A STUDY ABOUT COMPARISON OF PHYSICAL PARAMETERS IN YOUTH BASKETBALL PLAYERS IN MITROVICA AND TIRANA

Istrefi M[1], Jarani. J[2], Spahi. A[2], Bilali. A[3]

[1]Albanian Basketball Center Association
[2]Sports University of Tirana, Albania, Faculty of Movement Sciences
[3]Sports University of Tirana, Albania, Faculty of Physical Activity and Recreation

Correspondence: Mergim Istrefi, e-mail: mergimistrefi24@gmail.com

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Abstract
The goal of this comparison study is to find out the differences that exists between two youth U16 basketball team in Tirana and Mitrovica. Data was gathered in 80 youth basketball players for physical parameters. The comparison between Mitrovica team mean values for flexibility on sit and reach test (mean 23.54 cm SD 8.39) and Tirana mean values (mean 22.15 cm SD 6.05) is statistical significant ($p \leq 0.05$). Data for speed on 10m test for Mitrovica (mean 1.96 seconds SD 0.18) and Tirana (mean values 2.37 SD 0.26) is statistical significant ($p \leq 0.05$). While comparison for speed on 30m test for Mitrovica (mean 4.72 seconds SD 0.36) and Tirana (mean values 5.17 SD 0.39) is statistical significant ($p \leq 0.05$). Final data show that youth basketball players from Mitrovica has better results compared to players that play in Tirana.

Keywords; youth, basketball, speed, flexibility

Introduction
Basketball requires players to display high levels of speed, strength, power and flexibility and then repeat efforts time and time again during the game. Players of the game at the highest levels train their body's physical capacities to their highest levels. No longer is it good enough for the player to rely on their natural skill level as a player to excel in the sport. (William A et al., 2012). Strength training improves skeletal muscle contractile capacity (Costill et al.,1979), whereas aerobic training improves oxygen delivery to muscle and oxygen extraction from the blood (Holloszy and Coyle,1984). Thus, both strength and aerobic training programs are commonly employed to improve cardiovascular fitness and force production (Garber et al., 2011),(Panissa et al.,2018).Circuit weight training (CWT) has become popular among the general population and some athletes as a time-effective modality for modestly increasing muscular strength. (Wilmore et al.,1978). Furthermore, CWT has been shown to be a safe and effective routine for enhancing muscular strength as well as increasing compliance to exercise regimens in cardiac rehabilitation programs (Kelemen & Stewart, 1985). Plyometrics is a popular training modality for basketball players to improve power and change-of-direction speed. Most plyometric training has used sagittal-plane exercises, but improvements in change-of-direction speed have been greater in multi-direction programs. (McCormick BT et al.,2016). Traditional, assisted and resisted plyometrics are considered to be effective training methods for improving vertical jump performance (Makaruk et al.,2020). Resistance training is performed with a variety of exercise machines, free weights, or even the use of gravity acting upon the athlete's body mass. Most resistance training (strength) programmes are based on a system of

exercise to a repetition maximum (RM) as presented in the mid-1940s by T.L. De Lorme (De Lorme 1945) for use in physical medicine and rehabilitation. Every time the athlete performs a particular exercise, the bout (or 'set') is performed for the maximum number of repetitions possible (repetition maximum or RM) and this number is recorded along with the mass lifted or opposing force imposed by an exercise machine.(Komi et al.,1988). Coaches may create a simple framework which defines the initial spacing and responsibilities, yet from that moment on players are asked to create their own movement and opportunities and to constantly be a threat. This promotes individual player development and creates proactive decision makers and risk-takers.

Subject and methods

Measurements were performed on the two youth basketball teams in Mitrovica and Tirana. A total of 80 basketball players from these two cities (Mitrovica N = 42, Tirana N = 38). The measurements performed are anthropometric and physical such as: body height, body weight, flexibility, speed 10m and 30 meters. From the measurements performed the results are entered in the database (SPSS format) and are processed giving the final results.

Protocol of the measurements

Flexibility - Sit and reach test

The soles of the feet are placed flat against the box. Both knees should be locked and pressed flat to the floor - the tester may assist by holding them down. With the palms facing downwards, and the hands on top of each other or side by side, the subject reaches forward along the measuring line as far as possible

Vertical jump

A vertical jump is an effective exercise for building and demonstrating explosive power. The athlete stands on the side of the device taking the ready position (does not move from the place, does not move until to the moment of the jump) to perform the jump he stands straight with outstretched limbs and when the execution of the jump begins then he crosses his arms outstretched - backwards sitting down and takes the spring position getting ready for the explosion and at the moment of the jump he crosses his hands again from behind - downwards moving them forward and upward at the moment that pushes with the feet and unfolds the body by pushing. The moment he is in flight, at the maximum point he touches the separate sheets of equipment which accurately show the height achieved by the athlete. It performs two tests and the best result performed is taken as correct, placed in the database and then the data are processed.

Standing long jump

The athlete stands behind a marked line on the ground. He should not violate the line but has the right to approach it as much as possible. For the start we have the same procedure as jumping from the ground (taking the spring position) only that in this case all the explosive power collected will be used to move in the distance making maximum use of passing the front arms and pushing with the foot. Is called performed when the athlete touches the ground and the nearest point of touch in relation to the starting point is taken as the final result.

Speed 10-30 meters

Before we start, we inform the athlete about the space and the way of executing the test to avoid mistakes during the test.After the signal he must accelerate as much as possible to the finish line. Time is measured from the moment the athlete has passed the 'start' line to the moment when he also passes the running finish line. Also, 2 tests are performed here, where the best test is taken as the basis for throwing the results in the database. Regarding the protocol of performing the test, the test of running at a distance of 30 meters is the same, only the length that the athlete will traverse is greater, the rest of the course of the test is the same as running at a speed of 10 meters.

Body weight

Body weight measurement was also performed barefoot minimizing excess weight like athletes in this case. All the basketball players in turn

approached the scales where they were riding, standing upright, they were weighed at the moment when the scales showed '0kg' and stayed there until the scales signaled that the measurement was done through an audible signal and the weight was taken correctly.

Body height
Each basketball player has removed the shoes and approached the place for measuring the height he is placed with the body straight, the limbs extended to the maximum and the head straight.
It is important to remember that all measurements are performed with the same equipment that certifies their accuracy in measurements.

Statistical analysis

In this study descriptive analysis (descriptive, correlation) was performed between 2 variables as well as comparative T-test analysis. First, all the performed measurements were entered in the database EXEL format Office 2013, after entering in this data format for each variable, the conversion of the data in the statistical package SPSS version 20.0 was performed. Three tests for the variables measured in this study: descriptive analysis for each variable, correlation analysis for two variables, comparison between variables by T-test. 95% confidence level is set in all analyzes (P≤0.05)

Results
Results from the table 1 presents data on the number of basketball players participating in this thesis. Basketball teams in Mitrovica and the city of Tirana were considered

Table 1		N
Valid	**Mitrovicë**	**42**
	Tiranë	**38**

Results from the table 2 presents data on the number of basketball players participating in this thesis divided by age group. As can be seen from table 2 in Mitrovica, 20 players in the age group of 15.15.9 years and 22 players in the age group of 16-17 years were measured. While in the city of Tirana were measured 18 players in the age group of 15.15.9 years and 20 players in the age group 16-17 year.

Table 2		N (15-15.9)	N (16-17)
Valid	**Mitrovicë**	**20**	**22**
	Tirane	**18**	**20**

Table 3 presents descriptive data on measurements performed in Mitrovica for body height and body weight. The data represent the number of participants, minimum values, maximum values, averages and standard deviation.

Table 4 presents descriptive data on measurements performed in Tirana for body height and body weight. The data represent the number of participants, minimum values, maximum values, averages and standard deviation.

Table 3 Mitrovica Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Body Height	**42**	168.1	187.1	175.2	3.45
Body Weight	**42**	59.1	68.9	64.9	4.5
Valid N (listwise)	**42**				

Table 4 Tirana Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Body Height	**38**	166.4	189.2	173.7	2.87
Body Weight	**38**	57.4	69.4	62.4	3.7
Valid N (listwise)	**38**				

Table 5 presents descriptive data on the measurements performed in Mitrovica for flexibility measured with sit and reach testing, speed 10m and 30m. The data represent the number of participants, minimum values, maximum values, averages and standard deviation

Table 6 presents descriptive data on the measurements performed in Mitrovica for flexibility measured with sit and reach testing, speed 10m and 30m. The data represent the number of participants, minimum values, maximum values, averages and standard deviation.

Table 5 Mitrovica Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Flexibility_Sit& Reach	**42**	**17.2**	**28.2**	**23.54**	8.39
Speed_Sprint_10m	**42**	**1.84**	**2.24**	**1.96**	0.18
Speed_Sprint_30m	**42**	**4.54**	**5.27**	**4.72**	0.17
Valid N (listwise)	**42**				

Table 6 Tirana Descriptive Statistics					
	N	Min	Max	Mean	Std. Deviation
Flexibility Sit & Reach	**38**	17.8	27.4	22.15	6.05
Speed_Sprint_10m	**38**	2.01	2.57	2.37	0.26
Speed_Sprint_30m	**38**	4.89	5.47	5.17	0.39
Valid N (listwise)	**38**				

Table 7 presents correlation data on the measurements performed in Mitrovica and Tirana for body weight and body height in relation to the flexibility measured with sit and reach testing, speed 10m and 30m. The data represent the Pearson correlation, Sigma values (P value), and the number of measurements performed.

Table 8 presents correlation data on measurements performed in Mitrovica and Tirana for body weight and body height in relation to the explosive force of the lower limbs measured by long jump tests. Data present Pearson correlation, Sigma values (value P), and the number of measurements performed and the explosive force of the lower limbs measured by the high jump test.

	Table 7	**Flexibility- Sit and Reach**
Body Weight	Pearson Correlation	-0.521
	Sig. (2-tailed)	0.347
	N	42
Body Height	Pearson Correlation	-0.49
	Sig. (2-tailed)	0.41
	N	42

Table 8		Lower Body_ Standing Long Jump	Vertical Jump Counter Movement Jump1
Body Weight	Pearson Correlation	0.55	-0.28.5
	Sig. (2-tailed)	0.46	0.62
	N	42	42
Body Height	Pearson Correlation	0.557	0.006
	Sig. (2-tailed)	0.42	0.947
	N	42	42

Table 9 presents descriptive data on measurements performed in Mitrovica and Tirana for body weight and body height. The data represent the averages as well as the standard deviation.

Table 10 presents comparative data on measurements performed in Mitrovica and Tirana for body weight and body height. The data present comparisons between the two cities.

Table 9	Body Height	Body Weight
Mitrovica	175.2 (SD 3.46)	64.9 (SD 4.5)
Tirana	173.7 (SD 2.87)	62.4 (SD 3.7)

Table 10	Body Height	Body Weight	
P values (Mitrovica vs Tirana measurement)	P>0.05	P> 0.05	

Table 11 presents descriptive data on measurements performed in Mitrovica and Tirana for flexibility measured with sit and reach testing, speed 10m and 30m. The data represent the averages as well as the standard deviation.

Table 12 presents comparative data on measurements performed in Mitrovica and Tirana for flexibility measured with sit and reach testing, speed 10m and 30m. The data present comparisons between the two cities.

Table 11	Flexibiiity Sit % Reach	Speed 10m	Speed 30m
Mitrovica	23.54 (SD 8.39)	1.96 (SD 0.18)	4.72 (SD 0.36)
Tirana	22.15 (SD 6.05)	2.37 (SD 0.26)	5.17 (SD 0.39)

Table 12	Flexibility Sit % Reach	Speed 10m	Speed 30m
P values (Mitrovica vs Tirana measurement)	P≤ 0.05	P≤ 0.05	P≤ 0.05

Discussions and Conclusions

The main physical characteristics in a basketball player are (a) running faster than the opponents, (b) having strength and balance to endure contacts and hits involved in the game, (c) jumping higher and faster than the adversaries, (d) being able to do the 3 aforementioned points more times than their opponents during the game with less fatigue. (Schelling & Ronda , 2013).

In this article, comparisons were made between the young basketball teams in the city of Mitrovica and Tirana in some physical and anthropometric parameters. The first purpose of this study was to look at the current level of anthropometric parameters of young basketball players. The second goal was to compare these parameters between the basketball teams in Tirana and Mitrovica. The third goal in this study is to identify whether there is a correlation between anthropometric parameters. From the results of this study it resulted that the body height of basketball players in Mitrovica is: 175.2cm, (SD3.45- Minimum value 168.1 - Maximum value 187.1), while in the Tirana team body height is 173.7 (SD 2.87 minimum value 166.4 and maximum value 189.2). From the results of this study it resulted that the body weight of basketball players in Mitrovica is: 64.9kg, (SD4.5 minimum value 59.1 and maximum value 68.9) While in the Tirana team body weight is: 62.4kg, (SD 3.7 minimum value 57.4 and value maximum 69.4)

The results of this study showed that the flexibility of basketball players in Mitrovica is: 23.54cm (SD8.39 Minimum value 17.2 and maximum value is 28.2) While in the Tirana team the flexibility is: 22.15cm (SD6.05 The minimum value is 17.8 and the maximum value is 27.4) From the results of this study it resulted that the 10m speed running of the basketball players in Mitrovica is: 1.96sec. (SD 0.18 Minimum value 1.84sec and maximum value is 2.24sec) While in the Tirana team the 10m speed run is: 2.37sec (SD 0.26 Minimum value 2.01sec and maximum value 2.57sec) From the results of this study it resulted that the 30m speed running of the basketball players in Mitrovica is: 4.72sec (SD 5.17 The minimum value is 4.54sec and the maximum value is 5.27sec) While in the Tirana team the 30m speed run is: 5.17sec (SD 0.39 Minimum value 4.89sec and maximum value 5.47sec) Comparative data show that the body height of basketball players in Mitrovica is: 175.2 while those in Tirana is 173.7, comparative analysis between 2 variables in the T-test shows non-significant changes (P> 0.05). Comparative data show that the body weight of

basketball players in Mitrovica is: 64.9 while in those in Tirana it is 62.4, the comparative analysis between the 2 variables in the T-test shows non-significant changes (P> 0.05).
Comparative data show that the flexibility of basketball players in Mitrovica is: 23.54cm while in those in Tirana it is 22.15cm, comparative analysis between 2 variables in the T-test shows significant changes (P≤0.05). Comparative data show that the 10m speed run for basketball players in Mitrovica is: 1.96sec while for those in Tirana it is 2.37sec, the comparative analysis between the 2 variables in the T-test shows significant changes (P≤0.05)
Comparative data show that the 30m speed run in Mitrovica is: 4.72sec while in those in Tirana it is 5.17sec, the comparative analysis between the 2 variables in the T-test shows significant changes (P≤0.05). The data of this study as a conclusion show non-significant changes for body height and weight, while flexibility, sprinting 10 and 30 meters has significant changes in favor of basketball players from the city of Mitrovica.
The data of this study show that the basketball players of the city of Mitrovica have better anthropometric and physical parameters than the basketball players in the city of Tirana, except for body height and weight. The other purpose of this study is to identify whether there is a correlation between anthropometric parameters and physical abilities. The data we obtained from this study show a negative correlation between body weight and flexibility (-0.521; p = 0.347; N = 42). Statistical analysis shows a non-significant relationship between these 2 parameters.

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