

## ANTHROPOLOGICAL CHARACTERISTICS AND CAPABILITIES EASIER MENTALLY DISABILITIES STUDENTS DIFFERENT AGE

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DSEOU "8 September", Tetovo, Republic of Macedonia

Original scientific paper

### Abstract

The problem of this research is the study of morphological characteristics, motor abilities and situational basketball motor skills of easier mentally disabled students in Vojvodina. In accordance with the issue and the subject of research, the primary objective is to determine the difference in the area of morphological characteristics, motor and situational motor abilities in basketball easier mentally disabled students, a variety of age. Respondents were members of the population easier mental impairments students, who regularly attended the school for special education. The age of the respondents was between 11 and 16 years. For the analysis of the segments was divided according to age (11 - 13 and 14 - 16 years). The results may suggest to us that in this age boys especially after the 13 years, increasingly include mechanisms that are closely related to cognitive processing. This would, of course that means that specific basketball movement structures can positively stimulating to act on cognitive processes, which is certainly of particular importance when it comes to people who have mental disorders.

**Key words:** pupils 11-16, basketball, morphology, motor abilities, skills

### Introduction

Social care for people with intellectual disabilities is a necessity in modern societies, which should be legally regulated and organization, but also based on a scientific basis, constantly checked and continuously upgraded. The most important international legal instruments dealing with children with disabilities are the UN Convention on the Rights of the Child and the UN Standard Rules on the Equalization of Opportunities that provide people with disabilities. According to the Convention on the Rights of the Child by the UN General Assembly adopted in 1989, a child with developmental difficulties have the right to a full quality of life in conditions which promote dignity, self-reliance and facilitate the child's active participation in the community. On the basis of this Convention, the state is obligated to create all the conditions, including legal, to a child with developmental had the opportunity to, like all other children get an education according to their abilities. Thus, persons with disabilities are not disabled by their situation but prejudice, rejection and discrimination (Hrnjica, 1991).

#### *Problem and aim*

The problem of this research is the study of morphological characteristics, motor abilities and motor skills of basketball situational easier mentally disabled students in Vojvodina, but also refers to the comparison of the results of two different ages of students in the context of the assessment for the adoption of content from basketball. In accordance with the issue and the subject of research, the primary objective is to determine the difference in the area of morphological characteristics, motor and situational motor abilities in basketball easier mentally disabled students, a variety of age.

By secondary objective is:

1. to determine the level of morphological, motor abilities and situational motor abilities in basketball easier mentally disabled students, a variety of age.
2. to identify univariate significance (manifest space) difference variables of morphological characteristics, motor skills and situational motor abilities in basketball easier mentally disabled students, a variety of age.

According to the goal of the research, the following hypothesis is stated:

In anticipation of a significant difference in motor abilities, motor skills and situational motor abilities in basketball easier mentally disabled students, a variety of age.

### Methods

Respondents were members of the population easier mental impairments students, who regularly attended the school for special education.

The age of the respondents was between 11 and 16 years. For the analysis of the segments was divided according to age (11 - 13 and 14 - 16 years).

All students who entered the sample attended classes at the school for children with special needs "Milan Petrović" in Novi Sad, as follows:

- A group of 60 students aged 11 - 13 years,
- A group of 60 students aged 14 - 16 years.

The selection of respondents was made according to criteria that include:

- regularly attending classes of physical education,
- that the measurement leaves have entered all the results.

The variables for the evaluation of anthropometric dimensions

For the skeleton dimensions following variables were used:

- body height - AVIS,
- leg length - ADNO,
- arm length - ADRU.

To assess body mass and volume following variables were used:

- Body weight - AMAS,
- the maximum volume of the forearm - AOPL,
- the scope of the thigh - AONK,
- thorax - circumference -AOGK.

Variables for motor abilities

To assess the frequency of motion:

- Hand taping (MTAP)
- Foot taping (MTAN).

To assess flexibility:

- The deep forward bend on the bench (MDP).

To assess the explosive strength:

- Long jump out of town (MDM)
- Running at 60 meters (MTR2)
- Throwing a medicine ball (MBAM).

For the evaluation of static strength of arms and shoulders:

- the folding endurance (MVIS).

To assess the repetitive power:

- Raising the angle for 30 seconds (MDT3)
- Push for 30 seconds (SKLE).

Situation basketball tests:

- Slalom with rubble and two-step to the basket (SSLK)
- Adding and catching a ball against the wall with one hand (SDHZ)
- Keeping a jump shot for a field goal (SVŠŠ) and
- Free throws (SSLB).

The selection of these tests affect the curriculum for students with special needs. Namely until the end of eighth grade, students should master the simple elements of the game of basketball.

In order to formulate valid conclusions we used the statistical software STATISTICA BASIC VERSION 6 0 testing the hypothesis with the following procedures:

- AS- mean;
- SD standard deviation;
- MIN min. result;
- MAX max. result; and
- The differences between students of various ages will be determined by analysis of variance Anova - for the determination of mean.

## Results and conclusion

In this part of the research we formed two groups by age.

The first group consisted of boys aged 11 to 13 years and another 14 to 16 years.

Previous analyzes, we found that there were some common characteristics for the first and for the second group and is thus the legitimacy of such a grouping.

Table 38 shows the mean, the maximum and minimum values and standard deviations.

Comparing all the values of a specific medium, see most violent changes in the morphological measures which certainly represents a logical biological development in these periods of ontogenetic development.

Morphological changes are the result of normal biological development and there were no observed differences.

As far as motor skills only major difference we see in arithmetic means of taping hand which assesses the speed of alternative movements.

In other motor and situational basketball motor skills is far difference in the mean values between the groups formed this way.

Sometime even the mean value was lower as running at 60m and the deep forward bend on the bench somewhere you can see almost the same value as in push-ups in 30 seconds, and in all specific basketball motoric abilities.

Small differences were found in other motor skills applied.

Overall results in all motor skills are lagging behind compared to the normal population of boys (boys standard population) of the same age especially in tests of coordination and precision are most correlated with cognitive factors which are easier mentally distracted boys had a lower level of functioning.

Table 1. Analysis of variance

		N	AS	SD	F	Sig.
body height - AVIS	Between Groups	60 (11-13)	151. 7033	12. 74401	59. 184	<b>.000</b>
	Within Groups	60 (14-16)	167. 9643	10. 27901		
	Total	120	159. 8338	14. 12686		
leg length - ADNO	Between Groups	60 (11-13)	85. 3172	10. 03970	13. 881	<b>.000</b>
	Within Groups	60 (14-16)	91. 8583	9. 17307		
	Total	120	88. 5878	10. 12324		
arm length - ADRU	Between Groups	60 (11-13)	70. 8733	7. 32263	8. 402	<b>.004</b>
	Within Groups	60 (14-16)	74. 8900	7. 84843		
	Total	120	72. 8817	7. 82257		
Body weight - AMAS	Between Groups	60 (11-13)	45. 9083	9. 50380	30. 303	<b>.000</b>
	Within Groups	60 (14-16)	55. 1150	8. 80385		
	Total	120	50. 5117	10. 22636		
the maximum volume of the forearm - AOPL	Between Groups	60 (11-13)	18. 9650	1. 75700	. 432	. 512
	Within Groups	60 (14-16)	19. 1767	1. 76974		
	Total	120	19. 0708	1. 75917		
the scope of the thigh - AONK	Between Groups	60 (11-13)	21. 2450	2. 51048	3. 377	. 069
	Within Groups	60 (14-16)	22. 1450	2. 84435		
	Total	120	21. 6950	2. 70927		
thorax - circumference -AOGK	Between Groups	60 (11-13)	87. 3018	9. 09034	. 134	. 715
	Within Groups	60 (14-16)	87. 9005	8. 82233		
	Total	120	87. 6012	8. 92469		
Hand taping - MTAP	Between Groups	60 (11-13)	16. 6333	4. 47580	48. 934	<b>.000</b>
	Within Groups	60 (14-16)	22. 7000	5. 00948		
	Total	120	19. 6667	5. 62607		
Foot taping - MTAN	Between Groups	60 (11-13)	8. 5667	2. 43816	49. 855	<b>.000</b>
	Within Groups	60 (14-16)	11. 8000	2. 57629		
	Total	120	10. 1833	2. 97887		
The deep forward bend on the bench - MDP	Between Groups	60 (11-13)	35. 5500	9. 64176	. 223	. 637
	Within Groups	60 (14-16)	34. 7000	10. 06302		
	Total	120	35. 1250	9. 82243		
Long jump out of town - MDM	Between Groups	60 (11-13)	148. 9667	40. 89008	. 009	. 925
	Within Groups	60 (14-16)	149. 6667	39. 97697		
	Total	120	149. 3167	40. 26738		
Running at 60 meters - MTR2	Between Groups	60 (11-13)	12. 4250	3. 60393	5. 512	<b>.021</b>
	Within Groups	60 (14-16)	13. 9783	3. 64385		
	Total	120	13. 2017	3. 69201		
Throwing a medicine ball - MBAM	Between Groups	60 (11-13)	3. 6083	1. 38421	18. 119	<b>.000</b>
	Within Groups	60 (14-16)	4. 5417	. 98416		
	Total	120	4. 0750	1. 28444		
the folding endurance - MVIS	Between Groups	60 (11-13)	30. 6863	14. 83177	. 138	. 711
	Within Groups	60 (14-16)	31. 8033	17. 93737		
	Total	120	31. 2448	16. 39828		
Raising the angle for 30 seconds - MDT3	Between Groups	60 (11-13)	14. 0667	4. 41441	. 237	. 627
	Within Groups	60 (14-16)	13. 6667	4. 58689		
	Total	120	13. 8667	4. 48702		
Push for 30 seconds - SKLE	Between Groups	60 (11-13)	10. 8833	5. 53905	. 002	. 963
	Within Groups	60 (14-16)	10. 9333	6. 10325		
	Total	120	10. 9083	5. 80350		
Slalom with rubble and two-step to the basket - SSLK	Between Groups	60 (11-13)	1. 9833	1. 64153	. 000	1. 000
	Within Groups	60 (14-16)	1. 9833	1. 64153		
	Total	120	1. 9833	1. 63462		
Adding and catching a ball against the wall with one hand - SDHZ	Between Groups	60 (11-13)	1. 1000	1. 17459	. 915	. 341
	Within Groups	60 (14-16)	. 9000	1. 11538		
	Total	120	1. 0000	1. 14496		
Keeping a jump shot for a field goal - SVSŠ	Between Groups	60 (11-13)	2. 0667	1. 63507	. 157	. 693
	Within Groups	60 (14-16)	2. 1833	1. 58907		
	Total	120	2. 1250	1. 60651		
Free throws - SSLB	Between Groups	60 (11-13)	1. 2500	1. 15897	. 025	. 875
	Within Groups	60 (14-16)	1. 2833	1. 16578		
	Total	120	1. 2667	1. 15761		

By examining the distribution of the results in a group of boys from 11 to 13 and the group of 14 to 16 years observed a large overlap between the distribution of the results of the tests for motor abilities of the two groups of boys. This means that some boys from the first group achieved results as boys from the other group and vice versa. Also, a number of boys from both groups achieved results as boys from the standard population, especially seen from the maximum value outcome. This was particularly true of running speed, repetitive and static strength. It was noted also that the differences between the mean values and the general distribution of results over the result of differences in anthropometrical characteristics than intellectual abilities as evidenced by the weak performance of the basketball situational motor skills that required a higher level of coordination and cognitive functioning. The univariate significance of differences of arithmetic means of each variable in morphological, motor and situational basketball motoric space between easier mentally disabled boys from 11 to 13 and 14 to 16 years. By examining the significance F-test in each of the variables we see that a total of 20 variables applied in just 8 there is a statistically significant difference between the two groups formed in this way. Of this number, five from the morphological space and only three from the motor. The differences in morphological space in a longitudinal dimensions of body and body mass in the motor area in the speed of alternative movements, running speed and explosive power of arms and shoulders. So this is confirmed previous statements that the group in many, especially motor skills had very similar results, ie that the progress was visible up to 14 years and since then has observed stagnation or hot little progress. These results suggest that the adaptation ability especially consolidation of neuromuscular process significantly reduced during puberty and late puberty. Especially small differences in tests for evaluation of specific coordination and precision confirms poor adaptability neuromuscular processes that are closely related to cognitive factors. Comparing all

the values of a specific medium, a group of boys from 11 to 13 years and groups of 14 to 16 years, we have found that the most tumultuous changes in the morphological measures which certainly represents a normal biological development in these periods of ontogenetic development. Morphological changes are the result of normal biological development and there are not observed any discrepancies. As far as motor skills only major difference we see in arithmetic means of taping hand which assesses the speed of alternative movements. In other motor and situational basketball motor skills was far less difference in mean values between the groups formed this way. Sometime even the mean value was lower as running at 60m and deep The deep forward bend on the bench somewhere you can see almost the same value as in push-ups in 30 seconds, and in all specific basketball motoric abilities. Small differences were found in other motor skills applied. Overall results in all motor skills are lagging behind compared to the normal population of boys (boys standard population) of the same age especially in tests of coordination and precision are most correlated with cognitive factors which are easier mentally distracted boys had a lower level of functioning. The results may suggest to us that in this age boys especially after the 13 years, increasingly include mechanisms that are closely related to cognitive processing. This would, of course that means that specific basketball movement structures can positively stimulating to act on cognitive processes, which is certainly of particular importance when it comes to people who have mental disorders. It seems that this period of particular importance for stimulation in this direction in a boy with mild mental disabilities. Basketball situational movement structures, and technical elements, as well as the specific coordination, can exert positive effects on sensory integration and better functioning of cognitive processes and thereby alleviate or reduce the difference between students with mental disabilities and students standard of the population who do not have mental or intellectual disability.

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## ANTROPOLOŠKE KARAKTERISTIKE I SPOSOBNOSTI LAKŠIH MENTALNIH INVALIDITETA KOD UČENIKA RAZLIČITE DOBI

### Sažetak

Problem ovog istraživanja je proučavanje morfoloških karakteristika, motoričkih sposobnosti i situacijskih košarkaških motoričkih sposobnosti lakše mentalno invalidnih studenata u Vojvodini. U skladu sa tim pitanjem i predmetom istraživanja, primarni cilj je utvrditi razlike u području morfoloških značajki i situacijskih motoričkih sposobnosti u košarci kod studenata s lakšim mentalnim invaliditetom razne dobi. Ispitanici su bili članovi populacije učenika s lakšim mentalnim oštećenjima, koji su redovito pohađali školu za posebno obrazovanje. Dob ispitanika bila je između 11 i 16 godina. Za analizu segmenata bili su podijeljeni prema dobi (11 - 13 i 14 - 16 godina). Rezultati nam mogu sugerirati da u toj dobi dječaci, pogotovo nakon 13 godina, sve više uključuju mehanizme koji su usko vezani uz kognitivne obrade. To bi, naravno, značilo da određene strukture košarkaških pokreta mogu pozitivno i poticajno djelovati na kognitivne procese, što je svakako od posebnog značaja kada je riječ o ljudima koji imaju mentalan poremećaj.

**Ključne riječi:** učenici 11-16 g., košarka, morfologija, motorika, vještine

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Received: April 19, 2016

Accepted: June 15, 2016

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