od važnih područja u njegovom sveobuhvatnom rastu i razvoju. Razvoj opšte motorike deteta podrazumeva istovremen razvoj fine i grube motorike. Fina motorika podrazumeva manipulativnu koordinaciju pri čemu se koriste manji mišići, dok nasuprot tome gruba motorika podrazumeva uključivanje velikih mišićnih grupa u različitim pokretima (Cairney, et al., 2005; Goodway, Ozmun & Gallahue, 2019). U radu sa decom podjednako bi trebalo razvijati i finu i grubu motoriku kroz časove škole sporta i fizičkog vaspitanja. Motorička koordinacija smatra se jednim od glavnih elemenata motoričkih sposobnosti dece, ali i njihovih kognitivnih sposobnosti i psiholoških osobina (da Silva, Gabbard, Ries & Bobbio, 2016; Goodway, Ozmun & Gallahue, 2019). Loša motorička koordinacija kod dece ne samo što ometa izvođenje određenog motoričkog zadatka, već može imati negativan uticaj na njihovo učestvovanje u fizičkim aktivnostima, uspeh u školi, kao i na socijalne odnose unutar grupe (Asonitou, Koutsouki, Kourtessis & Charitou, 2012; Cairney, Hay, Veldhuizen, Misiuna & Faught, 2010; Vandorpe, et al., 2011). Zato je veoma važno kod dece rano uočiti nepravilnosti u razvoju opšte motoričke koordinacije i otkloniti ih.

Bilateralna koordinacija odnosi se na sposobnost istovremenog korišćenja obe strane tela na kontrolisan način (Balakrishnan & Rao, 2007; Karambe, Dhote & Palekar, 2017; Rutkowska, et al., 2016; Uzunović, et al., 2018). Razvoj bilateralne koordinacije započinje u ranoj životnoj dobi deteta i predstavlja osnovu za dalji sveukupan motorički razvoj. Dobri rezultati na testovima bilateralne koordinacije ukazuju da kod ispitanika obe strane mozga deluju u sinergiji (Karambe, et al., 2017).

Studije koje su ispitivale motoričku koordinaciju dece, obuhvatile su decu osnovnoškolskog uzrasta. Najveći broj istraživanja obuhvatio je decu mlađeg osnovnoškolskog uzrasta (Cairney, et al., 2005; Cairney, et al., 2010; da Silva et al., 2016; Kaur, Srinivasan & Bhat, 2018; Vandorpe, et al., 2011), dok se nekoliko radova bavilo decom starijeg osnovnoškolskog uzrasta (da Silva, et al., 2016; Lopes, Stodden, Bianchi, Maia & Rodrigues 2012; Rutkowska, et al., 2016; Kaur, et al., 2018). Nivo motoričkih sposobnosti pozitivno je povezan s nivoom telesne aktivnosti i obrnuto povezan sa sedelačkim aktivnostima kod dece. Deca sa ostvarenim najboljim rezultatima u motoričkim testovima imala su najveći nivo fizičkih aktivnosti (Cairney, et al., 2005; Ca-

irney, et al., 2010; Goodway, Ozmun & Gallahue, 2019). Karambe i sar. (2017) su pokazali da sa rastom godina raste i rezultat u Bruininks-Osterecky testu koordinacije i kod dečaka i kod devojčica, što je i očekivano (Karambe, et al., 2017). Lopes, Santos, Pereira, & Lopes, (2013) i da Silva et al. (2016) su proučavali koordinaciju i njen odnos prema uspehu u školi. Generalno, utvrđeno je da postoji pozitivan odnos između testova grube motorike i uspeha u školi. Nijedna studija nije se bavila polnim razlikama dece ovog uzrasta, pa je upravo to cilj ovog istraživanja, da se ispitaju razlike u bilateralnoj koordinaciji između dečaka i devojčica prvog razreda osnovne škole.

METOD

Uzorak ispitanika

Uzorak ispitanika u ovom istraživanju činila su deca mlađeg osnovnoškolskog uzrasta, preciznije deca prvog razreda osnovne škole. U istraživanju je učestvovalo 30 ispitanika uzrasta sedam godina (\pm šest meseci) iz osnovne škole „Miroslav Antić“ iz Niša. Grupe su formirane prema polu, na dečake (n-14) i devojčice (n-16).

Uzorak varijabli

U ovu svrhu, za procenu bilateralne koordinacije uz pomoć Bruininks-Oseretsky testa (BOT-2), izvodi se sedam motoričkih zadataka, podstova:

1. *Dodirivanje nosa kažiprstom, zatvorenih očiju (Touching nose with index fingers - eyes closed)*
2. *Skokovi (Jumping jacks)*
3. *Skakanje u mestu – sinhronizovane iste strane (Jumping in place - same sides synchronized)*
4. *Skakanje u mestu – sinhronizovane suprotne strane (Jumping in place - opposite sides synchronized)*
5. *Okretanje palčeva i kažiprsta (Pivoting thumbs and index fingers)*
6. *Taping stopalima i prstima – sinhronizovane iste strane (Tapping feet and fingers - same sides synchronized)*
7. *Taping stopalima i prstima – sinhronizovane suprotne strane (Tapping feet and fingers - opposite sides synchronized)* (Bruininks, 2005)

Bruininks-Oseretsky test se koristi kao standardizovana mera nivoa motoričkih sposobnosti dece, pa tako i u ovom slučaju kada je potrebno ispitati bilateralnu koordinaciju kao motoričku sposobnost.

Obrada podataka

Obrada podataka izvršena je pomoću statističkog programa SPSS 19. Izračunati su osnovni parametri deskriptivne statistike: aritmetička sredina, standardna devijacija, raspon, minimalna i maksimalna vrednost. Nakon izvođenja Shapiro-Wilk testa normalnosti podataka, utvrđeno je značajno odstupanje od normalne distribucije podataka, što ukazuje da bi trebalo sprovesti neparametrijsku tehniku, u ovom slučaju Mann-Whitney U test. Ovaj test se koristio za utvrđivanje razlika u bilateralnoj koordinaciji između grupa dečaka i devojčica prvog razreda osnovne škole.

REZULTATI

Dobijeni rezultati sa testiranja bilateralne koordinacije dece prvobitno se konvertuju prema standardizovanim ocenama BOT-2 testova, za svaki test ponaosob. Date ocene se unose u tabelu i to predstavlja rezultate testiranja koji kasnije podležu obradi u statističkim programima. U Tabeli 1. prikazani su rezultati deskriptivne statistike za svih trideset ispitanih učenika.

Tabela 1. *Deskriptivna statistika*

	Range	Minimum	Maximum	Mean	Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Statistic
Godine	2	6	8	6.87	.43
Visina	18	117	135	126.67	4.60
Težina	18.5	21.3	39.8	27.12	4.48
BMI	7.80	14.70	22.50	17.02	2.19
1. test	3	1	4	3.37	.85
2. test	3	0	3	1.83	.91
3. test	3	0	3	2.90	.55
4. test	3	0	3	2.67	.84
5. test	3	0	3	1.87	1.28
6. test	1	3	4	3.93	.25
7. test	4	0	4	2.73	1.26

Iz Tabele 1. vidi se da je prosečna visina dece uzrasta prvog razreda 126,7 cm, prosečna telesna masa 27,1 kg i prosečne vrednosti BMI iznose 17,0. Posmatrajući minimalne i maksimalne vrednosti, uočljivo je da se visina kreće od 117 do 135 cm, telesna masa je u rasponu od 21,3kg do 39,8, dok BMI varira između 14,7 i 22,5. Trebalo bi napomenuti da su prvi, šesti i sedmi test ocenjeni od 0 do 4 boda, dok su ostali testovi vrednovani bodovima od 0 do 3. Deca su najbolje rezultate ostvarila u trećem i šestom testu, osvojivši 2.9 od 3 i 3.93 od moguća 4 boda. Odnosno, u šestom testu procenat uspešnosti iznosio je veoma visokih 98,3%, a u trećem testu 96,7%. Najslabiji su bili u drugom i petom testu 1,83 i 1,87 od moguća 3 boda, što prevedeno u procenat iznosi 61% i 62,4% uspešnosti.

Tabela 2. Prosečne vrednosti pojedinačno za svaku grupu, kao i ukupno za sve testove

prosečne vrednosti	dečaci	devojčice	svi ispitanici
	n-16	n-14	n-30
1. test	3.00	3.79	3.37
2. test	1.56	2.14	1.83
3. test	2.81	3.00	2.90
4. test	2.63	2.71	2.67
5. test	1.56	2.21	1.87
6. test	3.88	4.00	3.93
7. test	2.63	2.86	2.73

Kada se posmatraju prosečno ostvarene vrednosti grupa na svih sedam testova (Tabela 2), primetno je da je grupa devojčica bila uspešnija. Čak u dva testa, trećem i šestom devojčice su ostvarile maksimalan broj bodova. Kada se upoređuju grupe, devojčice su imale bolje rezultate od dečaka u svih sedam testova.

Kako bi se ispitala razlike između grupa dečaka i devojčica, prevashodno se pristupilo Shapiro-Wilk testu (mali uzorak, n-30) normalnosti raspodele podataka, koji je ukazao da raspodela nije normalna, te da bi se trebalo izvršiti neparametrijski Mann-Whitney U test (Tabela 3).

Tabela 3. Mann-Whitney U test između grupe dečaka i devojčica, rangovi

	Ranks			
	pol	N	Mean Rank	Sum of Ranks
1. test	dečaci	16	12,16	194,50
	devojčice	14	19,32	270,50
	Total	30		
2. test	dečaci	16	13,09	209,50
	devojčice	14	18,25	255,50
	Total	30		
3. test	dečaci	16	15,06	241,00
	devojčice	14	16,00	224,00
	Total	30		
4. test	dečaci	16	15,19	243,00
	devojčice	14	15,86	222,00
	Total	30		
5. test	dečaci	16	14,31	229,00
	devojčice	14	16,86	236,00
	Total	30		
6. test	dečaci	16	14,63	234,00
	devojčice	14	16,50	231,00
	Total	30		
7. test	dečaci	16	15,06	241,00
	devojčice	14	16,00	224,00
	Total	30		

Upoređujući vrednost medijane kao centralne vrednosti u distribuciji rezultata, primetno je da su prosečne vrednosti rangova na strani devojčica u svim testovima.

Tabela 4. Mann-Whitney U test između grupe dečaka i devojčica

	Test Statistics ^b						
	1. test	2. test	3. test	4. test	5. test	6. test	7. test
Mann-Whitney U	58,500	73,500	105,000	107,000	93,000	98,000	105,000
Z	-2,490	-1,682	-,935	-,320	-,846	-1,346	-,307
Asymp. Sig. (2-tailed)	,013	,093	,350	,749	,398	,178	,759

Razlike između grupa dečaka i devojčica postoje i one su na strani devojčica, međutim te vrednosti nisu statistički značajne osim u prvom testu ($p=0.13$), gde je bilo potrebno dodirnuti nos kažiprstom zatvorenih očiju (Tabela 4).

DISKUSIJA

Kada se radi o razvoju opšte motorike deteta, treba istaći da motorička koordinacija predstavlja jedan od glavnih elemenata motoričkih sposobnosti dece, ali i njihovih kognitivnih sposobnosti i psiholoških osobina (da Silva, et al., 2016; Goodway, et al., 2019). Ovo ukazuje da pravilan razvoj motoričke koordinacije predstavlja izuzetno bitan faktor jer u velikoj meri može uticati i na sam kvalitet života deteta, odnosno na različite bio-psiho-socijalne aspekte njegovog života. Zato je izuzetno važno da se još u ranoj dobi kod dece uoče nepravilnosti u motoričkoj koordinaciji i da se uz stručan nadzor na vreme otklone.

Bilateralna koordinacija odnosi se na sposobnost istovremenog korišćenja obe strane tela i kod osoba koje pokazuju visok nivo ove sposobnosti ukazuje da obe strane mozga deluju u sinergiji (Balakrishnan & Rao, 2007; Karambe, et al., 2017; Rutkowska, et al., 2016; Uzunović, et al., 2018). Kada se radi o deci uzrasta sedam godina, autori prilikom dosadašnjih ispitivanja bilateralne koordinacije nisu decu razvrstavali prema polnom statusu, već bi ih ispitivali u odnosu na druge karakteristike. Osnovni razlog je činjenica da pubertet nastupa tek između devet i jedanaest godina (Kuzman, 2009; Rudan, 2004), pa se tek od tog perioda autori intenzivnije bave ovom temom.

Kada se komparativno posmatraju prosečno ostvarene vrednosti po grupama na svih sedam testova, primetno je da je grupa devojčica bila uspešnija. Treba napomenuti da su devojčice u trećem i šestom testu ostvarile maksimalan broj bodova. Što se tiče razlika u bilateralnoj koordinaciji između dečaka i devojčica u ovom istraživanju, devojčice su bile uspešnije u svih sedam testova bilateralne koordinacije, iako se utvrdilo da ta razlika nije na ni-

vou statističke značajnosti, osim u prvom testu ($p=0.13$), gde je bilo potrebno dodirnuti nos kažiprstom zatvorenih očiju. Takođe, može se primetiti i da je u drugom testu ostvarena razlika na nivou značajnosti ispod 0.1, tj. da postoji verovatnoća od 9,3% da je uočena veza između varijabli nastala delovanjem slučaja. Za daljnja istraživanja trebalo bi obezbediti veliki uzorak i posvetiti pažnju ovoj temi, jer postoji pretpostavka da bi se na velikom uzorku dobili rezultati koji bi diskriminirali devojčice od dečaka u ovoj motoričkoj sposobnosti u datom periodu.

ZAKLJUČAK

Na osnovu ovog istraživanja gde se ispitivala veza između dečaka i devojčica primenom podtesta Bilateralna koordinacija (sedam varijabli) koji su deo baterije motoričkih testova BOT-2 (the Bruininks-Oseretsky test of Motor Proficiency), samo u jednom od sedam testova utvrđena je razlika na nivou statističke značajnosti. Kada su u pitanju razlike između dečaka i devojčica, ovi rezultati sugerišu da u tom periodu nema značajne razlike, već da se ona pojavljuje s početkom puberteta. Međutim, za osnovni nedostatak istraživanja može da se smatra mali uzorak ispitanika. Ostale preporuke za daljnja istraživanja tiču se uključivanja dece iz više heterogenih socijalnih grupa, posmatranje drugih faktora, kao što su: uspeh u školi, uloga socio-ekonomskog statusa, kulturološke, biološke i fiziološke razlike.

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Original scientific paper

DIFFERENCES IN BILATERAL COORDINATION BETWEEN BOYS AND GIRLS AT 7 YEARS OF AGE

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Abstract: The study was conducted to identify differences in bilateral coordination between boys and girls in the first grade of primary school. The sample consisted of 30 first grade students, at the age of 7 years \pm 6 months. The children were divided into two groups consisting of boys (14) and girls (16). The level of the children's bilateral coordination was assessed using the Bilateral Coordination (7 variables) subtests that are part of the BOT-2 - the Bruininks-Oseretsky Motor Proficiency Test Battery. The tests are used as a standardized measure of the level of motor skills in children. The obtained data was processed in the SPSS 19 statistical programme, and the non-parametric Mann-Whitney U test was used to determine differences in bilateral coordination. After processing the data, it was noted that there are differences in bilateral coordination between boys and girls, but that they were not statistical-

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ly significant. For more reliable results and, therefore, more conclusive results and conclusions, it is necessary to perform tests on a larger sample of children.

Keywords: *coordination, bilateral coordination, BOT-2 test, children*

INTRODUCTION

A child's motor development has been identified as one of the important areas in their overall growth and development. The development of general motor skills involves the development of fine and gross motor skills. Fine motor skills involve manipulative coordination using smaller muscles, while, in contrast, gross motor skills involve large muscle groups making various movements (Cairney, et al., 2005; Goodway, Ozmun & Gallahue, 2019). When working with children, fine and gross motor skills should equally be developed throughout schools' sports and physical education classes. Motor coordination is considered to be one of the main elements of children's motor abilities, of their cognitive abilities and psychological traits, too (da Silva, Gabbard, Ries & Bobbio, 2016; Goodway, Ozmun & Gallahue, 2019). Poor motor coordination in children not only interferes with their performance of a particular motor task, but can also have a negative impact on their participation in physical activities, school success, and within-group social relationships (Asonitou, Koutsouki, Kourtessis & Charitou, 2012; Cairney, Hay, Veldhuizen, Missiuna & Faught, 2010; Vandorpe, et al., 2011). This is why it is very important to detect abnormalities in the development of children's general motor coordination early and correct them.

Bilateral coordination refers to the ability to simultaneously use both sides of the body in a controlled manner (Balakrishnan & Rao, 2007; Karambe, Dhote & Palekar, 2017; Rutkowska, et al., 2016; Uzunovic, et al., 2018). The development of bilateral coordination begins at an early age and forms the basis for further overall motor development. Good results of participants on bilateral coordination tests indicate that both sides of the brain act in synergy (Karambe, et al., 2017).

Studies examining the motor coordination of children include primary school children as participants. The largest number of studies includes younger primary school children (Cairney, et al., 2005; Cairney, et al., 2010; da Silva et al., 2016; Kaur, Srinivasan & Bhat, 2018; Vandorpe, et al., 2011), while several papers address older elementary school age (da Silva, et al., 2016; Lopes, Stodden, Bianchi, Maia & Rodrigues 2012; Rutkowska, et al., 2016; Kaur, et al., 2018). The level of motor skills is positively correlated with the level of physical activity and inversely related to sedentary activity in children. Children with the best performance in motor tests had the highest level of physical

activity (Cairney, et al., 2005; Cairney, et al., 2010; Goodway, Ozmun & Galahue, 2019). Karambe et al. (2017) have shown that with age, the result in the Bruininks-Osterecki coordination test increases in both boys and girls, as expected (Karambe, et al., 2017). Lopes, Santos, Pereira & Lopes (2013), and da Silva et al. (2016) studied coordination and its relationship to school success. Generally, it has been found that there is a positive relationship between gross motor tests and school success. None of the studies addressed gender differences in children of this age, and this is why the aim of this study is to examine differences in bilateral coordination between boys and girls in primary school.

METHOD

Sample of participants

The sample of participants in this study consisted of young children of primary school age, more precisely, children attending the first grade of primary school. The study involved 30 subjects at the age of 7 (\pm 6 months) from elementary school "Miroslav Antić" from Nis. Groups were formed by gender, including boys (n-14) and girls (n-16).

Sample variables

For this purpose, 7 motor tasks, subtests were performed to evaluate bilateral coordination using the Bruininks-Oseretsky test:

1. *Touching nose with index fingers - eyes closed*
2. *Jumping jacks*
3. *Jumping in place - same sides synchronized*
4. *Jumping in place - opposite sides synchronized*
5. *Pivoting thumbs and index fingers*
6. *Tapping feet and fingers - same sides synchronized*
7. *Tapping feet and fingers - opposite sides synchronized* (Bruininks, 2005)

The Bruininks-Oseretsky test is used as a standardized measure of the level of motor skills of children, and in this case to examine bilateral coordination as a motor ability.

Data processing

Data processing was performed using the statistical program SPSS 19. The basic parameters of descriptive statistics were calculated: arithmetic mean, standard deviation, range, minimum and maximum value. After per-

forming the Shapiro-Wilk data normality test, a significant deviation from the normal data distribution was found, indicating that a nonparametric technique should be implemented, in this case the Mann-Whitney U test. This test was used to determine differences in bilateral coordination between groups of boys and girls in the first grade of primary school.

RESULTS

The results obtained from testing the bilateral coordination of children are initially converted according to standardized BOT-2 test scores, for each test individually. The given grades are entered in the table and this represents the test results which are later subject to processing in statistical programs. Table 1 shows the results of descriptive statistics for all 30 students surveyed.

Table 1. *Descriptive statistics*

	Range	Minimum	Maximum	Mean	Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Statistic
Age	2	6	8	6.87	.43
Height	18	117	135	126.67	4.60
Weight	18.5	21.3	39.8	27.12	4.48
BMI	7.80	14.70	22.50	17.02	2.19
Test 1	3	1	4	3.37	.85
Test 2	3	0	3	1.83	.91
Test 3	3	0	3	2.90	.55
Test 4	3	0	3	2.67	.84
Test 5	3	0	3	1.87	1.28
Test 6	1	3	4	3.93	.25
Test 7	4	0	4	2.73	1.26

Table 1 shows that the average height of first-grade children is 126.7 cm, the average body weight is 27.1 kg and the average BMI values are 17.0. Looking at the minimum and maximum values, it is noticeable that the height ranges from 117 cm to 135 cm, the body weight ranges from 21.3kg to 39.8, while BMI varies between 14.7 and 22.5. It should be noted that the first, sixth, and seventh tests were rated from 0 to 4 points, while the other tests were

rated from 0 to 3. The children achieved the best results in the 3rd and 6th test, winning 2.9 from 3 and 3.93 out of the possible 4 points. Namely, in the 6th test, the success rate was very high, 98.3%, and in the 3rd test 96.7%. The lowest scores were 1.83 and 1.87 out of the maximum 3 points in Tests 2 and 5, which translates into a success rate of 61% and 62.4%, respectively.

Table 2. *Average values individually for each group as well as for all tests*

average values	boys	girls	all participants
	n-16	n-14	n-30
Test 1	3.00	3.79	3.37
Test 2	1.56	2.14	1.83
Test 3	2.81	3.00	2.90
Test 4	2.63	2.71	2.67
Test 5	1.56	2.21	1.87
Test 6	3.88	4.00	3.93
Test 7	2.63	2.86	2.73

When looking at the average values of the groups on all seven tests (Table 2), it is noticeable that the group consisting of girls was more successful. What is more, in two tests, the 3rd and the 6th group of girls achieved maximum points. When comparing groups, the girls performed better than the boys in all seven tests.

To examine the differences between the groups of boys and girls, the Shapiro-Wilk test (small sample, n-30) of data distribution fidelity was used, and it indicated that the distribution was not normal and that a non-parametric Mann-Whitney U test should be performed (Table 3).

Table 3. *Mann-Whitney U test between boys and girls group, ranks*

	gender	Ranks		
		N	Mean Rank	Sum of Ranks
Test 1	boys	16	12,16	194,50
	girls	14	19,32	270,50
	Total	30		
Test 2	boys	16	13,09	209,50
	girls	14	18,25	255,50
	Total	30		

Test 3	boys	16	15,06	241,00
	girls	14	16,00	224,00
	Total	30		
Test 4	boys	16	15,19	243,00
	girls	14	15,86	222,00
	Total	30		
Test 5	boys	16	14,31	229,00
	girls	14	16,86	236,00
	Total	30		
Test 6	boys	16	14,63	234,00
	girls	14	16,50	231,00
	Total	30		
Test 7	boys	16	15,06	241,00
	girls	14	16,00	224,00
	Total	30		

Comparing the value of the median as the central value in the distribution of scores, it is noticeable that the average rank values are on the girls' side in all tests.

Table 4. Mann-Whitney U test between boys' and girls' group

	Test Statistics ^b						
	Test 1	Test 2	Test 3	Test 4	Test 5	Test 6	Test 7
Mann-Whitney U	58,500	73,500	105,000	107,000	93,000	98,000	105,000
Z	-2,490	-1,682	-,935	-,320	-,846	-1,346	-,307
Asymp. Sig. (2-tailed)	,013	,093	,350	,749	,398	,178	,759

There are differences between groups of boys and girls and they are in favour of the girls. However, these values are not statistically significant, except in the first test ($p=0.13$), where it was necessary to touch the nose with the index finger, eyes closed (Table 4).

DISCUSSION

When it comes to the development of a child's general motor skills, it should be noted that motor coordination is one of the main elements of chil-

dren's motor skills, as well as their cognitive abilities and psychological characteristics (da Silva, et al., 2016; Goodway, et al., 2019). This indicates that proper development of motor coordination is an extremely important factor, as it can greatly affect a child's quality of life itself, that is, various bio-psycho-social aspects of their life. Therefore, it is extremely important to detect irregularities in motor coordination at an early age and to remedy them with expert supervision in a timely manner.

Bilateral coordination refers to the ability to use both sides of the body simultaneously and in individuals who exhibit a high level of this ability, this indicates that both sides of the brain act in synergy (Balakrishnan & Rao, 2007; Karambe, et al., 2017; Rutkowska, et al., 2016; Uzunovic, et al., 2018). In case of children at the age of 7, the authors did not classify children according to their gender status, but conducted examination based on their other characteristics. The main reason is that puberty starts only as soon as between the ages of 9 and 11 (Kuzman, 2009; Rudan, 2004), so it is only from that age that authors are interested in researching this topic.

When looking at the average values achieved by groups in all seven tests, it is noticeable that the group of girls was more successful. It should be noted that the girls in the 3rd and 6th test achieved maximum points. Regarding differences in bilateral coordination between boys and girls in this study, girls were more successful in all seven bilateral coordination tests, although this difference was not found to be statistically significant except in the first test, $p=0.13$, where they needed to touch the nose with the index finger, eyes closed. It should also be noted that in the second test, a difference in the level of significance below 0.1 was made, so there is a probability of 9.3% that the observed relationship between the variables was created by the case coincidence. For further research of the topic, a large sample should be provided, since it is assumed that a larger sample would produce results that would discriminate against girls from boys in this motor ability over a given period of time.

CONCLUSION

Based on this study that examined the relationship between boys and girls using the Bilateral Coordination (7 variables) subscale, which is part of the BOT-2 (the Bruininks-Oseretsky test of Motor Proficiency) test battery, only one of the seven tests indicated a difference of statistical significance. When it comes to differences between boys and girls, these results suggest that during this age, there is no significant difference, but that it occurs with the onset of puberty. However, a major drawback of this research is the small sample of respondents. Other recommendations for further research concern

the inclusion of children from multiple heterogeneous social groups, observation of other factors, such as school success, the role of socioeconomic status, cultural, biological, and physiological differences.

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