COMPARISON OF MORPHOLOGICAL AND MOTOR CHARACTERISTICS BETWEEN VOLLEYBALL PLAYERS AND NON – VOLLEYBALL PLAYERS AGED 16-17

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Abstract

Introduction: In this scientific work are included two categories of age groups 16-17 years, 30 of them were from the volleyball club "Peja" in Peja who are trained regularly, and 30 others were from the school "Bedri Pejani" in the same place who play two times a week. The purpose of this study is to distinguish between volleyball and non – volleyball. In this research, six morphological variables: body weight, body length, wing perimeter, thigh circumference, leg length, the length of the palm of the hand and four motor variables: abdominal muscles, back muscles, 20m running and standing high jump are used. Methods: used in this scientific paper are descriptive analysis and correlation analysis to see the relation and T-test to see the difference between the two categories. From the results we understood that there are statistically significant differences between the two categories of volleyball and non-volleyball. There are usually differences between the morphological parameters, in the mean value and distribution, as well as the value of the degree of curvature. Conclusion: Considering the purpose of the research and the objective of this paper, which was the confirmation of the differences between the team Club "Peja" and "Bedri Pejani" school students we can stylistically conclude that the results obtained have shown that there are differences in morphological characteristics but not a valid significance. From the correlational analysis we understand that for the team of Club "Peja" we have significant correlation between morphological and motor parameters, there is also a relationship between morphological and motor parameters in the team of "Bedri Pejani" school in Peja.

Keywords: Volleyball, game, motor skills, morphological

1. Introduction

Volleyball is a collective sports game known as the sport of the future, it is constantly evolving, adapting and finding new attractive models of organization. In terms of structure, volleyball movements belong to the group of complex polystyrene sports. Through the game are achieved some changes in anthropological features like those for intellectual and willpower especially motor skills.

Like a sportive game it is important for: skills, technique, tactical, physical - motor skills which without them the game wouldn't be interesting, attractive, esthetical and competitive game with one word. Morphological characteristics are very important in the realization of motor structures in which they are the real biomechanical basic whether as mitigating factors or those that makes the work more difficult. The main purpose of this research is to make a comparison between volleyball players and non-volleyball players aged 16-17 and to ascertain the morphological and motor variables. The purpose of this paper is to strengthen the validation of important legality for achieving quality results in volleyball game. Through this scientific paper we will try to confirm the manifestations of morphological and motor skills as well as the differences between volleyball players and non-volleyball players. Research of morphological and motor characteristics was a subject of research of other authors: Blaskovic 1993, Petrovic 2009, Repija 2012, Ljubojević Višnjić dhe Ilić 2012, H. Bytyqi 2017.

2. Research methods

In this research are included two groups of categories. First category plays always volleyball (volleyball club Peja) and second category which plays volleyball two times in week (high-school students).

Here are included 30 volleyball players of Club "Peja" in Peja and 30 students of "Bedri Pejani" school in the same place.

In this project are used 6 morphological variable and 4 motor variable. Measurements are made of rules from Eurofit test. Those morphological variables were chosen from this order: BOWE-Body weight, BOHE-Body height, LELE –Leg length, THCI-Thigh circumference, ARLE – Arm length and LPH – The length of the palm of the hand. Although motor variable are: SHJ – Standing high jump, R20M- 20 meter run, MUAB – Abdominal muscles and MUBA – muscles back. In this science project is used descriptive analysis and correlation analysis to define the connection between morphological variable and motor also the T-test to make a comparison between 2 groups.

3. Results and discussion

Table 1. Club "Peja" descriptive analysis

	N	Minimum	Maximum	Mean	St. Deviation	Skewness	Kurtosis
BOWE	30	56.00	92.50	74.25	3.1935	.716	-,465
BOHE	30	1,70	1,93	1,815	.14205	-5.422	12.038
LELE	30	92	115	103.5	0.3651	2.362	17.00
THCI	30	42	62.5	52.25	.04278	-.635	.059
ARLE	30	70	92	80.5	.40341	2.212	2.310

LPH	30	18.5	26	44.5	.05201	-.731	.627
SHJ	30	.42	.65	0.53	.31530	-.063	-.650
R20M	30	3.04	3.57	3.30	.42120	-.0723	-431
MUAB	30	16	24	20.00	.52241	.4313	.08992
MUBA	30	34	50	42.00	.41223	.21041	.03233

First table tells about results of statistical procedures of descriptive morphological variables and motor. At morphological analysis we see at body weight BOWE we have a high average while the distribution is low from .716 while to the degree of curvature which is negative -.465. At BOHE body height we have a high average. From the morphological and motor tests we can see the most of variables have a high average low distribution.

Table 2. Correlation analysis Club "Peja"

	BOWE	BOHE	LELE	THCI	ARLE	LPH	SHJ	R20M	MUAB	MUBA
BOWE	1									
BOHE	.076	1								
LELE	.-412	.008	1							
THCI	-.049	.051	-.241	1						
ARLE	.502	.037	.034	.013	1					
LPH	.168	.495	-.154	.224	.344	1				
SHJ	.156	-245	.241	.233	-411	-.451	1			
R20M	-.211	.324	.039	-.240	.124	-.413	.411	1		
MUAB	-.324	-.234	.871	.412	.511	-.241	-512	.334	1	
MUBA	0.312	.414	.341	.334	.512	.-551	.412	-.351	.151	1

From the above results we have used the correlation method, through which we will find the important statistical correlation between the parameters. Body height (BOHE), has significant statistical correlation with the motor parameter jumping from the ground (-211) with high correlation of .411 The morphological parameter of the arm (THCI) has significant correlation only with the morphological parameter of the thigh (ARLE), where we have a negative correlation of -.241

Table 3. "Bedri Pejani" Descriptive analysis

	N	Minimum	Maximum	Mean	St. Deviation	Skewness	Kurtosis
BOWE	30	59.00	96.00	77.50	4.3435	.943	-,547
BOHE	30	1,54	1,89	1,71	.13405	-4.232	10.038
LELE	30	86	107	96.5	0.1451	1.362	14.50
THCI	30	50	65	57.5	.06754	-.454	.052
ARLE	30	65	86	75.5	.50234	3.523	3.201
LPH	30	16.5	22	19.25	.04201	.531	.736
SHJ	30	.30	.58	0.44	.23420	-.076	-.746
R20M	30	3.10	3.68	3.39	.52340	-.0823	-631
MUAB	30	13	22	17.5	.14231	.3252	.07822
MUBA	30	27	42	34.5	.31223	.21338	.02423

From the morphological analyzes such as BOWE, BOHE, ARLE AND THCI of the school team "Bedri Pejani" we see that the average arithmetic values are high, while the distributions are low and negative, and also the degree of curvature is negative and relatively low. While LPH has a relatively low average, the distribution is positive and low with a relatively high positive curve. Motor parameters have large differences in relation to average values and distribution, as well as the degree of curvature. The biggest difference lies in the standing high jump from the place (SHJ) where there is a low average value, while a negative distribution and high curvature is seen.

Table 4. Bedri Pejani Correlation analysis

	BOWE	BOHE	LELE	THCI	ARLE	LPH	SHJ	R20M	MUAB	MUBA
BOWE	1									
BOHE	.087	1								
LELE	.- 613	.009	1							
THCI	-.058	.063	-.354	1						
ARLE	.405	.053	.054	.011	1					
LPH	.174	.546	-.163	.324	.245	1				
SHJ	.178	-423	.352	.321	-356	-.765	1			
R20M	-.342	.356	.075	-.345	.234	-.535	.411	1		
MUAB	-.634	-.534	.523	.453	.434	-324	-234	424	1	
MUBA	0.423	.245	.244	.535	.567	.-345	.543	-.332	.134	1

From the above results we have used the correlation method, through which we will find the important statistical correlation between the parameters. Body height (BOHE), has significant statistical correlations with the motor parameter high jump from the ground (SHJ) with high correlation. The morphological parameter of the arm (ARLE) has significant correlations only with the morphological parameter of the thigh (THCI), where we have a positive correlation.

Table 5. T-Test the differences between the volleyball club "Peja" and "Bedri Pejani" school students

	Differences	N	Mean	St. Deviation	T	Sig-2 tailed
BOWE	1	30	74.25	3.1935	1.065	.356
	2	30	77.5	4.3435	1.098	.687
	1	30	1.815	.14205	.0564	.573

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BOHE	2	30	1.71	.13405	.0987	.196
LELE	1	30	103.5	0.3651	-.089	.011
	2	30	96.5	0.1451	-.308	.756
THCI	1	30	52.25	.04278	-364	.042
	2	30	57.5	.06754	-.096	.075
ARLE	1	30	80.5	.40341	.0334	.654
	2	30	75.5	.50234	.0324	.543
LPH	1	30	44.50	.05201	.0296	.086
	2	30	19.25	.04201	.0876	.654
SHJ	1	30	.53	.31530	.0589	.565
	2	30	0.44	.23420	.0798	.876
RM20M	1	30	3.30	.42120	.0876	.546
	2	30	3.39	.5234	.0648	.678
MUAB	1	30	20.00	52241	.0456	.457
	2	30	17.5	.14231	.0654	.197
MUBA	1	30	42.00	.41223	-.087	.037
	2	30	34.5	.31223	-.395	.367

Regarding the results obtained, we found that there are differences between them of the Peja Club and the school "Bedri Pejani" in Peja in the motor and morphological area in favor of the Peja Club. The morphological results processed through the T-test method analysis have shown there are differences in some variables in the morphological characteristics in favour of Club" Peja". Whereas concerning motor variables, valid statistic results have been obtained in some variables in favour of student's school "Bedri Pejani" in Peja.

From the results of the table we notice that most of the variables have a normal range of results where most of them have positive asymmetry except for some that are negative.

4. Conclusion

Considering the purpose of the research and the objective of this paper, which was the confirmation of the differences between the team Club "Peja" and "Bedri Pejani" school students we can statistically conclude that the results obtained have shown that there are differences in morphological characteristics but not a valid significance. Also we can conclude that there are statistically significant differences between the two categories of volleyball and non – volleyball in the game in terms of morphological and motor parameters. There are usually differences between the morphological parameters, ie the mean value and distribution, as well as the degree of curvature.

Based on the summary of the results we came to the conclusion that the data results of the motor variables were influenced by their selection because both groups were aged 16 - 17 and the choice is that the "Peja" team had exercised continuously and have more results better than students who played volleyball only two times a week. From the correlational analysis we understand that for the team of Club "Peja" we have significant correlation between morphological and motor parameters, there is also a relationship between morphological and motor parameters in the team of "Bedri Pejani" school in Peja.

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