RELATIONSHIPS IN SOME ANTROPOMETRIC AND MOTORIC CHARACTERISTICS BETWEEN BASKETBALL PLAYERS AND NON-BASKETBALL PLAYERS OF THE NEW CADETS

Ervin Halimi, Ylli Shehu, Bedri Shehu, Besim Morina

University of Tetova, Faculty of Physical Education, Master student, RNM
Corresponding author e-mail: ervinibeast@gmail.com

Abstract

The research sample consists of male students aged 14-15 ($\pm$ 6 months). The total sample from a total of 60 entities is divided into two groups. The first group includes 30 students from three basketball clubs in the city of Prishtina, KB "Marigona Hill Prishtina", KB "Ulpiana" and KB "Sigal Prishtina". The second group included 30 students of grades IX and X, students of lower secondary school "Zenel Hajdini" and students of high school "Xhevdet Doda" of Prishtina. It is important to note that club students have an average of about 3 years of regular exercise three hours a week. The main purpose of this paper is to confirm the difference in the anthropometric and motor spaces of the group of students who practice in basketball clubs and students who do not exercise near clubs. The Sample of variables includes: 5 anthropometric variables, 5 basic motor variables and three specific motor variables. Based on the purpose of the research, the following statistical methods were selected: Discriminatory analysis, cross-correlations according to Pearson and T-test. After processing the results and analyzing them, it was possible to confirm the hypotheses. According to the first hypothesis which states that: It is expected that anthropometric and motor variables will have a normal distribution of results, it has been partially confirmed. Hypothesis 2, Significant correlations between anthropometric and motor variables are expected. It is fully proven. Hypothesis 3, It is expected that there will be differences between the groups tested in the two areas surveyed. It is fully proven. This paper has theoretical and practical value as it provides an overview of the status of test takers for applied variables and provides trainer data to clubs on the status of the group of club students and provides opportunities to select potential talents from the group of school students. .

Keywords: Relationships, anthropometric, motor characteristics, basketball players, young cadets

1. Introduction

Basketball according to the character of the movements is part of the complex polystructural sports group. The movements that are applied during the basketball game engage all the muscle groups of the locomotor apparatus, the basketball game is also characterized by high intensity and dynamics which positively affects the muscular organs, vascular cardio, respiratory affecting the formation and development of the right the body of the exerciser.

2. Purpose of the research

The main purpose of this paper is to confirm the difference in the anthropometric and motor spaces of the group of students who practice in basketball clubs and students who do not exercise near clubs. Among the other purposes of this paper is to note the current state of some anthropometric and motor characteristics of two groups of young males of the age group 14-15 years (± 6 months). As well as another purpose of this research is to be able to prove the relationship between anthropometric and motor variables.

3. Methods

The research sample is composed of male students of the age group 14-15 years (± 6 months), in this composition: 30 students of basketball clubs in the city of Prishtina, more precisely of the KB "Marigona Hill Prishtina", KB "Ulpiana" and KB "Sigal Prishtina", as well as 30 students of the two schools of the city of Prishtina, the one of the lower secondary school "Zenel Hajdini" and the high school "Xhevdet Doda". It is worth noting that club students are active in their clubs with an overall average of about three (3) years, where they train in their clubs from three times a week for an hour extension. The sample of variables consists of 5 anthropometric variables, 5 basic motor variables and three specific motor variables. All measurements were made according to the guidelines of the International Biological Program (IBP). The following anthropometric variables (variables) are selected with this order: 1. ALARTR. -Body height; 2. APESHA - Body weight; 3. AGJAKR - Length of arms open; 4. BLOOD - The length of the palm; 5. AGJPGH - The width of the palm with open fingers.
Basic motor variables: 1. MKVGJA - Jump from place to length; 2. MKVLAR - Jump from place to height; 3. MPTHPU - Deep bending of the body before sitting; 4. MHMBGJ - Chest medicine throwing; 5. MVR20M - Running 20 meters from high start.
Specific motor variables: 1. MDTMKZ - dribble of the ball between the zig-zag cones; 2. MDTGJK - dribbling the ball and throwing in the basket for 30 sec .; 3. ENGLISH - free throw.
Based on the purpose of the research and based on the hypotheses presented, the following statistical methods were used: Discriminatory analysis, cross-correlations according to Pearson and T-test.

4. Result and discussion

In Table 1, the basic statistical parameters of the group of club students are given. Based on the results of Table 1, we note that this group of students is characterized by an average body weight of 61.71 kg, and an average body height of 1.70 m, values within normal based on the age group studied 14-15 years (± 6 months).
Also based on the results of Table 1, we notice that most of the variables have a normal range of results which we explain through small values of standard deviation from the arithmetic mean of the variables separately. Also, from the results of the table we notice that from the beginning

they make two motor variables which characterize the group with a very wide range of results, also for the variables:

MPTHPU - Deep flexion of the body before sitting with the result of arithmetic mean 180.23 mm and with standard deviation 70.43 mm,As well as the motor variable MGJLIR - free throw with the result of arithmetic mean 3.86 marked baskets and standard deviation 1.96 marked baskets.

In terms of asymmetry values, we see that they are within the normal range with small positive and negative asymmetries.

Table 1. Basic statistical parameters of club students

	N	Minimum	Maximum	Arithmetic mean	Standard deviation	Skewness	Kurtosis
ALARTR	30	1510,00	1900,00	**1705,3333**	98,85494	,135	-,059
APESHA	30	360,00	890,00	**617,1333**	138,35929	-,107	-,691
AGJKRH	30	1480,00	1990,00	1724,1667	116,51671	,157	,241
AGJAPË	30	158,00	216,00	184,5333	13,07468	,313	,613
AGJPGH	30	181,00	255,00	222,8667	17,42518	-,243	,015
MKVGJA	30	1250,00	2340,00	1865,6667	275,53939	-,390	-,230
MKVLAR	30	20,00	52,00	37,5333	6,86186	-,294	,903
MPTHPU	30	30,00	312,00	**180,2333**	**70,43299**	-,234	-,161
MHMBGJ	30	3000,00	7000,00	4941,6667	1119,42745	,102	-1,005
MVR20M	30	3,19	4,31	3,6477	,32728	,519	-,953
MDTMKZ	30	15,63	23,22	18,6790	1,99236	,765	-,377
MDTGJK	30	2,00	7,00	5,1667	1,34121	-,601	-,369
MGJLIR	30	2,00	9,00	**3,8667**	**1,96053**	1,376	1,377

In Table 2, the results of the basic statistical parameters of the group of school students are given. From the results of the tab we note that this group of students is characterized by an average body weight of 60.13 kg., and an average body height of 1.70 m. Which are also values within the normal range based on the age group researched.

From the results of table 2, we also notice that even in this group of students most of the variables have a normal range of results, in addition they make three motor variables that characterize the group with a very wide range of results, also for variables: MPTHPU - Deep flexion of the front body sitting with a result of arithmetic mean 158.80 mm and standard deviation 58.49 mm.

MDTGJK - Dribbling the ball with a throw in the basket for 30 seconds with the result of the arithmetic mean 2.53 marked baskets and with standard deviation 1.04 marked baskets.

As well as the engine variable MGJLIR - free throw with the result of arithmetic mean 2.16 basket marked and standard deviation 1.72 marked basket.

Regarding the values of asymmetry, we notice that they are within the normal range with small positive and negative asymmetries.

Table 2. Basic statistical parameters of school students

	N	Minimum	Maximum	Arithmetic mean	Standard deviation	Skewness	Kurtosis
ALARTR	30	1455,00	1830,00	**1708,9333**	88,98273	-,880	1,024
APESHA	30	420,00	860,00	**601,3333**	117,28931	,589	-,261
AGJKRH	30	1440,00	1860,00	1715,0000	97,72410	-,701	,699
AGJAPË	30	172,00	215,00	195,9667	12,64225	-,050	-1,113
AGJPGH	30	186,00	251,00	218,1333	15,08992	-,386	-,165
MKVGJA	30	1480,00	2350,00	1834,0000	210,14937	,441	-,167
MKVLAR	30	29,00	52,00	40,4667	5,87064	-,157	-,258
MPTHPU	30	30,00	260,00	**158,8000**	**58,49220**	-,051	-,817
MHMBGJ	30	3100,00	6800,00	4710,0000	890,31184	,642	-,394
MVR20M	30	3,24	4,96	3,8790	,36248	,668	1,258

MDTMKZ	30	19,38	24,63	21,8340	1,50509	,325	-1,013
MDTGJK	30	1,00	5,00	**2,5333**	**1,04166**	,494	-,323
MGJLIR	30	,00	6,00	**2,1667**	**1,72374**	1,066	,401

Table 3 shows the results obtained through the Pearson cross-correlation statistical method between anthropometric and motor spacing. Based on the results of Table 3, we note that out of a total of 40 correlative coefficients, only 16 interrelations have been achieved at both levels of statistical significance .05 and .01. At the .05 level of statistical significance the variables were given: ALARTR with MVR20M (-.289), AGJKRH with MVR20M (-.272), and AGJPGH with MDTMKZ (-.314).

At the .01 level of statistical significance, the variables were given: ALARTR with MKVGJA (.539), ALARTR with MKVLAR (.457), ALARTR with MHMBGJ (.572), APESHA with MHMBGJ (.503), AGJKRH with MKVGJA (45). , AGJKRH with MKVLAR (.438), AGJKRH with MHMBGJ (.583), AGJAPË me MKVGJA (.380), AGJAPË me MKVLAR (.464), AGJAPË me MHMBGJ (.343JA (MK4GG), MGJPGH). with MKVLAR (.358), as well as AGJPGH with MHMBGJ (.441).

It is worth noting that the other correlative values achieved between anthropometric and motor variables are small and insignificant values, so it is unnecessary to comment on them.

Table 3. Cross-correlations between anthropometric and motor variables

	ALARTR	APESHA	AGJKRH	AGJAPË	AGJPGH
MKVGJA	**,539**[**]	,209	**,545**[**]	**,380**[**]	**,444**[**]
MKVLAR	**,457**[**]	,102	**,438**[**]	**,464**[**]	**,358**[**]
MPTHPU	,112	-,016	,102	-,107	,083
MHMBGJ	**,572**[**]	**,503**[**]	**,583**[**]	**,343**[**]	**,441**[**]
MVR20M	**-,289**[*]	,040	**-,272**[*]	,016	-,193
MDTMKZ	-,191	-,056	-,219	,170	**-,314**[*]
MDTGJK	,187	,221	,247	-,202	,245
MGJLIR	,058	-,030	,086	-,148	,122

** Correlation is significant at level 0.01

* Correlation is significant at the 0.05 level

In Table 4, the results obtained from the T-test method (Independent Samples Test) are given. With this statistical method it is possible to confirm the differences between the groups tested for one variable.

Based on Table 4, we notice that differences have been achieved between the groups tested and that in both areas investigated in both anthropometric and motor. Also from the results of table 4, we notice that the differences achieved are at both levels of statistical significance .05 and .01. In the anthropometric space only one difference has been achieved in the variable:

AGJAPË (Palm length), with t-test value t = -3.443 and with significance value sig = .001 and is a difference in probability level p = .01 and as such is in the best interest of the group of students of school, where the negative value of the T-test indicates that the existing difference is in favor of measurements (ranked as second or Nx. school).

While the differences in motor space are evidenced in the variables:

MVR20M (Running 20 m., From high start) with t-test value t = -2.594 and significant value sig = .012 and is the difference in probability level p = .05 and as such is in good of the group of school students, but based on the task given in performing the distance provided in the shortest possible time we conclude that this difference is in the best interest of club students. MDTMKZ (dribble of the ball between the zig-zag cones), with t-test value t = -6.921 and significant sig = .000 value and is the difference in probability level p = .01 and as such is in good of the group of school students, but based on the task given in performing the distance provided in the shortest possible time we conclude that this difference is also in the best interest of club students. MDTGJK (Dribbling the ball by throwing in the basket), with t-test value t = 8.493 and with significance value sig = .000 is the difference in probability level p = .01 and as such is in the best interest of the group of club students. MGJLIR (Free shooting), with t-test value t = 3.567 and significant value sig = .001 is the difference in probability level p = .01 and as such is in the best interest of the group of club students.

Table 4. T-test between club students and school students

	DIFFERENCE	N	Mean	Std. Deviation	t	Df	Sig. 2-tailed
ALARTR	Club	30	1705,3333	98,85494	-,148	58	,883
	School	30	1708,9333	88,98273	-,148	57,370	,883
APESHA	Club	30	617,1333	138,35929	,477	58	,635
	School	30	601,3333	117,28931	,477	56,486	,635
AGJKRH	Club	30	1724,1667	116,51671	,330	58	,742
	School	30	1715,0000	97,72410	,330	56,294	,743
AGJAPË	Club	30	184,5333	13,07468	**-3,443**	58	**,001**
	School	30	195,9667	12,64225	**-3,443**	57,935	**,001**

AGJPGH	Club	30	222,8667	17,42518	1,125	58	,265
	School	30	218,1333	15,08992	1,125	56,839	,265
MKVGJA	Club	30	1865,6667	275,53939	,501	58	,619
	School	30	1834,0000	210,14937	,501	54,208	,619
MKVLAR	Club	30	37,5333	6,86186	-1,779	58	,080
	School	30	40,4667	5,87064	-1,779	56,643	,081
MPTHPU	Club	30	180,2333	70,43299	1,282	58	,205
	School	30	158,8000	58,49220	1,282	56,107	,205
MHMBGJ	Club	30	4941,6667	1119,42745	,887	58	,379
	School	30	4710,0000	890,31184	,887	55,203	,379
MVR20M	Club	30	3,6477	,32728	**-2,594**	58	**,012**
	School	30	3,8790	,36248	**-2,594**	57,405	**,012**
MDTMKZ	Club	30	18,6790	1,99236	**-6,921**	58	**,000**
	School	30	21,8340	1,50509	**-6,921**	53,968	**,000**
MDTGJK	Club	30	5,1667	1,34121	**8,493**	58	**,000**
	School	30	2,5333	1,04166	**8,493**	54,652	**,000**
MGJLIR	Club	30	3,8667	1,96053	**3,567**	58	**,001**
	School	30	2,1667	1,72374	**3,567**	57,065	**,001**

5. Analysis and verification of hypothesis

After processing and analyzing the achieved results and based on the purpose of the research, the following hypotheses can be verified:

Hypothesis 1. It is expected that anthropometric and motor variables will have normal distribution of results. **It has been partially proven.**

Hypothesis 2. Significant correlations between anthropometric and motor variables are expected to be achieved. **It is fully proven.**

Hypothesis 3. It is expected that there will be differences between the groups tested in the two areas surveyed. **It is fully proven.**

6. Conclusion with recommendations

This research deals with the total sample of 60 male entities of the age group 14-15 years (± 6 months), divided into two groups where the first group includes 30 students of three basketball clubs in the city of Prishtina and in the group the second also included 30 students from two schools in the city of Prishtina. It is worth noting that club students have a total average of 3 years of regular training at their clubs while school students are not active in any sports club. 13 variables were used in the research, of which 5 anthropometric variables, 5 basic motor variables and three specific motor variables (variables). The main purpose of this paper was to confirm the difference in the anthropometric and motor spaces of the group of students who practice in basketball clubs and students who do not exercise near clubs. Among the other purposes of this paper were the current state of the researched sample for the applied variables as well as the interrelationships between the two investigated anthropometric and motor spaces from the applied variables. From the above results to the basic statistical parameters of the two groups of students tested, it can be seen that most variables have a normal range of results, from the outset they made two motor variables in the first group - club students: deep body flexion before sitting (flexibility) and the free throw variable where these variables characterized the group with a wide range of results. Also, the second group of school students, three motor variables characterized this group with a fairly wide range of results: deep bending of the body before sitting (flexibility), dribbling the ball with a shot in the basket for 30 seconds and free throw.

From the interrelationships achieved between anthropometric and motor variables, we noticed that out of a total of 40 possible correlative coefficients, 16 important interrelations were achieved, of which 3 interrelationships at the .05 level of statistical significance and 13 interrelationships at the .01 level of statistical significance. The T-test method (Independent Samples Test) shows the differences between the groups tested for one variable. The differences achieved were both in anthropometric and motor space and also these differences entered both levels of statistical significance .05 and .01. In the anthropometric space we noticed that a difference was achieved only in the variable AGJAPË (The length of the palm), which difference was in favor of the group of school students. The differences achieved in the motor space were identified for the variables: MVR20M (Running 20 meters), MDTMKZ (Dribbling the ball between zig-zag cones), MDTGJK (Dribbling the ball with a shot in the basket for 30 seconds), MGJLIR (Free Shooting) and that all these differences were in the best interest of the group of club students. This paper has theoretical and practical value as it provides an overview of the status of test takers for the applicable variables by providing trainer data to clubs on the status of the group of club students and provides opportunities to select potential talents from the group of students of school.

Based on the results achieved, we recommend that for higher efficiency in the game of basketball, the most appropriate selection of basketball players should be made based on body height, knowing the importance of body height and the advantage it offers in the game of basketball, as the group of students of clubs had no advantage in body height at the levels of statistical importance even against their peers who do not train in any sports club.

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