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Changes in some morphological characteristics and motor skills between female volleyball players and female handball players

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Abstract

The population from which the sample is taken for this paper is defined as the population of senior culminating athletes in the game of volleyball and handball, in the Kosovo superleague. The sample for the purposes of this research will include 100 female athletes, respectively, 50 female volleyball players and 50 female habdball players. The variables that are applied in this research are anthropometric and motor variables. 8 anthropometric variables and 7 motor variables were applied.

The results obtained from the collection of information and their processing, shows that the gained differencies between female volleyball players and female handball players in the motor variables of the explosive and situational force, indicate that during the preparatory phase in the volleyball game, it was expercised in the right way in the raising of these motor skills, while it was not given enough in the importance to the expercises of the explosive force of lower extremities.

Keywords: female volleyball players, female handball players, anthropometric characteristics, motor skills, T-test.

Introduction

Team sports are very complex activities, which means that activities during the game can only be accomplished with the action of a variety of motor and anthropometric characteristics. The results achieved by a female volleyball player and female handball player during the game depends on various factors that affect its effectiveness.(Trunić & Mladenović, 2014). All the factors cannot equally influence in the outcome, nor can they be individually analyzed without an adequate link to other factors. On the other hand, a factor does not have the same coefficient of correlation with other factors, but varies.

Volleyball and Handball, as well as other sports branches, require a certain level of functioning of anthropological factors, so that players can successfully operate in situational conditions. In addition to the variety of sports, of course, there is a variety of structures of skills and anthropological characteristics between athletes, because if we do not have knowledge of these characteristics and anthropological skills, research of training tools, methods and exercise loads, and their impact on developing of anthropological skills and characteristics would be meaningless and unnecessary. (Malacko and Rađo, 2004).

Therefore, the aim of the paper is to verify the impact of specific exercises and race sfecifics on some morphological characteristics and motor skills to the athletes of team sports, namely, volleyball and handball.

The secondary purpose of the paper is to verify the difference between female volleyball players and female handball players in some anthropometric characteristics and motorskills.

Methods

The sample of examinees

The population from which sample is taken for this paper is defined as the population of senior culmaninating athletes in the game of volleyball and handball, in the Kosovo super league. The sample for the purpose of this survey will include 60 athletes, respectively, 30 female volleyball players and 30 female handball players.

The sample of variables

The variables that are applied in this research are anthropometric and motor variables. 8 anthropometric variables and 7 basic motor variables were applied, as follows:

APESHA-Body weight, APERGJ- Chest perimeter,APERKR-Arm’s perimeter, APERKO-Thigh perimeter, APERKË- Lower leg perimeter, AIDHSH- Fat tissue inside skin of the back, AIDHKR- Fat tissue inside skin of the arm, AIDHBA- Fat tissue inside skin of the stomach,

MVR20L- Running 20 meters from the high start, MKGJVE- Long jump from place,MKLAVE- High jump from place, MTADOR- Tapping with hand, MTAKËM- Tapping with foot, MHTMGJ- Throwing of medicine ball from the chest, MHTMSH- Throwing the medicine ball from the lying position on the back.

Statistical analysis

The importance of the distinction between groups (female volleyball players and female handball players) in the morphological and motor variables is determined by the T-testi for independent samples. The statistical significance of T- testit is at the level (P <.01). For statistical data processing is used the program SPSS 21 fo*r Windows.*

Results and discussion

During the inspection of(Table 1 and 2), we understand that in anthropometric variables, female volleyball players as well as female handball players have achieved quite homogeneous results and despite the minimum and maximum result, in some variables there is a large difference. It is understood that both volleyball players and handball players from our sample have close correlation between themselves in their morphological capacity.

Table 1. Basic statistical parameters of anthropometric variables to the volleyball players

Voleyball players	N	Mini	Maxi	Mean	DV	Skew	Kurtosis	Kv
APESHA	50	51	78.8	63.55	6.8	0.336	-0.27	10.7
APERGJ	50	80	94.5	87.27	3.57	-0.064	-0.38	4.09
APERKR	50	21.7	31	26.86	2.36	-0.115	-0.27	8.8
APERKO	50	45.4	63	55.05	4.7	-0.185	-0.67	8.54
APERKË	50	30.2	40.5	35.96	2.3	-0.402	0.321	6.41
AIDHSH	50	6.8	19.6	13.53	3.72	-0.202	-1.08	27.5
AIDHKR	50	6.8	21.4	13.71	4.05	-0.036	-0.94	29.5
AIDHBA	50	8.2	20	13.72	3.84	0.133	-1.5	28

Table 2. ***Basic statistical parameters of anthropometric variables to the handball players***

	N	Min	Max	Mean	DS	Skew	Kurt	Kv
APESHA	50	50	85.5	62.2	7.33	0.994	2.385	7.14
APERGJ	50	83	98.4	88.8	3.48	0.626	0.592	15.23
APERKR	50	22.4	31.1	25.99	2.07	0.555	-0.192	15.15
APERKO	50	47.5	63.3	53.56	4.24	0.379	-0.749	16.13
APERKË	50	31.4	39.4	35.28	2.15	0.304	-0.795	23.99
AIDHSH	50	6.2	18	13.73	3.17	-0.635	-0.189	12.98
AIDHKR	50	10.4	18.8	14.61	2.22	-0.221	-0.358	13.41
AIDHBA	50	9.2	18	13.72	2.27	-0.051	-0.778	7.14

From the data of (Tabeles 3 and 4), female volleyball players in the case of variable Running 20 meters show an abnormal distributio with SKEW=1.045 while in all other variables indicate that although there is a marked difference between the minimum and maximum score, elasticity and convexity gained (Skew dhe Kurt) indicate a normal asymetry and distribution.

Taking into consideration the characteristics of the volleyball field, volleyball players do not undergo long runs during their games and it is understandable that such a result is also achieved.

Table 3. Basic statistical parameters of motor variables to the handball players

Volleyball players	N	Min	Max	Mean	DS	Skew	Kurt	Kv
MVR20L	50	3.2	4.4	3.6	0.26	1.045	1.747	7.22
MKGJVE	50	151	254	191.2	29.1	0.572	-0.67	15.2
MKLAVE	50	31	56	41.83	6.34	0.527	-0.2	15.2
MTADOR	50	25	43	33.83	5.46	0.177	-1.05	16.1
MTAKËM	50	11	31	21.5	5.16	-0.192	-0.8	24
MHTMGJ	50	470	830	626	81.2	0.497	0.158	13
MHTMSH	50	440	860	628	84.2	0.381	1.083	13.4

Table 4. ***Basic statistical parameters of motor variables to the handball players***

	N	Min	Max	Mean	DS	Skew	Kurt	Kv
MVR20L	50	3.51	4.68	3.9	0.3	0.829	0.595	7.15
MKGJVE	50	147	211	180.2	17.7	0.284	-0.71	9.83
MKLAVE	50	27	48	37	6.1	-0.114	-1.04	16.4
MTADOR	50	14	46	30.2	7.7	0.076	-0.7	25.4
MTAKËM	50	12	23	18.5	3	-0.481	-0.48	16.4
MHTMGJ	50	505	710	607.5	56.6	-0.118	-0.86	9.32
MHTMSH	50	495	750	623.8	68	0.08	-1.18	10.9

From the data of (Table 5.), we can conclude that morphological characteristics based on anthropometric variables of volleyball players are not distinguished from the morphological characteristics of the handball players. Almost the morphological parameters of volleyball players and handball players are the same (with very small and statistically insignificant differences).

The obtained results show that during the women's selection phase for the volleyball or handball game they did not pay attention to their morphological characteristics, but the desire to play in the concrete sport.

Table 5. The difference between volleyball and handball players in anthropometric variables

	Levene's Test for Equality of Variances		**Independent Samples Test, t-test for**					**95% Conf.**	
			Equality of Means					Interval of the Diff.	
	F	Sig.	t	df	Sig.	Mean Diff.	Std. Error Diff.	Loëer	Upper
APESHA	0	1	0.743	58	0.46	1.357	1.83	-2.298	5.011
			0.743	57.68	0.46	1.357	1.83	-2.298	5.011
APERGJ	0.07	0.8	-1.68	58	0.098	-1.53	0.91	-3.352	0.292
			-1.68	57.97	0.098	-1.53	0.91	-3.352	0.292
APERKR	0.16	0.7	1.505	58	0.138	0.863	0.57	-0.285	2.012
			1.505	57.02	0.138	0.863	0.57	-0.285	2.012
APERK0	0.43	0.5	1.283	58	0.205	1.483	1.16	-0.831	3.798
			1.283	57.41	0.205	1.483	1.16	-0.832	3.798
APERKË	0.02	0.9	1.183	58	0.242	0.68	0.58	-0.471	1.831
			1.183	57.71	0.242	0.68	0.58	-0.471	1.831
AIDHSH	1.97	0.2	-0.22	58	0.823	-0.2	0.89	-1.986	1.586
			-0.22	56.59	0.823	-0.2	0.89	-1.986	1.586
AIDHKR	12.6	0	-1.07	58	0.291	-0.897	0.84	-2.583	0.789
			-1.07	44.97	0.293	-0.897	0.84	-2.593	0.8
AIDHBA	16.4	0	0.008	58	0.993	0.007	0.81	-1.622	1.635
			0.008	47.08	0.993	0.007	0.81	-1.63	1.643

Also the results show that we do not have a professional job in these two sports, because the results so far show that the best results in concrete sports are generally achieved by those athletes whose body structure is adopted to the demands of the sport, the need for this adaptation comes to the point when the competition is in the higher level.

Also, the success in the game of volleyball or handball depends on the morphological characteristics of volleyball or handball players formed after a long period of exercises and competitions, from which the height and weight of the body occupy the most random place depending on the age (Marelić, Đurković dhe Rešetar, 2008).

Table 6. The difference between volleyball and handball players in motor variables

	Levene's Test for		**Independent Samples Test, t-test for Equality of Means**					**95% Confidence**	
	Equality of Variances							Interval of the Difference	
	F	Sig.	t	df	Sig. (2-tailed)	Mean Diff.	Std. Error Diff.	Loëer	Upper
MVR20L	0.32	0.6	-4.84	58	0.000	-0.337	0.07	-0.477	-0.198
			-4.84	57.53	0.000	-0.337	0.07	-0.477	-0.198
MKGJVE	7.64	0	1.762	58	0.083	10.97	6.22	-1.492	23.426
			1.762	47.89	0.084	10.97	6.22	-1.549	23.482
MKLAV	0	1	2.995	58	0.004	4.8	1.6	1.592	8.008
			2.995	57.9	0.004	4.8	1.6	1.591	8.009
MTADOR	3.77	0.1	2.137	58	0.037	3.667	1.72	0.231	7.102
			2.137	52.44	0.037	3.667	1.72	0.224	7.11
MTAKËM	7.64	0	2.778	58	0.007	3.033	1.09	0.848	5.219
			2.778	46.85	0.008	3.033	1.09	0.837	5.23
MHTMGJ	2.5	0.1	1.023	58	0.311	18.5	18.1	-17.7	54.695
			1.023	51.8	0.311	18.5	18.1	-17.79	54.788
MHTMSH	0.13	0.7	0.214	58	0.831	4.233	19.8	-35.33	43.8
			0.214	55.54	0.831	4.233	19.8	-35.37	43.837

From the data of (Table 6.), we can conclude that the motor skills: the explosive force of the lower extremities, the segmental speed of the extremities and the running speed based on the results obtained in the volleyball players are higher where there is a difference statistically significant at level (P <.01) and (P <.05). This shows that many technical-tactical requirements in the volleyball game are characterized by frequent changes of frontal and sagittal levels

during the execution of certain techniques during the game or training sessions, different types of jumpings depending on the game situation etc (Nešić, 2008).

These specific situations during the game require adequate physical or conditional preparation and high performance in relation to sports technique, tactics and general and specific conditional preparation. By controlling the distribution between the gropup of the volleyball and handball players, but also the importance of the T-testit, it is confirmed that the T-testi showed statistically significant differences analyzed in this research. The results from the above tables also show that with female volleyball players is worked more professionally in all the stages of conditional preparation.

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