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RELATIONSHIP OF MORPHOLOGICAL CHARACTERISTICS WITH MOTOR SKILLS OF PUPILS

Abstract

This study encompassed the pupils of two primary schools: Primary School in Pale and Primary School in Eastern Ilidža.
The sample consisted of pupils of two primary schools. Primary school of "Serbia" Pale with male respondents: pupils of VI 1 (10) 2 and VII (13) and the second group consisted of the pupils of VI 4 (9) and VII 1 (6) – from the primary school "Petar Petrović Njegoš" in Eastern Ilidža.
Chronological age of pupils of VI1 and VI4 class was 13 + - 6 months, while pupils in classes VII2 and VII1 in mentioned primary schools were 14 + - 6 months old.
The sample of variables referred to: morphological characteristics and motor abilities: morphological characteristics included the body height (AVIS), the body mass (AMAS), the volume of the right upper leg (ONKD), the volume of the right lower leg (OPKD), the volume of the left upper leg (ONKL), the volume of the left lower leg (OPKL). Motor skills include: standing long jump and standing triple jump as a criterion.
The pupils of VII2 class of the Primary School „Serbia" in Pale showed very high results in the long jump and the triple jump with 81%, while the variable volume of the right upper leg and lower leg in the long jump and triple had significance of the 43% for the pupils of VII1 grade of the primary school „Petar Petrović Njegoš" in Eastern Ilidža.
It can be concluded that the relation of morphological characteristics with motor skills, although based on the number of respondents provides confirmation that the morphological structures have relational relationship with motor skills in individual sports disciplines.

***Key words**: skeleton dimension, the body volume, explosive strength, primary school*

1. INTRODUCTION

"In the manifesting motoric area of a man it is possible to distinguish between various forms of movement. From the biological point of view, all these forms can be divided into (1) phylogenetic and (2) onthogenetic. The phylogenetic forms of movement (such as crawling, walking, running) are common to all members of the same biological species, therefore all the people, and their development is genetically determined and is going on in a pre-established manner. Onthogenetic forms of movement are developed throughout life and are the specificity of each individual. They are, of course, the complex forms of movement acquired by learning, such as swimming, cycling, skiing, ball handling and so on. Adoption of onthogenetic forms of movement is commonly referred to as motor learning. Although the phylogenetic ones are involved in almost all of any concrete activity, the central place of studies of sport still belongs to onthogenetic forms of movement. Walking and running are the main subjects of study both in certain segments of physiology and functional diagnostics. "(Perić, 2003).

"The man's latent motor space is a very complicated complex of anthropological dimensions. It consists of a number of factors existing in the structure of the human biomotorics and makes an individual specific within the anthropomotoric meaning. The main problem for researchers in observations of the man's latent motor area is to define the number and types of sizes (of biomotoric abilities) that make him up." (Perić, 2003).

"Certain number of muscles, nerves, joints, and other organs are working during the movement of a human or performing any other moving activity, wherein a number of adequate systems are included or excluded following always the same pattern. Thus, for example, for high or long jump all parts of the body are always launched in one and same order. However, in the rowing, the knees are stretched first, and then elbows are bent and a stroke is performed. Simultaneous movement of a number of segments of the human body, as a rule, refer to the movements in which the specific segments of the body move at different speeds and make uneven movements. Therefore, these moves have a major impact on the body, making the effects of work great "(Stojiljković, 2003).

"With people who have approximately the same level of fitness, and the various body weight, those with higher body weights exhibit greater power. The dependence of strength and body weight is more pronounced if the test respondent deals with the same or similar activities. In weightlifting, the world champions have shown a very high correlation between athletic performance and body weight (0.95), while people who do not do sports may have this ratio at 0.0. There is a difference between the absolute human muscle strength and absolute human muscle power, which represents the power exerted on section of 1 cm3 of physiological muscle. Relative strength = absolute power / own body weight. With athletes in the same specialty, of about the same level of training, and different body weights, absolute strength increases with increasing body weight, and a relative one decreases."(Herodek, 2006).

"The topological division of the motion and movement includes the systematization and classification of movements on the basis of performance place, that is, the part of the body that performs the movement. Hence the different motions and movements of the arms and the shoulder belt, torso and legs and the pelvic girdle. Systematization and classification of motion and movement can further be divided in two ways. First, it is on the basis of their impact on motor skills by knowing the definition of motor skills. For example, if it is known that the explosive power is a basic motor skill to exert maximum power for maximum moving time, then all motions and movements with these characteristics will influence the development of explosive strength. In this sense, the standing long jump, standing triple jump, standing high jump, throwing a medicine in the long or high by hands, short sprint to 20 meters, quintuple jump and the like, performed in the manner defined as explosive power, will develop just such an ability, of course, by application of these exercises (the motions, movements), and following a particular methodology (a small number of times to 8, with long breaks between attempts, and with good preparation period). Second, it is based on modes of motion or movement, that we classify and systematize a certain motion or movement in the specific motor skills according to its definition. If, for example, we perform a motion or movement very fast and in a short duration (series of skips, sprint over 20 m to 80 m, a series of rapid movements of the hands to 8 seconds, and the like), then by knowing the definition of the speed, we shall group such motions and movements into movement frequency or sprint speed." (Nićin, Lolić, 2010).

„Speed is branched into the dynamic and static, and dynamic to repetitive and explosive. Explosive power is branched into to the explosive force of the impact character, of sharp shock character, without prior shock absorption, and each of these explosive forces is manifested by elementary explosive movements.“ (Nićin, 2000).

„The fraction of the total variance explained is also called a regression variability (regressive quarter summary), and an unexplained is referred to as residual variability (error square summary). The greater the explained fraction of the variability is, the less is dispersion of diagram of dispersion, i.e. the regression line is representative.
Thus, the measures of the representativeness of the regression line are determined by the ratio of the total, previously explained and the unexplained variance. Standard error of regression (as an absolute measure) of the explained uses the sum of squares of the unexplained, and the coefficients of the dispersion (relative measure) the compared and explained variability.“ (Peric, 2001)

2. METHOD

„Anthropometric characteristics have been taken according to the method recommended by the International Biological Program (IBP). “ (Momirović, Stalec, Wolf, 1975, Dragaš, 1998).
“Body height was measured with an anthropometer; the respondent was standing in the upright position, the back upright and the heels composed, the head in Frankfurt horizontal plane; standing to the left of the respondent, the measurer set up the anthropometer vertically, directly along the back side of the body, and then he lowered the slider metal ring to make the bar touch the respondent’s head (the vertex); the result is read by an accuracy of 1 mm. Body weight; the respondent was standing with both feet on the scale and stood still in an upright position, arms along the body, his legs slightly apart; the scale was placed on a firm horizontal surface of the substrate; the weight was measured with an accuracy of 100 grams. The circumference of the lower leg (max); was measured with a measuring tape with the accuracy of the reading results of 5 mm; the respondent was standing in an upright position and naturally relaxed hands along the body, the measurer wrapped the measuring tape around his left lower leg’s upper third at the point of the largest circumference, so that the plane which closes the tape circuit was perpendicular to the longitudinal axis of the lower leg.“ (Dragaš, 1998).
„Props: three mats, a springboard, chalk and a meter. Description of measurement: three mats were placed next to each other in length; the springboard was placed in front of the narrower part of the first mat with its lower part to the edge of the mat. Starting from the first mat to a distance of 1.5 meters short lines are drawn to indicate the decimetre, along the lines at each half a meter. The respondent’s task is to jump with both feet as far as he could. The correct length of the jump was registered from the springboard to the footprint on the mat.“ (Dragaš, 1998).

The respondent sample

The respondent sample consisted of pupils of two primary schools. Primary School ”Serbia“ Pale with male respondents: pupils of VI 1 (10) and VII 2, (13) and the second group consisted of the pupils of VI 4 (9), and VII 1 (6) in the primary “Petar Petrović Njegoš” from Eastern Ilidža.
Chronological age of pupils in VI1 and VI4 class was 13 + - 6 months, while pupils in VII2 and VII1 classes of the mentioned primary schools were 14 + - 6 months old.

The sample of variables

The sample of variables referred to: morphological characteristics and motor abilities: morphological characteristics included the body height (AVIS), the body mass (AMAS), the volume of the right upper leg (ONKD), the volume of the right lower leg (OPKD), the volume of the left upper leg (ONKL), the volume of the left lower leg (OPKL). Motor skills include: standing long jump and standing triple jump as a criterion.
Tests to measure the results were taken after International Biological Program (IBP), as well as by the description in Dragaš, in 1998, for: the height of the body, weight, circumference of

upper and lower leg (right and left). Motor ability referred to standing long jump and was assessed on the mat in the gym with a maximum of one jump in with both feet. Triple standing jump was also measured on the mat without a run-up, and included three longest jumps in with both feet.

Data processing methods

The basic descriptive parameters were calculated, the mean value (MEAN), standard deviation (SD), the minimum (MIN), maximum (MAX) and the numerical result and the standard deviation (Std. Dev.).

In addition to the descriptive statistics we used regression analysis of the impact of the morphological characteristics as predictorial on the motor abilities as criterion variables.

"By factorization of the intercorrelation matrix of latent anthropometric variables (R) and applying the PB criteria three characteristic roots were obtained (three latent variables) that explain 64% of the common variance (CUM%), and individual contribution in explaining the common variance for the first latent variable is 39%, for the second 18%, and 7% for the third. Rotation is performed by Kaiser-Harris orthoblique solution. (Malacko & Popović 1997; Štalec, Momirović 1971).

"Measuring the explosive force is done by creating different tensiometric platforms of various shapes. However, due to the complexity, especially due to the high cost of buying ready-made or creating the new ones, these devices are commonly used in laboratory research. In practice, measurement of explosive power (force submaximal, acceleration at the maximum), is made by jumps (rebounds 1-6) and throwing items of different mass (preferably from 0.2 kg to 7,257 kg)." (Kukolj, 1996).

"Jumps as a means to develop strength, provide encouragement, primarily modalities of explosive strength and they should be run up to 10 times in a row. Jumps may be performed by two-foot take off: high jump, long jump (with starting running or standing), one foot take off: a jump, two jumps, three jumps and so on. Jumping focused on the development of power can be performed in the form of hopping, jumping, leaping, bouncing, skipping, rebound, vaulting, prancing, as well as a great number of combinations of different types and series of jumps, with the possibilities of applying additional load." (Kukolj, 1996).

3. RESULTS WITH DISCUSSION

"Measuring result is a product of the measuring process, which is said to represent a specific implementation of the specified measurement methods. Therefore, the method of measuring is a set of theoretical and practical approaches involved in performing the measurements in accordance with the given measuring principle. The measurement result is with rare exceptions, the value attributed to the measured size. Measurement cannot give true value and therefore it is important to assess the extent of the measurement errors that represent a measure of the quality of the obtained results. The measurement results of corresponding variables can be classified in several ways: according to the objectivity of measurements - quantitative results (data) and qualitative results (data); according to the scale of measurement - nominal (which are counted), ordinal (the order), interval (they can be a negative value) and the rational (they cannot be a negative value)." (Ivanović, 2014).

Table 1, Descriptive Statistics, pupils of VI 1, primary school "Serbia" Pale

	Valid N	Mean	Minimum	Maximum	Std. Dev.
AVIS	10	161,00	141,00	191,00	13,54
AMAS	10	43,10	35,00	55,00	8,41
ONKD	10	38,10	34,00	51,00	5,15
OPKD	10	31,90	27,00	37,00	2,92
ONKL	10	37,30	31,00	48,00	5,10
OPKL	10	31,80	28,00	39,00	3,19

MSDM	10	173,00	154,00	186,00	13,13
MTSM	10	520,10	370,00	600,00	69,83

The basic descriptive parameters were calculated: the mean value (MEAN), standard deviation (SD), the minimum (MIN), the maximum (MAX) numerical results and standard deviation (Std. Dev.); for the morphological characteristic: height of the body (AVIS-mean=161,00; min=141,00; max=191,00), body weight (AMAS-mean=43,10; min=35,00; max=55,00), circumference of the right upper leg (ONKD-mean=38,10; min=34,00; max=51,00), circumference of the right lower leg (OPKD-mean=31,90; min=27,00; max=37,00), circumference of the left upper leg (ONKL-mean=37,00; min=31,00; max=48,00), circumference of the left lower leg (OPKL-mean=31,80; min=28,00; max=39,00), and for motor skills: standing long jump (MSDM-mean=173,00; min=154,00; max=186,00), standing triple jump (MTSM-mean=520,10; min=370,00; max=600,00).

Table 2, Regression analysis of the variable of the height of the body with the standing long jump and triple jump pupils of VI 1, primary school "Serbia" Pale

	Beta	**Std. Err.**	**B**	**Std. Err.**	**t(7)**	**p-level**
Intercept			123,13	65,99	1,87	0,10
MSDM	0,15	0,43	0,16	0,44	0,36	0,73
MTSM	0,10	0,43	0,02	0,08	0,24	0,82

By insight into the Table 2, the total variability of the height of the body has significance for the standing long jump and triple jump R = ,22, or 22%, whereas the corrected R2= ,05

Table 3, Regression analysis of the variables of the weight of the body with the standing long jump and triple jump pupils of VI 1, primary school "Serbia" Pale

	Beta	**Std. Err.**	**B**	**Std. Err.**	**t(7)**	**p-level**
Intercept			32,98	41,58	0,79	0,45
MSDM	0,01	0,43	0,00	0,27	0,02	0,99
MTSM	0,15	0,43	0,02	0,05	0,34	0,74

By insight into the Table 3, the total variability of the weight of the body has significance for the standing long jump and triple jump R= ,15, and 15% respectively, whereas the corrected R2= ,05.

Table 4, Regression analysis of the variable of the circumference of the right upper and lower leg with standing long jump and triple jump pupils of VI 1, primary school "Serbia" Pale

	Beta	**Std. Err.**	**B**	**Std. Err.**	**t(7)**	**p-level**
Intercept			32,67	25,68	1,27	0,24
MSDM	0,08	0,44	0,03	0,17	0,19	0,85
MTSM	-0,01	0,44	-0,00	0,03	-0,02	0,98

By insight into the Table 4, by regression analysis, the impact of the total circumference of the right upper and lower leg on the result of the standing long jump and triple jump is
R= ,08. There is no important effect on the result of the standing long jump and triple jump.

Table 5, Regression analysis of the variable of the circumference of the left upper and lower leg with standing long jump and triple jump pupils of VI 1, primary school "Serbia" Pale

	Beta	**Std. Err.**	**B**	**Std. Err.**	**t(7)**	**p-level**
Intercept			39,58	25,08	1,57	0,16
MSDM	-0,15	0,43	-0,06	0,17	-0,35	0,74
MTSM	0,21	0,43	0,01	0,03	0,47	0,65

By insight into the Table 5, by the regression analysis
The circumference of the left upper and lower leg has a substantial significance R= ,18 with 18%, and 03% respectively, whereas the corrected R^2= ,033.

Table 6, Descriptive Statistics, pupils of VII 2, primary school "Serbia" Pale

	Valid N	Mean	Minimum	Maximum	Std. Dev.
AVIS	13	164,85	153,00	185,00	9,58
AMAS	12	49,67	36,00	80,00	12,21
ONKD	13	39,15	31,00	50,00	5,30
OPKD	13	33,77	29,00	42,00	3,72
ONKL	13	38,08	30,00	48,00	5,01
OPKL	13	32,77	28,00	42,00	3,56
MSDM	13	185,38	148,00	222,00	24,31
MTSM	13	547,69	445,00	650,00	64,67

The basic descriptive parameters were calculated: the mean value (MEAN), standard deviation (SD), the minimum (MIN), the maximum (MAX) numerical results and standard deviation (Std. Dev.); for the morphological characteristics: height of the body (AVIS-mean=164,84; min=153,00; max=185,00), body weight (AMAS-mean=49,67; min=36,00; max=80,00), circumference of the right upper leg (ONKD-mean=39,15; min=31,00; max=50,00), circumference of the right lower leg (OPKD-mean=33,76; min=29,00; max=42,00), circumference of the left upper leg (ONKL-mean=38,07; min=30,00; max=48,00), circumference of the left lower leg (OPKL-mean=32,76; min=28,00; max=42,00), and for motor skills: standing long jump (MSDM-mean=185,38; min=148,00; max=222,00), standing triple jump (MTSM-mean=547,69; min=445,00; max=650,00).

Table 7, regression analysis of the variable of the height of the body with the standing long jump and triple jump (Regression Summary for Dependent Variable), pupils of VII 2, primary school "Serbia" Pale

	Beta	Std. Err.	B	Std. Err.	t(10)	p-level
Intercept			124,49	24,33	5,17	0,00
MSDM	-2,51	1,53	-0,99	0,60	-1,64	0,13
MTSM	2,76	1,53	0,41	0,23	1,80	0,10

By insight into the Table 7, the total variability of the height of the body has high significance for the standing long jump and triple jump R= ,52 or 52%, and 13% respectively, whereas the corrected R^2= ,13

Table 8, Regression analysis of the variables of the weight of the body with the standing long jump and triple jump, pupils of VII 2, primary school "Serbia" Pale

	Beta	Std. Err.	B	Std. Err.	t(9)	p-level
Intercept			56,00	24,11	2,32	0,045
MSDM	-3,61	0,99	-1,94	0,54	-3,62	0,01
MTSM	3,15	0,99	0,65	0,20	3,15	0,01

By insight into the Table 8, by the regressive analysis, the total variability of the weight of the body has high significance for the pupil's results in the standing long jump and triple jump R= ,81, that is, 81%, and 65% respectively, whereas the corrected R2= ,65.

Table 9, Regression analysis of the variable of the circumference of the right upper and lower leg with standing long jump and triple jump, pupils of VII 2, primary school "Serbia" Pale

	Beta	Std. Err.	B	Std. Err.	t(10)	p-level
Intercept			30,53	9,30	3,28	0,01
MSDM	-2,99	1,51	-0,46	0,23	-1,98	0,07
MTSM	2,80	1,51	0,16	0,09	1,86	0,09

By insight into the Table 9, the analysis of circumference of the right upper and lower leg shows significance for the standing long jump and triple jump R.54, i.e. 54% of the total variability, with the pupils of VII 2 class of the primary school "Serbia" Pale, and 29% respectively, whereas the corrected R2= ,29.

Table 10, Regression analysis of the variables of circumference of the left upper and lower leg with the standing long jump and triple jump, pupils of VII 2- primary school “Serbia” Pale

	Beta	Std. Err.	B	Std. Err.	t(10)	p-level
Intercept			33,80	11,27	3,01	0,01
MSDM	-3,56	1,36	-0,73	0,28	-2,62	0,02
MTSM	3,31	1,36	0,26	0,10	2,43	0,03

In Table 10, regression analysis of results of variables of circumference of the left upper and lower leg with the standing long jump and triple jump of pupils of VII 2 class of the primary school “Serbia” Pale shows the significance of R= ,65, or 65%, and 43% respectively, whereas the corrected R^2= , 43.

Table 11, Descriptive Statistics – pupils of VI 4 – primary school “Petar Petrović Njegoš” East Ilidža

	Valid N	Mean	Minimum	Maximum	Std. Dev.
AVIS	9	157,39	141,00	170,00	9,49
AMAS	9	47,78	30,00	65,00	11,18
ONKD	9	43,72	35,00	55,00	6,61
OPKD	9	32,56	26,00	38,50	4,44
ONKL	9	44,33	35,00	53,00	6,96
OPKL	9	32,33	26,00	38,00	4,33
MSDM	9	175,00	130,00	200,00	21,89
MTSM	9	424,44	350,00	500,00	46,33

The basic descriptive parameters were calculated: the mean value (MEAN), standard deviation (SD), the minimum (MIN), the maximum (MAX) numerical results and standard deviation (Std. Dev.); for the morphological characteristics: height of the body (AVIS-mean=157,38; min=141,00; max=170,00), body weight (AMAS-mean=47,78; min=30,00; max=65,00), circumference of the right upper leg (ONKD-mean=43,72; min=35,00; max=55,00), circumference of the right lower leg (OPKD-mean=32,55; min=26,00; max=38,50), circumference of the left upper leg (ONKL-mean=44,33; min=35,00; max=53,00), circumference of the left lower leg (OPKL OPKL-mean=32,33; min=26,00; max=38,00), and for motor skills: standing long jump (MSDM-mean=175,00; min=130,00; max=200,00), standing triple jump (MTSM-mean=424,44; min=350,00; max=500,00).

Table 12, regression analysis of variables for the body height with the standing long jump and triple jump, pupils of VI 4 - Primary school “Petar Petrović Njegoš” East Ilidža

	Beta	Std. Err.	B	Std. Err.	t(6)	p-level
Intercept			148,59	35,14	4,23	0,00
MSDM	-0,56	0,55	-0,26	0,26	-1,01	0,35
MTSM	0,62	0,55	0,15	0,13	1,13	0,30

In Table 12, the regression analysis of variables in the body height with the standing long jump and triple jump is associated with 43%, or R= .43, pupils of VI 4 - primary school “Petar Petrović Njegoš” East Ilidža, and 18% respectively, whereas the corrected R^2= ,18.

Table 13, the regression analysis variables of the weight of the body with the standing long jump and triple jump pupils of VI 4 – primary school “Petar Petrović Njegoš” East Ilidža

	Beta	Std. Err.	B	Std. Err.	t(6)	p-level
Intercept			162,99	42,38	3,84	0,00
MSDM	0,26	0,38	0,11	0,16	0,69	0,51
MTSM	-0,29	0,38	-0,06	0,08	-0,77	0,47

The review of the results in Table 13, the regression analysis of variables of the body weight with the standing long jump and triple jump is associated with 38%, or R= .38, pupils of VI 4 - primary school "Petar Petrović Njegoš" East Ilidža, and 14% respectively, whereas the corrected R^2= ,14.

Table 14, regression analysis of the variables of circumference of the right upper and lower leg with the standing long jump and triple jump (Regression Summary for Dependent Variable), pupils of VI 4 – primary school "Petar Petrović Njegoš" East Ilidža

	Beta	Std.Err.	B	Std.Err.	t(6)	p-level
Intercept			82,89	27,55	3,01	0,02
MSDM	-0,30	0,35	-0,09	0,11	-0,85	0,43
MTSM	-0,38	0,35	-0,05	0,05	-1,09	0,32

In Table 14, the regression analysis variables of circumference of the right upper and lower leg shows the impact on the standing long jump and triple jump with the significance of R= .50 or 50% of pupils of VI-4- primary school "Petar Petrović Njegoš" East Ilidža, and 25% respectively, whereas the corrected R^2= ,25.

Table 15, regression analysis of the variables of circumference of the left upper and lower leg with the standing long jump and triple jump, pupils of VI 4 – primary school "Petar Petrović Njegoš" East Ilidža

	Beta	Std.Err.	B	Std.Err.	t(6)	p-level
Intercept			74,32	31,24	2,38	0,05
MSDM	-0,23	0,38	-0,07	0,12	-0,59	0,57
MTSM	-0,27	0,38	-0,04	0,06	-0,72	0,50

Table 15, regression analysis of the variables of the circumference of the left upper and lower leg has very little significance with the standing long jump and triple jump of R= .36 or 36% the pupils of VI 4 – primary school "Petar Petrović Njegoš" East Ilidža, and 13% respectively, whereas the corrected R^2= ,13.

Table 16, Descriptive Statistics, pupils of VII 1 - primary school "Petar Petrović.Njegoš" East Ilidža

	Valid N	Mean	Minimum	Maximum	Std.Dev.
AVIS	6	167,17	159,00	178,00	7,25
AMAS	6	58,67	47,00	72,00	8,85
ONKD	6	46,00	40,00	52,00	5,55
OPKD	6	35,33	32,00	40,00	3,20
ONKL	6	45,50	40,00	50,00	4,68
OPKL	6	34,33	30,00	39,00	3,50
MSDM	6	165,67	110,00	195,00	30,71
MTSM	6	386,67	300,00	430,00	47,19

The basic descriptive parameters were calculated: the mean value (MEAN), standard deviation (SD), the minimum (MIN), the maximum (MAX) numerical results and standard deviation (Std.Dev.); for the morphological characteristic: height of the body (AVIS-mean=167,16; min=159,00; max=178,00), body weight (AMAS-mean=46,00; min=40,00; max=52,00), circumference of the right upper leg (ONKD-mean=46,00; min=40,00; max=52,00), circumference of the right lower leg (OPKD-mean=35,33; min=32,00; max=40,00), circumference of the left upper leg (ONKL-mean=34,33; min=30,00; max=50,00), circumference of the left lower leg (OPKL-mean=34,33; min=30,00; max=39,00), and for motor skills: standing long jump (MSDM-mean=165,00; min=110,00; max=195,00), standing triple jump (MTSM-mean=386,67; min=300,00; max=430,00).

Table 17, the regression analysis of variables in the body height with the standing long jump and triple jump, pupils of VII 1 - primary school “Petar Petrović Njegoš” East Ilidža

	Beta	Std.Err.	B	Std.Err.	t(3)	p-level
Intercept			41,85	111,37	0,375	0,735
MSDM	-4,64	5,38	-1,09	1,27	-0,86	0,45
MTSM	5,16	5,38	0,79	0,83	0,96	0,41

In Table 17, the regression analysis of variables of the body height has impact of R= .66 or 66% on the standing long jump and triple jump of the pupils of VII 1 - primary school ,,Petar Petrović Njegoš" East Ilidža, and 13% respectively, whereas the corrected R^2= ,13.

Table 18, the regression analysis of variables in the body weight with the standing long jump and triple jump, pupils of VII 1 - primary school “Petar Petrović Njegoš” East Ilidža

	Beta	Std.Err.	B	Std.Err.	t(3)	p-level
Intercept			105,14	178,27	0,59	0,59
MSDM	1,81	7,06	0,52	2,03	0,26	0,81
MTSM	-1,83	7,06	-0,34	1,32	-0,26	0,81

Review of results in Table 18, the regression analysis of variables of the body weight with the standing long jump and triple jump of pupils of VII 1 - primary school ,,Petar Petrović Njegoš" East Ilidža shows little impact of R= .15, or 15%, and 13% respectively, whereas the corrected R^2= ,13.

Table 19, the regression analysis variables of circumference of the right upper and lower leg with the standing long jump and triple jump pupils of VII 1 – primary school “Peter Petrović Njegoš” East Ilidža

	Beta	Std.Err.	B	Std.Err.	t(3)	p-level
Intercept			49,77	101,80	0,49	0,65
MSDM	-1,02	6,43	-0,18	1,16	-0,16	0,88
MTSM	0,59	6,43	0,07	0,76	0,09	0,93

In Table 19, the regression analysis of variables of circumference of the right upper and lower leg shows significance of R= .43 or 43% with the standing long jump and triple jump of the pupils of VII 1, primary school “Peter Petrović Njegoš” East Ilidža, and 19% respectively, whereas the corrected R^2= ,19.

Table 20, the regression analysis of variables of circumference of the left upper and lower leg with the standing long jump and triple jump (Regression Summary for Dependent Variable) with pupils of VII 1 – primary school “Peter Petrović Njegoš” East Ilidža showed the following:

	Beta	Std.Err.	B	Std.Err.	t(3)	p-level
Intercept			32,99	89,25	0,37	0,74
MSDM	-1,89	6,68	-0,29	1,02	-0,28	0,79
MTSM	1,58	6,68	0,16	0,66	0,23	0,83

In Table 20, the regression analysis of variables of circumference of the left upper and lower leg shows significance of R= .35 or 35% with the standing long jump and triple jump of the pupils of VII 1, primary school “Petar Petrović Njegoš” East Ilidža, and 12% respectively, whereas the corrected R^2= ,12.

"The importance of determining the relationship between motor abilities and morphological characteristics stands out because it is possible to determine that part of the variability in the motor efficiency resulting from the variability of morphological characteristics. Scientific studies have identified the most appropriate morphological structures for success in individual sports disciplines allowing for obtaining valid prognostic information for guidance and the

selection of athletes. Increasing number of studies of the relationship of the motor and morphological space refers either to the relatively completely defined particular areas of motor space (strength, speed, endurance, and coordination), or to the entire motor space, whereas the morphological space is defined by anthropometric measures that represent basic latent anthropometric dimensions: longitudinal, transversal, volume and body mass and subcutaneous adipose tissue)." (Pržulj, 2010)

4. CONCLUSION

This study encompassed the pupils of two primary schools: Primary School in Pale and Primary School in Eastern Ilidža. The respondent sample consisted of pupils of two primary schools: Primary school of "Serbia" Pale with male respondents: pupils of VI 1 (10) 2 and VII (13) and the second group consisted of the pupils of VI 4 (9) and VII 1 (6) – from the primary school "Petar Petrović Njegoš" in Eastern Ilidža. The sample of variables referred to: morphological characteristics and motor abilities: morphological characteristics included the body height (AVIS), the body mass (AMAS), the circumference of the right upper leg (ONKD), the circumference of the right lower leg (OPKD), the circumference of the left upper leg (ONKL), the circumference of the left lower leg (OPKL). Motor skills include: standing long jump and standing triple jump as a criterion. Looking at Table 2, the total variability of the height of the body has a very significant influence on the standing long jump and triple jump of R= ,52 or 52%. With pupils of VII 2 class of the primary school "Serbia" Pale, the results of Table 8, by the regression analysis show that the weight of the body has a very high level of significance for the standing long g and triple jump of the pupils of R= ,80, or 80%, with pupils of VII 2 class of the primary school "Serbia" Pale. Looking at Table 9, the analysis of variables of circumference of the right upper and lower leg has significance in standing long jump and triple jump of R.54, or 54% of the total variability, with the pupils in the class VII 2, Primary School "Serbia" Pale. In Table 10, the regression analysis of variables results of circumference of the left upper and lower leg with the standing long jump and triple jump of the pupils of VII 2 class of primary school "Serbia" Pale shows significance of R= .65 or 65%. Regression analysis of the variables of the height of the body with the standing long jump and triple jump is associated with 42%, or R= .42 with the pupils of VI 4 class of the primary school "Petar Petrović Njegoš" East Ilidza. The regression analysis of the variables of circumference of the right upper and lower leg shows impact on the standing long jump and triple jump with the significance of R= .50 or 50% with the pupils of VI 4 class of the primary school "Petar Petrović Njegoš" East Ilidža.

"The following results are most important for the relationship between morphological characteristics and motor abilities:

1. A very high level of significance of the results in the standing long jump and triple jump were shown by the pupils of VII2 class of the Primary School ,,Serbia" in Pale, with 81%,
2. The variable volume of the left upper and lower leg with the standing long jump and triple jump is very high with pupils of VII2 grade of the Primary School ,,Serbia" in Pale, with 65%,
3. The variable volume of the right upper and lower leg with the standing long jump and triple jump with 54% of the total variables with the pupil in VII2 class of the Primary School ,,Serbia" in Pale is of quite significant effect,
4. The regression analysis of the variable height of the body with the standing long jump and triple jump has significance of 66% with the pupils of VII1 grade of the Primary School ,,Petar Petrović Njegoš" in East Ilidža,
5. An analysis of the variables of the right upper and lower leg with a standing long jump and triple jump had significance of 43% with the pupils of VII1 grade of the Primary School ,,Petar Petrović Njegoš" in East Ilidža,

6. All other variables were statistically significant, but in a much lesser percent.

Taking all above into consideration, it is possible to confirm the impact and the relationship of morphological characteristics with motor skills.

This segment of research, although based on a narrow target group with fewer respondents gave confirmation that the morphological structures have success in individual sports disciplines.

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