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# **JOURNAL OF PHYSICAL ACTIVITY & SPORTS**

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### **CONTENTS**

**The influence of some morphological variables and motor skills in the success of the junior basketball league**

ARTAN R. KRYEZIU, ISA ASLLANI..... 3-9

**Leisure time and TV watching in 12 to 16 years old children in Tirana**

BLERINA MEMA , KEIDA USHTELENCA.....10-13

**Herpes Zoster: Clinical Aspects, Complications and Role of Physical Activity in Adults in Albania**

ESMERALDA META, DHIMITRAQ STRATOBERDHA, PELLUMB PIPERO.....14-19

**Stigma and discrimination against obesity**

JONIDAHAXHIU.....20-23

**Football as a tool to improve motor movement to the youth in the age before pubertal.**

MIKEL CENAJ, IVAN MARDOV.....24-27

**Impact of inclusiveness policies in the budget of the university  
(Case study of Sport University of Tirana)**

MIRLINDA. GALUSHI, EJVIS. (SHEHI) GISHTI.....28-35

**Analysis of some motor skills of pupils practising different kinds of martial arts**

NIKOLAY, BALEVSKI, TODOR MARINOV, STANISLAV, MAVRUDIEV.....36-40

**Analysis of physical anthropometric indicators and bmi index of participating sports players in nationwide 2012-2013 universiade**

LUMTURI MARKOLAJ, ENTELA KUSHTA, VEJSEL RIZVANOLLI, FATOS GJATA.....41-49



## ORIGINAL ARTICLE

## The influence of some morphological variables and motor skills in the success of the junior basketball league

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### Abstract:

In this paper has explored the impact of some variables morphological and motor skills in the success of the junior basketball league. The experiment was done on a sample of 54 young basketball players aged 17 years. Latent factors were extracted which is used factorial analysis and have won two latent factors whose morphological been appointed: general factor for growth and development, as well as factor transversal body. While factoring basic motor skills have won four of situational factors which are labeled as: factor of explosive strength and speed option lower limbs, factor flexibility and accuracy (precision) situational and factor precision shooting. Through regression analysis, we examined latent relationship between success (result) sports, as the criteria and factors as prediktor win. Space has realized conjunction with morphological criteria 21% level of significance ( $P = .002$ ). While the basic motor space situational realized 13% level of significance ( $P = .054$ ). Therefore, we can say that the success of the game of basketball junior league had influence morphological space respectively general factor for growth and development and factor transverse body, while the motor space is explosive power factor and speed alternative lower limbs, have nearly the impact this key factor for achieving-success (result) sports. Concluded that fully explained the latent structure of space, and the impact of their success to the junior league players in basketball.

**Keywords:** *morphology, motor, success, factor analysis, regression analysis*

### Interoduction:

Success in the sport of basketball at the same time is an incredibly long and arduous that requires a professional and scientific approach and methodology for the advancement of sports results (Blašković et al., 1983, Petković, D. 1996, Jakovljević et al., 2007). To achieve higher results and significantly increase motor skills and specific is important as the great influence of success (result) sporting these young basketball players. To better before the impact of factors in success (result) of the game of basketball sport in this paper will be explored only two spaces such as the space morphological factors, as well as the basic

motor skills, situational (specific) of the junior basketball league (Trninić et al., 2010). In this paper we will examine the purpose of the paper which is about the impact of several variables morphological and motor skills tests in the success of the game of basketball junior league. In a word, the main purpose of this study is to verify the relationship of the extracted factors as predictors (predictor), and the success (result) is taken as a variable sporting criteria.

### Research methods:

*The sample (model) of entities*

In the survey included 54 junior basketball league age 17 years. The test, are members of two basketball

schools, Drita from Gjilan and Sigal Pristina from Pristina, the youth are involved in basketball training program, approximately 2 years, exercised 3 times a week as well as 1 hour and 15 minutes per day.

#### *The sample of variables:*

In this paper are applied thirteen (13) variables, five are from morphological space, while seven are in basic motor and space situational as predictor, while one (1) belongs to success (result) sports as criteria.

#### *The variables predictor:*

Morphological space:

BOWE - Body weight; BOHE - Body height; ARCI - Arm circumference; CHCI - chest circumference; THCI - thigh circumference.

The basic motor space situational:

JPL - The jump from place to length; SAR<sub>1</sub> - Jump from place to height; SAR<sub>2</sub> - The high jump with the approach of one foot; R40m - Running(sprint) 40 meters; DFB - Deep Flexion before; SHBCD - Shooting the ball in cart in the same direction; SH-BCC45° - Shooting the ball in the corner cart 45°.

#### *Variables criteria:*

Variable criteria in this paper is (success) sports score means that each player success (result) has sports scores gathered during the team championship competitions which belongs (Blašković et al., 1982, Jakovljević, S. 1996, Karalejić et al., 2009). Data were processed with SPSS statistical software programine package version 16.0 for Windows, research latent structure of space that will be explored through factor analysis, reviewing the possibility of impact on variable criteria prediktore variables (latent space) will be done through regression analysis.

### **Results:**

Issues on which to resolve through factorial analysis which aims to the large number of variables related manifestos between them reduce them to a small number of independent latent variables, which may explain the relationship them between manifest variables analyzed. Also through regression analysis will

also certify relations impact or latency on the success factors (results) sports junior basketball league.

*Table no. 1 The main characteristic roots and parts explained common variance in morphological space*

<i>Component</i>	<i>Total</i>	<i>% of Variance</i>	<i>Cumulative %</i>
<b>1</b>	<b>2.267</b>	<b>45.336</b>	<b>45.336</b>
<b>2</b>	<b>1.136</b>	<b>22.722</b>	<b>68.058</b>
3	.707	14.146	82.204
4	.542	10.832	93.036
5	.348	6.964	100.000

Decrease main morphological characteristic of latent variables in table. 1 are shown the characteristic roots (Lambada) and partial contribution (%) and their cumulatively explaining the variability in general. According to method Hottelingut and Criterion CG (Gutman-Kaiser), two main components are extracted, which explain 68.05% of variance genera. The first characteristic root of the variance explained 45.33% of the overall system, the second cure the root of the variance explained 22.72% of genera.

**Table no. 2** *Matrix components and cummunalities*

	1	2
<b>BOWE</b>	<b>.690</b>	.213
<b>BOHE</b>	<b>.788</b>	-.152
<b>ARCI</b>	<b>.806</b>	.263
<b>CHCI</b>	<b>.720</b>	-.354
<b>THCI</b>	.209	<b>.935</b>

In table no. 2 projections have realized significant body weight, body height, arm circumference and chest circumference of the coefficient of .690 to .806. In the second component, thigh circumference is defined with high coefficient of .935.

Table no. 3 Matrix of parallel projections

	1	2
<b>BOWE</b>	<b>.304</b>	-.134
<b>BOHE</b>	<b>.348</b>	.188
<b>ARCI</b>	<b>.356</b>	.231
<b>CHCI</b>	<b>.318</b>	-.311
<b>THCI</b>	-.010	<b>.823</b>

Oblim first factor is defined by body weight, body height, arm circumference and chest circumference coefficient of .304 to .356. On the basis of such projections first factor can be interpreted as a general **general factor for growth and development**. In the second factor is designed thigh circumference with high coefficient of .823. The second factor can be defined as **transverse body factor**.

Table no. 4 Matrix of correlation between morphological factors

Komponent	1	2
<b>1</b>	1.000	.000
<b>2</b>		1.000

Under interkorelacionit matrix of latent factors (tab. 4) the first factor to the second factor does not have significant correlations (.000). Based on this we can conclude that the factors are independent of each other.

Table no. 5 The main characteristic roots of basic motor and situational variables

Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	<b>2.655</b>	<b>37.935</b>	<b>37.935</b>	<b>2.655</b>	<b>37.935</b>	<b>37.935</b>
2	<b>1.256</b>	<b>17.945</b>	<b>55.880</b>	<b>1.256</b>	<b>17.945</b>	<b>55.880</b>
3	<b>1.101</b>	<b>15.726</b>	<b>71.606</b>	<b>1.101</b>	<b>15.726</b>	<b>71.606</b>
4	.881	12.587	84.192			
5	.582	8.314	92.506			
6	.481	6.868	99.374			
7	4.382	.626	100.000			

In table no. 5 presents the characteristic roots (Lambada), as well as partial contribution (%) and their cumulatively explaining the variability in general. According to Criterion method Hottelingut and CG (Gutman-Kaiser), are extracted three main components, which explain 71.60% of variance genera. The first characteristic root explains 37.93% of the variance of the overall system, the second root explains 17.94%, while the third root explains 15.73% of the total variance.

Table no. 6 Matix components and cummunalities

	1	2	3
<b>JPL</b>	<b>.690</b>	.361	-.578
<b>SAR<sub>1</sub></b>	<b>.907</b>	-.248	.179
<b>SAR<sub>2</sub></b>	<b>.896</b>	-.251	.185
<b>R 40 m</b>	<b>-.704</b>	-.250	.267
<b>BFB</b>	.239	<b>.725</b>	-.478
<b>SHBCD</b>	.758	<b>.608</b>	.313
<b>SHBCC45<sup>0</sup></b>	-.457	.324	<b>.798</b>

Is presented in table 6 main components matrix with three factors and their cummunalities.

The first major component projections have realized significant tests the jump from place to length, jump from place to height, the high jump with the approach of one foot, running(sprint) 40 meters (.690 to .907). Jumping from place to test height has realized higher projection .907.

The second component is defined by the test deep flexion before and shooting the ball in cart in the same direction coefficient of .608 to .725. The third component is defined by the test shooting the ball in the corner cart 45° optimal value of .798.

Table no. 7 Matrix of parallel projections

	1	2	3
<b>JPL</b>	<b>.260</b>	.208	-.014
<b>SAR<sub>1</sub></b>	<b>.341</b>	-.198	.163
<b>SAR<sub>2</sub></b>	<b>.337</b>	-.200	.168
<b>R 40 m</b>	<b>-.265</b>	-.018	.242
<b>BFB</b>	.090	<b>.577</b>	-.434
<b>SHBCD</b>	.014	<b>.484</b>	.284
<b>SHBCC45°</b>	-.013	.258	<b>.725</b>

In tables 7 pralele projection matrix, which contains parallel projections of motor tests in oblimim factors. With ordinary inspection of this matrix we see that higher projections in the first factor realized the jump from place to length, jump from place to height, the high jump with the approach of one foot, running(sprint) 40 meters coefficient of -.265. till .337. So based on these projections, the first factor can be defined as **factor of explosive strength and speed alternative lower limbs**. In the second factor, higher projections are realized: deep flexion before and shooting the ball in cart in the same direction value of .484 till .577. Based on projections of tests

designed the second factor can be interpreted as **factor flexibility and accuracy (precision) situational**. In the third factor has realized higher projections test shooting the ball in the corner cart 450. The third factor can be defined as a **factor of precision shooting**.

Table no. 8 Matrix of correlation between motor factors

Komponent	1	2	3
<b>1</b>	1.000	.000	.000
<b>2</b>		1.000	.000
<b>3</b>			1.000

On the face of matrix interkorelative oblim motor factors (Table no. 8) shows that there is no significant correlation between them that namely factors that are independent of each other.

### In space latency regression analysis:

#### Success variable regression (result) sports in space latency morphology and motor

In factoring the two spaces have won two latent factors morphological and three latent factors motor. Through regression analysis in latent space we explore the relationship between success (result) sports which means that each player success (result) has sports scores gathered during the team championship competitions which belongs as a criterion and gain factors, as predictor.

Table no. 9 Regression test - success (result) sports in morphological space

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	df1	df2	Sig. F Change
1	.468	.219	.188	24.05961	2	51	<b>.002</b>

Model		B	Std. Error	Beta	t	Sig.
<b>1</b>	(Constant)	76.370	3.274		23.326	.000
	Morphology no.1	-9.973	3.305	-.373	-3.018	<b>.004</b>
	Morphology no.2	7.523	3.305	.282	2.276	<b>.027</b>

In Table 9 are given the results of the regression analysis where success is making prediction (score) sports through winning factors. On the basis of the value of multiple correlation ( $R = .47$ ), can be explained 21% of the joint system variability and variable criteria prediktor level of significance ( $P = .002$ ). The remaining 79% is under the influence of unknown factors not included in this paper. If we analyze the impact of variables (factors) variables latency criteria see general factor for growth and development as well and transverse body factor have a statistically significant impact in predicting outcome criterion variables. Under the regression partial coefficient, the impact of general factor for growth and development, ( $Beta = -.373$ ) is significant at **.004**, on the basis of this success can be seen that (score) sports has a negative impact. While transverse body factor ( $Beta = .282$ ) is significant at **.027**, but is low.

#### SUCCESS REGRESSION VARIABLES (OUTCOME) MOTOR SPORTS IN SPACE LATENCY

As shown in Table 10 are presented the possibilities of predicting sporting success based on factors predictor system. Based on the multiple correlation coefficient ( $R = .37$ ) can be explained 13% of variability common predictor system and criteria variables (athletic success) in the variable level of significance criteria ( $P = .054$ ). The remaining 87% is under the influence of unknown factors not included in this paper. On the basis of the partial regression coefficients, the impact factor of explosive strength and speed alternative lower limbs ( $Beta = -.325$ ) is significant at **.017**. As seen factor of explosive strength and speed alternative lower limbs has a negative impact on the success (result) is sporty but statistically low. Know very well that the success (result) sports in general affect more than one motor factors, however this can be explained logically related to the fact that explosive strength and speed factor alternative lower limbs, involving tests that measure explosive strength, vertical jump and quickness.

Table no. 10 Regression test - success (result) sports basic motor in space situational

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	df1	df2	Sig.
1	.373	.139	.088	25.50419	3	50	<b>.056</b>

Model		Sum of Squares	df	Meanquare	F	Sig.
1	Regression	5269.414	3	1756.471	2.700	<b>.056</b>
	Residual	32523.179	50	650.464		
	Total	37792.593	53			

Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	76.370	3.471		22.004	.000
	Motor no. 1	-8.669	3.503	-.325	-2.475	<b>.017</b>
	Motor no. 2	.950	3.503	.036	.271	.787
	Motor no. 3	4.834	3.503	.181	1.380	.174



### Discussion and Conclusion:

In this paper is experimenting morphological and motor areas of the junior basketball league, and verify the relationship of the extracted factors as predictors (predictor), and the success (result) is taken as a variable sporting criteria. On the basis of data to be used for young basketball players, do not have values from other authors with comparison purpose of our study. Younger players are junior successful performance individually in the performance of duties in choosing anthropological features junior group of players, however these changes are determined for success in basketball are included morphological space, basic motor skills and situational and which being determined optimal level of maximum interconnect many characteristics in achieving junior basketball sports (Milanović et al., 1996, Karalejić et al., 2009). In line with other studies we see that the author (Jakovljević, S. 1996) by regression analysis shows basketball players liaison important basic motor skills and success in the game of basketball, the criterion level is satisfactory to the success of the game of basketball of which depends on numerous factors that are not included in the space that we handle (Jakovljević, S. 1996). Based on the goals outlined in this paper can conclude that latent factors were extracted which is used factorial analysis and have won two latent factors morphological who was appointed as: General factor for growth and development; Factor transverse body. While factoring the basic motor tests have won three of situational factors which are labeled as: Factor of explosive strength and speed alternative lower limbs; Factor flexibility and accuracy (precision) situational; Factor of precision shooting. Through regression analysis, we examined latent relationship between success (result) sports, as the criteria and factors as prediktor win. Space has realized conjunction with morphological criteria 21% level of significance ( $P = .002$ ). While the basic motor space situational realized 13% level of significance ( $P = .054$ ). Therefore, we can say that the success of the game of

basketball juniors have had influence morphological space respectively general factor for growth and development and transverse body factor, while the motor is in space factor of explosive strength and speed alternative lower limbs, have nearly the impact this key factor for success (result) sports. However should overlook the many other factors that affect the success of the game of basketball juniors, because you know very well that the game of basketball game characterized by rapid and successful realization during her game.

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## ORIGINAL ARTICLE

## Leisure time and TV watching in 12 to 16 years old children in Tirana

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## Abstract

Identifying time spent watching TV during their leisure time in children 6th to 9th grade school, time spent sedentary can provide useful information when designing interventions aimed to promote an active lifestyle in children. The purpose of this study was to examine associations between sedentary life style, TV viewing and PA behavior in children. A total of 567 children, were; 161 in 6<sup>th</sup> grade, 124 in 7<sup>th</sup> grade, 140 in 8<sup>th</sup> grade and 139 in 9<sup>th</sup> grade, participated in this study. EYHS questionnaire was applied to measure the time spent on sedentary habits while watching TV. Based on the results we can see that 0.6 % of 6<sup>th</sup> grade children report 0 hours of TV watching. In the other side 0.8 % of the 7<sup>th</sup> grade, and 8<sup>th</sup> and 9<sup>th</sup> grade reports 2.1% and 2.2%. According to watching TV less than 1 hour/day, data's show an increases on percentages from 29.8 % in 6<sup>th</sup> grade children and 22.6 % in 7<sup>th</sup> grade children, to 15 % and 12.9% in 8<sup>th</sup> grade children and 9<sup>th</sup> grade children. In conclusion the lower score with 0 hours of TV watching was 6<sup>th</sup> grade children the 0.6 %. The highest percentage with 39.1 % was the 6<sup>th</sup> grade children that spent 1-2 hours per day in front of the TV.

**Keywords:** *children, TV watching, leisure time,*

## Introduction

During childhood and adolescence, regular physical activity (PA) is associated with improvements in physiological and psychological health and is being promote as an objective for disease prevention (Cavill N et al., 2001; Harsha DW., 1995). Nerveless, a substantial proportion of young people have lower PA levels than recommended for good health (Trost SG et al., 2002). Furthermore, PA levels decline from childhood to adolescence, and in the same time TV viewing and unhealthy lifestyle increases with the same speed. As we know the school environment is an ideal setting for promotion of PA, science all children can be reached.

Schools can provide opportunities to be physically active during physical education, during recess, and

before and after school hours (Jago R et al., 2004). One intervention studies focused on school break periods and promoting PA at school and reported an increase in children's activity levels during those periods (Wechsler H et al., 2000). Previous studies (Ridgers ND et al., 2005; Wickel EF et al., 2007), have showed that the majority of time during school recess and PE lessons is spent at lower intensities of PA, and the amount of time spent in moderate – to – vigorous PA (MVPA) is insufficient in relation to the recommended amount of 60 daily minutes in MVPA. Unstructured outdoor play (Anderson SE et al., 2008; Cleland V et al., 2008) participation in organized sports, (Spinks A et al., 2006) and mode of transportation to school (Saksvig BI et al., 2007; Tudor-Locke C et al., 2002) have all been suggested correlates of PA levels in children and are thus possible targets for

PA interventions. Conversely, time watching TV during leisure time represents a behavior often used as a measure of sedentary time. TV viewing has been shown to be positively related to overweight in youth (Andersen LF et al., 2005; Gortmaker SI et al., 1996; Marshall SJ et al., 2004) and reducing sedentary behavior by limiting screen time to no more than two hours per day has been recommended (AAP., 2001).

In a study about Diet, physical activity, sedentary behaviour and perceptions of the environment in young adults from (A. A. Lake,\* T. Townshend, S. Alvanides, E. Stamp§ & A. J. Adamson\*), on sedentary behavior. A study of (C Graf1 et al., B Koch1), according to leisure activities and television viewing behavior showed that 57.17% of the children reported that they watched television daily (n/4307), 21.97% reported to do so 4–6 days/ week (n/4118) and 20.86%, 1–3 days/week (n/4112). The children with the least viewing time per week tended to show the best results with regard to their gross motor development.

No differences were found between the groups concerning BMI and endurance performance (C Graf1 et al., B Koch1). Also a study from (Motl et al., 2005) shows that adolescents spend approximately 3 h day) watching television or playing video games.

The aim of this study is to investigate TV viewing during leisure time on a large sample of 6 to 9 grade elementary children, respectively 11 to 15 year-old children in Tirana.

## Methods

For this study it was used a questionnaire to evaluate inactivity habits. The aim of using EYHS questionnaire was to measure the time spend on sedentary habits, where all children were asked about time spent in front of TV during a day.

The schools were randomly selected by a pool of 53 schools in the district of Tirana. A total of 567 children, from where 161 on 6<sup>th</sup> grade, 124 on 7<sup>th</sup> grade,

140 on the 8<sup>th</sup> grade and 139 on the 9<sup>th</sup> grade participated in this study.

## Results

Based on the results we can see that 0.6 % of 6<sup>th</sup> grade children report 0 hours of TV watching. In the other side 0.8 % of the 7<sup>th</sup> grade, and 8<sup>th</sup> and 9<sup>th</sup> grade reports 2.1% and 2.2%.

**Table 1.** Participants by grade filled the questionnaire

6 grade	N	Valid	161
		Missing	3
7 grade	N	Valid	124
		Missing	0
8 grade	N	Valid	140
		Missing	0
9 grade	N	Valid	139
		Missing	0
		Total	567

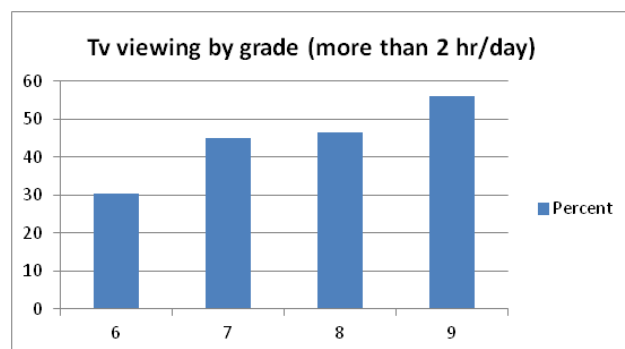
According watching TV less than 1 hour/day, data's show an increases on percentages from 29.8 % in 6<sup>th</sup> grade children and 22.6 % in 7<sup>th</sup> grade children, to 15 % and 12.9% in 8<sup>th</sup> grade children and 9<sup>th</sup> grade children.

**Table 2.** How many hours per day, you usually spend watching TV?

Grade	6	7	8	9
0 hour	6	8	2.1	2.2
Less than 1 hour	29.8	22.6	15.0	12.9
1-2 hours	39.1	31.5	36.4	24.5
2-3 hours	19.9	27.4	26.4	34.5
3-4 hours	8.1	8.1	16.4	15.8
4-5 hours	2.5	6.5	1.4	5.8
More than 5 hours		3.2	2.1	4.3

Time watching TV increases and we can see that 39.1 % of 6<sup>th</sup> grade children spent 1-2 hours per day in front of the TV and 31.5% of the 7<sup>th</sup> grade, and 36.4 of 8<sup>th</sup> grade while only 24.5 % of 9<sup>th</sup> grade spent 1-2 hour per day.

Table 3. TV viewing for children by grade more than 2 hour/day (%)



We can see the highest value reached on watching TV 1 - 2 hours per day where 6<sup>th</sup> grade children with 39.1 % of them. Significant differences between time spend in front of TV is between

A larger proportion of 8<sup>th</sup> grade also reported less than two hours of television viewing per day compared to the older age group but at the other side we can see that this grade children report the lowest percentage between other grades on watching 4-5 hours per day, with 1.4 % compared to 2.5 %, 6.5 % and 5.8 %.

## Discussion

A study on Physical Inactivity, TV-Watching Hours and Body Composition in Children and Adolescents from (Ivan Romeo et al., 2009) with the same age of children, conclude that only 3.0 % of them did not watch TV at all, of which for TV-watching, (3.0%) said they did not watch it, of which around 10.0% of the sample do not have a TV set. In the group of children who have TV at home, the number of daily hours of TV-watching also varied from 1-10 hours, averaging  $3.7 \pm 2.2$  hours. Considering those who watch TV, regardless of having it at home or not, the median hours of TV-watching are 3 hours; (32.0%) watch TV for 1-2 hours and (65.0%) watch it for 3 or more hours. And to the other side another study (Silva et al., 2008), was observed that the average daily hours watching TV was 3.6 hours, of which 3.7 were among girls and 3.5 among boys; the median for the

group and in both sexes was 3 hours. In the study by the lack of association between TV viewing and sedentary time supports previous suggestions that TV viewing may not be the major determinant for being sedentary in youth

## Conclusion

Frequency of Time spent in front of TV on this age is a significant correlate for daily time in 14 years children, The 9<sup>th</sup> grade children showed the max Time spent in front of TV compared to other children. The lower score with 0 hours of TV watching was 6<sup>th</sup> grade children the 0.6 %. The high percentage with 39.1 % was the 6<sup>th</sup> grade children that spent 1-2 hours per day in front of the TV.

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## ORIGINAL ARTICLE

**Herpes Zoster: Clinical Aspects, Complications and Role of Physical Activity in Adults in Albania**ESMERALDA META <sup>1)</sup>, DHIMITRAQ STRATOSBERDHA <sup>2)</sup>, PELLUMB PIPERO <sup>1)</sup><sup>1)</sup>*Infectious Disease Service UHC*<sup>2)</sup>*Sports University of Tirana*

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**Abstract**

Herpes Zoster is the reactivation of the Varicella Zoster Virus in adults in terms of reduction of immunity as a result of various causes. The virus lies dormant in the roots of the dorsal ganglia spinal cord for years after the expiration of the primary infection in the form of chickenpox in childhood. Although in most cases passes as a limited self rash accompanied by pain, shingles can make and heavy evolutions, even serious complications. This study offers an overview of clinical, complications, role of sport activity of Herpes Zoster in adults.. We studied 123 cases from 15 - 90 years old January 2009 - December 2013. We classified them based on route of transmission, the immune status dominated immunocompetents 62.3%.HZ occurs and to sportsmen, team sports, martial arts or dealing spots close bodily contact, water sports from the use of common towels. According to clinical data, constitute the main weight pre herpetic pain 77%, the prodromal signs. Based on the type of vesicles, 68.8% simple, with frequent dissemination in the thoracic area of 39%, followed by those in the region of the head and less lumbar - sacral. PHN as dominant complication in 44% of cases, followed by meningitis, keratitis and encephalitis. The initial assessment should indicate the possibility of atypical manifestations. After initial treatment, further care directed towards the occurrence of complications. To athletes it is advisable calm to herpetic vesicles phase; and after easier physical activity in the medium; as walking, swimming or cycling that influence the growth of immunity Pain relief should be the primary concern.

Key Words: *Herpes Zoster, Adults, Albania.***Introduction**

Herpes Zoster is an acute infection caused by reactivation of the latent varicella zoster virus, which mainly affects adults. The cause of reactivation is unknown, but it is linked to stress, aging, and immune impairment. It is characterized by the development of painful vesicular skin eruptions that follow the underlying route of cranial or spinal nerves inflamed by the virus

As more children are vaccinated against chickenpox, adult immunity against herpes zoster is decreased. The total duration of the disease from onset to complete recovery varies from 10 days to 5 weeks. It is

estimated that about 50% of people who live to age 80 will have an attack of herpes zoster Pain often develops along affected skin and persists for months after resolution of the rash.

**Epidemiology**

About 95% of young adults and 99.5% of adults over 40 years old or older, have antibodies to VZV and so are affected to the reactivation of infection. <sup>[1]</sup> <sup>[17]</sup> A person of any age with a previous infection may develop varicella zoster, but the incidence increases with advancing age, as a result of the collapse of im-

munity. People who have an increased risk for herpes zoster include those with cancer, about 25% of patients with HIV, who have undergone bone marrow or solid organ transplantation (7-9% of those who do kidney or heart transplant experience a period of zoster), or who are taking immunosuppressive medications, or transplant-related immunosuppressive medications, UV radiation, etc. HZ occurs and to sportsmen, team sports, martial arts or dealing sports close bodily contact, water sports from the use of common towels. Studies found that more women than men develop herpes zoster<sup>(1,2)</sup>; the reason for a possible difference between women and men is not known, and during the lifetime, Groups with a risk high, such as the population of elderly and immunocompromised have higher incidence than 50%. [20] The incidence of herpes zoster increases with age. In the general population, the incidence of herpes zoster increases by 10-20%, which amounts to 50% in individuals aged 85 years old. [24] More than 66% of patients are older than 50 years old. The incidence of PHN (Post herpetic neuralgia) also increases with advancing age. 10-20% of those with primary infection continue to experience episodes of herpes zoster. [19] Although 2nd and even 3rd episodes of herpes zoster can occur, the annual incidence of recurrence is not known. Approximately 4% of patients with shingles will develop a repeat episode later in life [18]

### Clinical Aspects

Herpes zoster can start with prodromal sensory phenomena along one or more dermatomes lasting 1-10 days (approximately 48 hours), which usually appear as pain, itching or paresthesia less. [37] which may result in misdiagnoses until the appearance of eruptions. Clinical manifestations of herpes zoster divided into 3 phases, Preeruptive phase (preherpetic neuralgia), eruptive acute phase, chronic phase (postherpetic neuralgia). The density of vesicles ranging from the presence of a small number of vesicles to the emer-

gence of clusters of vesicles, which often join to form the bula, during this phase, almost all adult patients experience pain.

Clinical forms are classified according to topography: ophthalmic herpes zoster, herpes zoster maxillary branch, herpes zoster mandibular branch, herpes zoster oticus, herpes zoster glossopharyngeal and vagal, herpes zoster occipital-collaris (nerve involvement C2 and C3 vertebrae), encephalitic herpes zoster, myelitic herpes zoster, herpes zoster disseminated, herpes zoster unilateral involving multiple dermatome, herpes zoster recurrent herpes zoster involving the bladder, herpes zoster involving other internal structures, herpes zoster with motor complications, zoster without shingles. Complications: Herpes zoster involving cranial nerve (CN), may be associated with conjunctivitis, keratitis, corneal ulceration, iridocyclitis, glaucoma, immediate vision dropping to blindness. Otic complications of herpes zoster (Ramsay Hunt syndrome): a zoster touched CN V, CN IX) may include peripheral facial nerve weakness and deafness. Herpes zoster may be associated with a secondary bacterial infection in the rash area. Necrotising fasciitis is a possible complication. Secondary meningoencephalitis after a cephalic herpes zoster is more likely to occur in immunocompromised patients than immunocompetent patients. Other complications of CNS - includes myelitis, cranial nerve palsy and granulomatous angina. Granulomatous angina may result in a cerebrovascular accident. Zoster is first disseminated to immunocompromised persons. Guillain - Barré syndrome is a rare complication from reactivation of latent VZV, and facial paralysis in cases and we Zoster sine

### Materials and Methods

Data for the realization of this retrospective study, are used by clinical records and data UHC Infectious Service, the Statistical Service UHC and IPH 133



patients cards have been studied, ages 15-90 years, admitted to the Infectious Service UHC, in the period January 2009 - December 2013, retrospectively. For all patients previously compiled a file type (database) which includes a set of parameters necessary for our study.

## Results

In our study covering the period 2009 - 2013 the largest number of cases was observed in 2010 with 35 patients diagnosed with Herpes Zoster ( chart 1). The analysis of data shows that the age group most affected by the Herpes Zoster is 50-70 years. About 70% of patients are older than 50 years old in accordance with the theory. Less affected age group is 10-30 years old. (Chart 4) On the basis of the gender distribution of our patients were 78 females and 55 males, the report is more or less in line with the findings of most studies in this field, although there is no clear shpegim for this predominantly female ( chart 5 ) The subjects in the study were divided into two groups: 86 normal subjects and 47 with compromised immunity. It is noted that 65% of patients studied were normal subjects ( 10% during UV radiation, 48% under stress, 4% in some kind of sports) and 35% are immunocompromised patients (11% with corticoid therapy, type 2 DM 8%, 6% with cancer, and 10% HIV ) ( chart 6) In our study the percentage of pain before the appearance of herpetic elements occupies the major share with 77%. Start of pain during herpetic appearance of elements coincides with 9% of cases. According to our survey showed that 82 patients were presented with simple vesicle, among which 55 normal subjects, ( 13 UV radiation, 14 under stress, 6 sportist of marcia sports) , 2 Ca and 10 with corticoid therapy. The rest of the patients, 51 resulted in blisters ulcero - hemorrhagic among which: 14 normal subjects ( 11 uv radiation, 3 wrestling sports) , 9 Diabetes mellitus type 2, 6 Ca, 12 with corticoid therapy and 10 HIV.( chart 7)

The data showed a topographical spread more frequent in the thoracic region (39%), consistent with theoretical data, followed by a high frequency in the region of the head and Lumbo - sacral. (Chart 8) In the study patients was observed that 72 of them present complications in a percentage distribution as follows, where the largest source of PHN with Roughly 44% to the theoretical values.( chart 9)

Chart 1

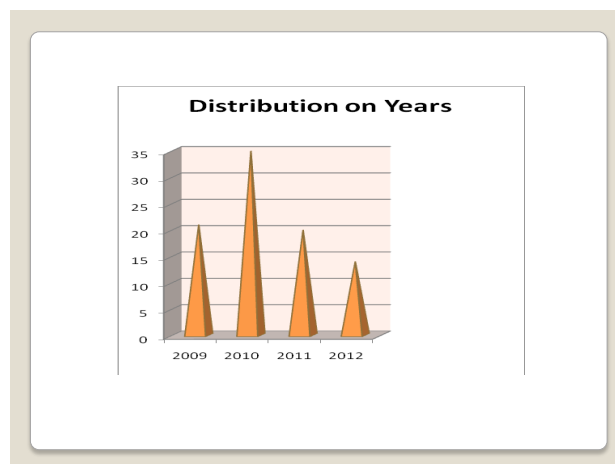


Chart 4

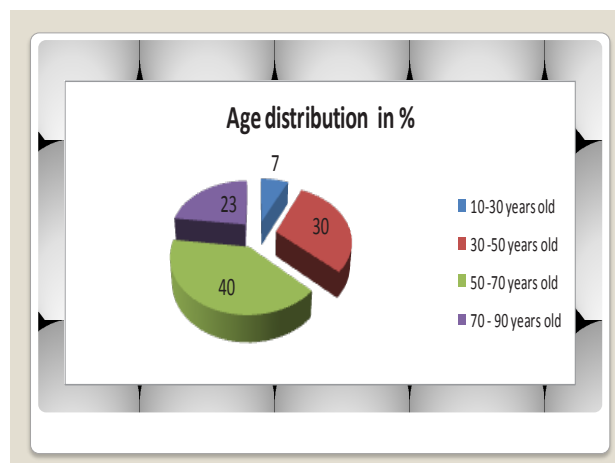


Chart 5

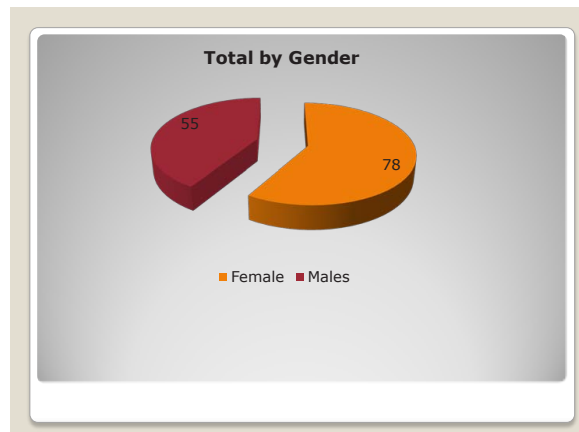


Chart 6

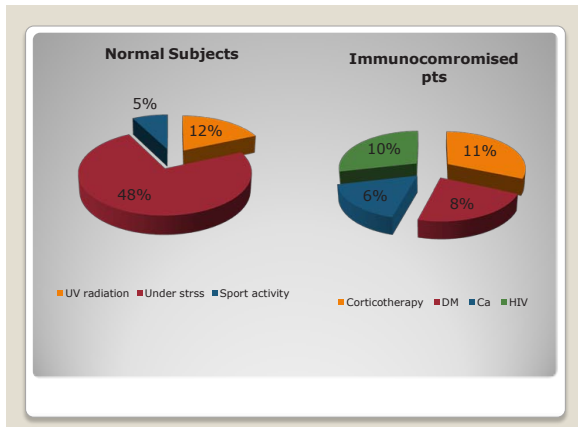


Chart 7

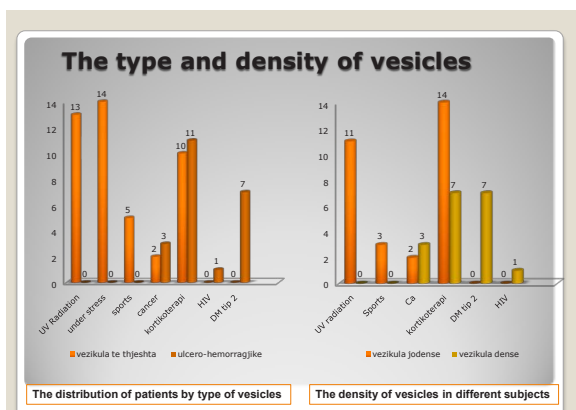


Chart 8

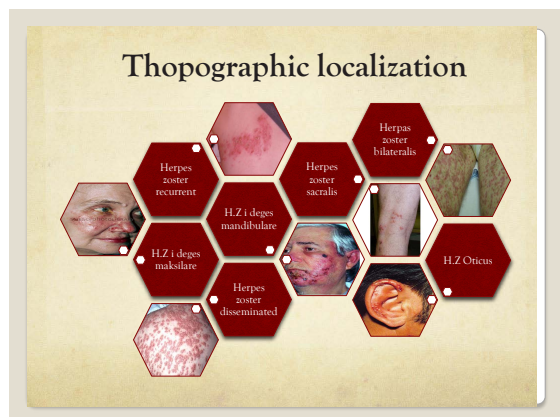
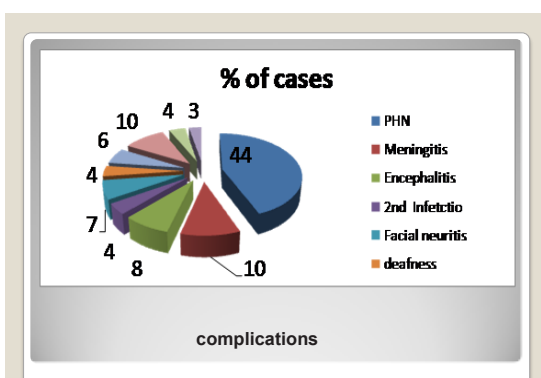


Chart 9



## Conclusions:

From the analysis of our study was observed that the specific weight of diseases until 2013 was 2.1% in our clinic. Herpes Zoster is a widespread disease in our country. The disease was prevalent more among women (48 cases), although no explanation for this predominance. Cases reported in 2010 accounted for the majority with 31%. The clinical spectrum of patients resulted in these symptoms: pain, fever and skin herpetic elements. 77% of patients were referred to the onset of pain before the appearance of blisters on the skin and pain 9% of them had begun with the emergence of elements. In analyzing the type and density of vesicles it showed that 55 subjects had normal simple vesicle and 6 UV radiation, 10 under stress, 4 sportist of marcial and water sports, 6 ulcero - hemorrhagic, among them 47 with non dense vesicles and 9 dense vesicles. Subjects with corticosteroids resulted simple vesicle 10 and 11 ulcero - hemorrhagic, among them 14 with non dense vesicles and 7 with dense vesicles. Patients with type 2 mellitus Daibet 7 with blisters resulted ulcero - hemorrhagic and dense and HIV case presented vesicles ulcero - hemorrhagic dense. Referring HZV topography there was a greater number of cases touch thoracic (27 cases), headache (20 cases) and lumbosacral 14 times. In our patients it was observed as complication dominant PHN with 44% of cases. Keratitis 10%, Meningitis and Encephalitis and 8%.

## Discussion

### Ongoing Monitoring and Prevention

Zoster's typical cases can be treated in hospital and does not require prolonged chase. Patients should be informed about the natural progression of herpes and its potential complications. The initial assessment should indicate the possibility of atypical manifestations. Pain relief should be the primary concern. After initial treatment, further care directed towards the occur-

rence of complications (eg. The secondary infection, or tactile eye, meningeal or visceral) and consequences such as PHN. Patients who develop PHN should be constantly observed and supported the apart emotionally Therapy Routine use of the vaccine virus is weakened VZV living has led to a reduction in the incidence of primary varicella infection. Moreover, vaccinated children have demonstrated lower levels of herpes zoster than those infected by natural exposure to VZV. [97,98] However, the effect of childhood vaccination in the incidence of herpes zoster in the adult population remains to be clarified. Prevention and weakening of herpes zoster is especially desirable in elderly patients because zoster is more frequent and associated with more complications in the older population and that due to the collapse of cellular immunity in older age groups. Zoster is observed and in same sports as marcial or wrestling sports where during herpetic stage contact with sweat, eyes, face and body can stick to other sportsman, swimming who use the same towel, heavy sports who are associated with the reduction in immunity. In cases where athletes exhibit herpes zoster is not recommended sports with high intensity for reasons that lead to decreased immunity. In these cases it is advisable calm to herpetic vesicles phase; and after easier physical activity in the medium; as walking, swimming or cycling that influence the growth of immunity It brings a high doze for zoster. Zostavax is generally well tolerated by older adults. [99] A programming a zoster vaccine immunization in old age may have cost - effectiveness and the potential to reduce the incidence of herpes zoster or reduce its severity.

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## ORIGINAL ARTICLE

## Stigma and discrimination against obesity

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## Abstract

Prevalence of obese people is increasing day by day all over the world, including Albania. Although, in our country the figures are still low compared with other countries. Obese persons, experience a high level of stigma and prejudice in many contexts of life, which increases the possibility that obese people experience psychological problems, which makes it difficult for them greatly daily functioning. This is a qualitative research. Given the issue and what is expected to be revealed is supposed that it would be more efficient if it will evolve in such a way. This study aims to explore and understand in depth a problem as stigma and prejudice against obese people. For this study were conducted 21 in-depth interviews and four focus groups. A total of 30 people attended, obese and non obese persons. The sample was an equal number of men and women. The study showed that stigma and discrimination against obese persons are present in many contexts. Stigma and discrimination against obese persons are present in children, adolescents, adults, in the context of health, etc.

**Keywords:** *obesity, stigma, discrimination, health services*

## Introduction

Prevalence of obese people is increasing day by day all over the world, including Albania. Although, in our country the figures are still low compared with other countries. There is a dramatic increase in obesity figures, which has prompted the World Health Organization to consider obesity a global epidemic. Despite the world-wide spread of this problem and understanding of concepts related to genetic heritage weight, negative attitudes and behaviors associated with obese people continue to be present in all industrialized societies. This is likely to be related to the overvaluation that in these societies become the elegant body shape. Field researchers think scorn and diskretititmi persons, unfortunately are still present, remaining as the last form “socially acceptable” prejudice. Prejudice against obese persons, starts soon. Crandall 1999, for example, found that obese children had less support from their families to pay

for school, compared with their peers with normal weight. Associated with weight discrimination appears more in women rather than men. Roehlin, Puhl and Brownell, 1999, have confirmed this in a study with 210 subjects. In this study, highlight the link that exists between two factors obesity, prejudice and discrimination - which is likely to contribute to psychological problems in obese persons. The presence of stigma and prejudice, incresases psychological problems to obese people, paying special attention to risk factors, including sex, presence of binge episodes and degree of obesity. Impact of body image is very large in quality of life, as the effects of losing and regaining weight to psychological state. Also, stigma and discrimination, can be linked with the complications that can arise during psychosocial treatment to obese people. This is due to the prejudices of staff delivering health services.



## Methodology

This is a qualitative research. Given the issue and what is expected to be revealed is supposed that it would be more efficient if it will evolve in such a way. This study aims to explore and understand in depth a problem as stigma and prejudice against obese people. The instruments with which was worked were depth personal interviews and focus groups. One focus group was conducted with each target and 23 personal interviews. The interview was constructed based primarily on literature related to the issue. The interviews were administered by psychologists. Likewise also focus-group is directed and assisted by psychologists. The sample had various features within the supposed target. Targets have been children, pupils of different ages, employees in the health system, etc. Given the gender, we were equal numbers of both genders. Attempts have been made to respect the ethical aspects. Thus, confidentiality was maintained, participants were explained what this study aims to measure what was explained that they are free to participate or not, etc.

## Results

Attitudes antiweight are observed in children 6 years of age, who characterized a silhouette of an obese child as “lazy”, “dirty”, “stupid” and “ugly”. The stigma associated with obesity continues to be present even in adolescence and adulthood. It is also noticed that the providers of healthcare services, have negative attitudes towards obese persons. Doctors linked obesity with lack of hygiene, lack of cooperation and hostility. Nurses said that obese people hide more unresolved anger, are more lazy and less successful than people with normal weight. People with normal weight, is thought to have stronger attitudes anti-obesity than obese persons. However, obese children demonstrated more robust attitude “obesity is bad” compared to normal weight children. Among adults, negative attitudes toward obesity, appear to be unrelated to age. Natural consequences of nega-

tive attitudes towards obese people is discriminatory behavior. Obese persons are prejudiced even in the context of work.

## Discussion

Prejudice and discrimination can be conceptualized as a stressor that chronically significant impact on emotional wellbeing. Against their social base, makes obese people have a lot more stress and psychological problems than their similar with normal weight. If we refer to the study for the presence of antiweight attitudes in children 6 years of age, we will see that they marked a silhouette of an obese child as “lazy”, “dirty”, “stupid” and “ugly”. However these children said that sometimes “appearance lies.” Information regarding stereotype “Fat ugly” was also found to three year old boys and girls. Children in this study identified a chubby children more negatively than another child to thin or with normal weight. The stigma associated with obesity continues to be present even in adolescence and adulthood. Thus, for example, high school students, 15-16-17 years of obese persons defined as little or no attractive as potential marriage partners. It is also noticed that the providers of healthcare services, have negative attitudes towards obese persons. In one study, physicians linked obesity with lack of hygiene, lack of cooperation and hostility. Nurses said that obese people hide more unresolved anger, are more lazy and less successful than people with normal weight. Health service providers, specialized for obesity problems appeared much less negative attitudes about obese people. However, they definitely showed negative attitudes, but at a lower level than the general population. People with normal weight, is thought to have stronger attitudes anti-obesity than obese persons. Obese children demonstrated more robust attitude “obesity is bad” compared to normal weight children. Among adults, negative attitudes toward obesity, appear to be unrelated to age. The relationship between BMI and attitudes consistently under- anti-obesity, suggests that

obese individuals themselves can connect obesity with unfavorable features. Natural consequences of negative attitudes towards obese people is discriminatory behavior. Findings from Hebl and Mannix, 2001, illustrated the possibility that obese persons are unfairly evaluated in the context of work. Thus, various studies have found discriminatory treatment of obese persons, especially obese women - in all stages of employment, ranging selection, division of labor, compensation, promotion, discipline, rewards. Obese individuals participating in the study, stated that continually experience discrimination in the work context. Discrimination is also present in the context educational. Obese persons, said they have consistently experienced stigma and discrimination in the context educational in their university studies, master's, or professional courses in which they participate.

### Conclusions

Prejudice and discrimination are chronic stressors and have a significant impact on the psychological and emotional wellbeing. If we refer to the study for the presence of antiobese attitudes in children 6 years of age, we will see that they marked a silhouette of an obese child as "lazy", "dirty", "stupid" and "ugly." The stigma associated obesity continues to be present even in adolescence and adulthood. It is also noticed that the providers of healthcare services, have negative attitudes towards obese persons. Discriminatory behavior is a natural consequences of negative attitudes toward obese persons obese. Participants said they have consistently experienced stigma and discrimination in the context edukacional. Also, even in the context of working people say they faced discrimination.

### Recommendations

It would be nice to have more information about obesity in the population, in order to understand that obesity is not related to personality characteristics such as

"lazy", or "Not ambitious". These are myths, which in most cases are not true. In general, it is observed that there is no information that obesity is a physical condition and in most cases not related to personality characteristics. Publicity spots can be organized, or where the information leaflets provided information on obesity, which in turn will lead to the reduction of stigma and discrimination against obese people. It is seen that stigma and discrimination are obese puts people at a greater risk for depression and related problems compared with those nonobese, which implies urgency to try to reduce them.

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## ORIGINAL ARTICLE

## Football as a tool to improve motor movement to the youth in the age before pubertal.

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### Abstract

Physical development and activity are those structural components without which the full expression of human skills in one or another sphere of activity is virtually unthinkable. Their importance grows with the occurrence of extensive scientific and technological revolution, the intellectualization of modern life and the resulting changes in the conditions for the development and growth of the modern child. On the level of physical development and physical training is important to target the educational impact held under the laws of ontogenetic development and motor sensitivity / feeling / adolescents. Football is a variety of games with the ball, originating from ancient times. Played mostly uncovered soils. Nowadays, especially after the ideas of the last 2-3 years FIFA to promote the game of football took its varieties (most often change the rules regarding the size of the field of play, number of players and the duration, type the playing field, etc.) Typical of soccer, actions carried out primarily by the lower limbs, and less from other parts of the body. It is forbidden to play with hands, except the keeper and described in a particular area. This study is based on the continued growth of the role of the characteristics of age, changes in development functional morphology and processes acceded rational children of elementary school age. The aim of our study was to learn the impact of football-specific skills above the motor skills to adolescents in the period before pubertal age 9-11 years (of class III - IV). Tasks that we have set are as follows: Introduction and summary analysis of literatures and pedagogical experience on the issue. Exploring age change in physical development and physical skills of children in that age studied. Varacionale analysis and rational acceded corelacionale changes in anthropometric basic signs and physical properties studied contingent who practice soccer-boys.

**Key words:** *Football, adolescents, motor, physical development, physical training, FIFA.*

### Introduction

Physical development and activity are those structural components without which the full expression of human capabilities in one or another sphere of activity is virtually unthinkable. Their relevance increases with widespread occurrence of the scientific and technological revolution, the intellectualization of modern life and the resulting changes in the conditions for the development and growth of the modern child. Along with improved living conditions increase the influence of some factors with a negative impact. Real fact is reduced physical activity, especially negative impact of hipodinamiya on the child's body. The de-

gree of physical development and physical training is emphasized targeted educational goals held under the laws of ontogenetic development and motor sensitivity / tenderness / adolescents. The question about the state of physical development and physical fitness of adolescents and is directly related to the preparation of young athletes because as their dynamics and peculiarities of manifestation depends on the prosperity of their later as elite athletes. In this regard, adolescent players are no exception. Experience the most famous players clearly shows that implementing the multiannual training in their initial stage of sports training are paid attention as the general and special physical culture and technical dexterity , and

the extent and especially the harmony of their fitness. This means that they are of good comprehensive development of physical skills and the necessary motor - coordination skills. Need young players to be able to start and rapidly flee with maximum frequency and speed are durable and possess freedom is subject to the exercise. In modern football game increasingly need athleticism and rich physical coordination. This trend now - in terms of European and world globalization of football across the board will expand and deepen.

### Materials and methods

This study is based on the continued growth of the role of age characteristics, changes in morphofunctional development and aktseleatsionnitate processes of children of primary school age. I had to ensue from the fact that in contemporary literature in physical education and sports teaching practice are insufficiently studied issues of physical development, physical fitness and performance of young people. All this led us to formulate a topic, goals and objectives of our thesis; we hope that its development will contribute to the optimization problem. Use the following methods in the conduct of our study: a) Introduction, analysis and summary of documentary and literary sources Were explored issues directly and indirectly treating the subject of study by morphofunctional peculiarities in the development of students, pedagogical features in their training, tests to increase physical fitness, the different views to enhance physical development and effectiveness of learning in primary school and others?

#### b) Pedagogical monitoring

Observe, analyze and summarize the characteristics in physical development and physical fitness, and the impact of football on the differences in the nature, volume and intensity of exercise on the subject of our experimental study.

Research and experiments were conducted in confor-

mity with the metrological requirements for accurate measurements (Cl. Boychev, 1988). First, it affects the metrological inspection of equipment and facilities, and the accuracy of certain methods of research boils fallacy in measurements to a minimum. Secondly, particular attention was paid to standartnostta in implementing the tested individual. For this purpose we give and commit to a methodological guidance to both experienced individuals and to conduct research technicians.

### Results and Discussions

Football is a variety of ball games, originated in ancient times. Played mostly outdoors. Nowadays, especially after the ideas in the last one or two years of FIFA to promote the game of football took its varieties (most often vary the rules regarding the size of the playing field, the number of players and the duration, type of playing field, etc.) Typical of the football game, the actions are performed advantageously in the lower extremities, and less by the other parts of the body. It is forbidden to play with her hands except the keeper and it outlined in a special box. According to M. Godik, A. Shishkov (1983) Structure of the players actions are characterized by a large variation due to the rapidly changing game situations with a variety of movements with the ball other travel speed, with challenges and use of technical and tactical actions in a difficult environment. In recent years, the problem of optimizing the physical activity of children of preschool and school age becomes more relevant. Locomotor movements and came of them exercise are natural physiological means of health, prevention of illness and number of magnifications and abilities. The movements are a natural human biological stimulus that activates metabolism, improves breathing and circulation, increases the body's defenses.

After working with the children during the year (October to March) USE typical football exercises and measurements made at the beginning and end of the results table entries and result in an average graphics.

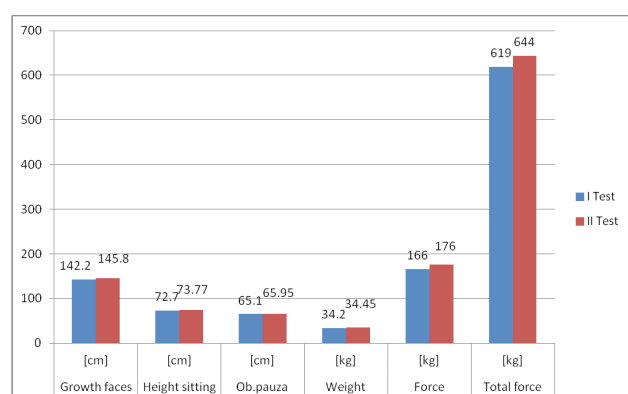
The results obtained by the method of the processed analysis.

We compared the data for each indicator and test for first and second study. Dynamics anthropometric indicators are set out in Table 1. The table set arithmetic average of the analysis is facilitated by the flow chart in Figure 1.

*Tab.1. Dynamics of anthropometric indicators*

	Growth faces [cm]	Height sitting [cm]	Ob.pauza [cm]	Weight [kg]	Force [kg]	Total force [kg]
I Test	142,2	72,7	65,1	34,2	166	619
II Test	145,8	73,77	65,95	34,45	176	644

*Fig. 1. Dynamics of anthropometric indicators*



Danny physical development are one-way with respect to the trend of change, is they increase with age. At the beginning of the study children had an average increase of 142.2cm, and in the second study, the average increase was 145.8 cm but I dare say that this is the result of active sessions with football. Besides natural ways of growing children in this period of their lives might observe the beginnings of starting and pubertal development. However, growth in height of boys is accompanied by a guaranteed probability of  $Pt \geq 95\%$ , and that speaks for its reliability,

though the reasons for this growth.

In analyzing the data from the arithmetic average weight find that it has increased its value in the second study. The body weight of 34 became 2 kg of 34 or 45 kg increase in weight is a quarter- pound, for which, however, we found no statistical confidence ( $Pt \leq 95\%$ ). For the time during which the study is chest circumference of children, it has risen by nearly

1 cm increase, but the difference is not statistically significant -  $Pt \leq 95\%$ .

Our conclusion is that the pre-pubertal age period components of physical development of children grow upward, but uneven. Corresponding database of physical ability, it is clear that the picture in terms of the components of physical capacity is not significantly different from that of physical development. Age dynamics of all monitored components is rising, but uneven.

## Conclusions

Results of the survey show the main influence on anthropometric indicators related to natural biological development of children. Test shows that soccer can be successfully used as a tool to improve motor skills of adolescents. Football activities affect the speed skills, physical skills and coordination. The football as a tool for improving the positive impact of physical development and motor opportunities to children adolescents.

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## ORIGINAL ARTICLE

## Impact of inclusiveness policies in the budget of the university (Case study of Sport University of Tirana)

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### Abstract

This research addresses the impact of the educational system policies of higher education harmonized with social policies into the budget of higher education institutions, taking into consideration the case of Sport University of Tirana. Nowadays, all-inclusiveness principle is an integral part of the higher education in order to support as well the learning process of the vulnerable groups in a competitive environment for the development of the public education provision. This analysis is focused on the study done for more than 5 years period (2010-2015) on the amount of revenues in the Sports University of Tirana, how the policy of tuition fees has led to a reduction or increase of revenues in the budget of the University, and as well problems, obstacles and challenges faced during this period, including the changes in legislation. Research methodology includes a mixture of qualitative and quantitative ones, covering legislation of higher education, strategic documents, other research papers related to the focus of this article, including social policies to support vulnerable groups and financial aspects of their delivery in higher education. The added value of this study is the analysis of statistical data on tuition fees and scholarships at the Sports University in Tirana (former Academy of Physical Education and Sports “Vojo Kushi”) over 5 years. The comparative analysis of the higher education legislation in years identified strengths, shortcomings and its potential for improvements to be made, and address as well the challenges for the future. The findings of this study will serve as recommendations for further improvement of policies and practices related to financial aspects especially those linked to institutional and procedural mechanisms, so that universities will align the growth of numbers of students from underrepresented groups with a range of academic and general support services to assist student transition, retention and completion.

**Key words.** *Revenues, tuition fees, scholarships, University budget, educational policies, all inclusiveness*

### Introduction

The array of challenges that higher education faces today is virtually unparalleled with when compared to any other point in Albanian history. The litany of changes is familiar to those dealing with higher education, including: financial pressure, changing university role, growth in technology, public scrutiny, competing values, changing demographics and the globalization. There is little doubt that the modern

university is far different to that of the early 90s and the work of academics has changed considerably over this time driven by the efficiency and accountability agenda. In taking stock of the changes, it needs to be recognized that often the cry for efficiency and accountability has been used as a mechanism for control, cost reductions and to drive particular policy agendas. In broad terms, management practices in the tertiary education sector have shifted from a collegial to a corporate or commercial paradigm.

Whilst higher education is seen as a major driver of a nations' economic and social well-being, the growth in higher education participation puts enormous strains on the public purse (Scott, Peter, 1998). This has led to higher education institutions (HEIs) diversifying their income sources. High-quality provision of higher education ensures that HEIs can provide students with the best possible training. There is an argument that the introduction of market virtues into the higher education system will increase HEIs' responsiveness to the needs of students and the labour market into which they should transition following graduation. As well, the equity notion (i) argues that those who benefit directly from higher education should also contribute to its costs... (ii) focusses on current barriers to higher education participation and asks whether additional costs at entry to higher education will increase these barriers, making higher education participation even more unfair than before. These two perspectives do not have to be contradictions, since the additional money raised through private revenues can be used to support under-represented groups.

Over the past decades researchers working on the question of public and private goods have turned significant attention to the nature of production in higher education. (Ehrenberd 2001). Much of this literature has been generated after the changes in the broader political economy that have challenged higher education institutions and policy makers to justify the existing understandings of the provision, finance and outcomes in higher education (Slahghter and Leslie, 1997). In the policy arena the majority of the public debate over public and private goods in the contemporary higher education has revolved over the issue of whether the public benefits of higher education institutions justify the public investments in those benefits (Pusser 2006).

Meantime, literature recognizes the fact that higher education is a key factor in a nation's effort to develop a highly skilled workforce for competing in the global economy (Kooij Y., 2015). There are important

private and public benefits to participating in higher education. Higher salaries, better employment opportunities, increased savings, and upward mobility are some of the private economic benefits obtained by taking part in tertiary education. A tertiary education graduate also obtains non-economic benefits including, a better quality of life, improved health, and greater opportunities for the future. Given the extensive social and private benefits that result from tertiary education, access and inclusion are essential for achieving social justice and ensuring the realization of the full potential of all young people. First, in the interest of fairness, every individual must be given an equal chance to partake in tertiary education and its benefits irrespective of income and other social characteristics including gender, ethnicity, and language. Second, there is a strong efficiency argument in favour of equity promotion. A talented but low-income student who is denied entry into tertiary education represents a loss of human capital for society. The lack of opportunities for access and success in tertiary education will lead to under- or undeveloped human resources.

In the individual perspective, there are both non-monetary and monetary barriers to entry into higher education (World Bank, 2009). Academic ability, information access, motivation, inflexibility of university admission processes, and family environment and others forms of cultural capital are some of the non-monetary reasons that have been recognized as important factors in explaining poor participation of low-income individuals in tertiary education. There are different monetary barriers to higher education, i.e. the cost-benefit barrier and the cash-constraint or liquidity barrier. The cost-benefit barrier occurs when an individual decides that the costs of attending university (including tuition and living expenses as well as opportunity costs of not working during the duration of the course) outweigh the returns to their education. Liquidity barriers refer to a student's inability to gather the necessary resources to pursue ter-



tiary education after having decided that the benefits do outweigh the costs. These monetary barriers are contributing to rising inequity in tertiary education participation

The context generally considered to be of benefit to the individual, even where it does not demonstrably increase overall lifetime earnings, and that access to higher education is not unbiased, in that young people from families of higher socioeconomic status whose parents have higher education degrees are more likely to take higher education than those of lower socioeconomic status with little or no education traditions in the family. Granted, this argument raises the question of individual versus group rights, but it should at least serve to illustrate the fact that higher education free of charge to the individual is not an issue to be phrased in black and white. The point is also illustrated by the opposite possibility: students paying the full cost of their education. Apart from the fact that the full cost of some study programs would be prohibitive and could cut society off from certain kinds of much-needed competence, this model is also untenable on reasons of principle. While the benefits of higher education may be most immediately felt by those who graduate from it, all members of society benefit to some extent from a high general level of competence in that society.

## Methodology

The selected method of research for this case study is both qualitative and quantitative. It includes as follows:

- Literature review. Desk research was carried out to investigate facts and findings from different relevant documents, such as: Higher Education legal framework, Financial Legislation, strategies on higher education system, other research reports, etc.
- Collecting data and elaborating information from different sources and verifying through interviews

with peers in other higher education institutions, representatives from Ministry of Education and Sports, Ministry of Finance and other stakeholders. The semi-structured interviews offered good qualitative insights into the hard data provided by the desk research.

- Statistical data analysis of the selected period on revenues of the Sports University of Tirana.

## Albanian Context

In recent decades, higher education systems in Europe have been undergoing a major transformation influenced by national and international developments such as the rapid expansion of student enrolment, a relative decrease in public funding along with a shortage of private funding, the increasing importance of research and innovation in the global and knowledge-based economy, and wider competition between higher education institutions. More recently, the impact of the Bologna Process on curricular reform, quality assurance, and mobility has become one of the key propellers of change. The need to address these profound changes and to improve the quality of European higher education has led to reviews of the institutional governance structures. Although public authorities retain a central role in regulating and coordinating higher education across (most of) Europe, there has been a gradual shift in recent years away from detailed state control and toward external guidance by different stakeholders. Within the higher education institutions, governance structures have shifted away from the traditional mode of academic self-government and toward new models of managerial self-government. Albania cannot stand apart from such developments. Weaknesses in the Albanian education and training system and the labour market hinder the full development and use of the country's human capital.

According to the Constitution, the Government and Parliamentary Bodies determine educational policy

for tertiary education. They formulate and adopted laws and other regulations and execute other activities in the field of tertiary education. The Ministry of Education and Sports and local or municipal authorities ensure that citizens' requirements in the field of education are met. The State Administration's activities in higher education at national level are executed by the Ministry of Education and Sports. The new Law on Higher Education (2015) regulates the activities of HEI-s, the governance and the practices of the HE system, etc.

Public HEI-s are autonomous. Autonomy might be described as freedom for higher education institutions to run their own activity, in particular in relation to governance, finance and administration and as well study programs (including teaching and examining process).

HEI-s charge tuition fees that are decided by the government. Tuition fees constitute one of the main sources of incomes for universities and include, mainly as following: the fees paid by students for their study programs; and the fees paid by part time student students.

Meantime, there are scholarships for the most gifted students and financial support for students from vulnerable groups. For students with financial difficulties the universities provide scholarships, following attestation of the financial situation of their family. The support arrangements are thought to be not well targeted on the poor, mainly because there is no reliable source of information about the financial status of families – not least because of the extent of the informal economy. Universities are encouraged to seek private funding. The University is required to report on the amount and use of this private funding.

According to the recommendations of the Final Report for the Reform on Higher Education and Scientific Research (2014), Higher education in Albania is and must be a public good and, as such, requires consistently funding and attention of the state provision. Also, higher education should be based on the

principle of equal opportunities. The state should assist students who meet the criteria but are unable to finance their studies, in accordance with the capacity, public financing possibilities and priorities of development in the country. Among others the proposal includes: (i) Vulnerable groups should be financed by the state special fund (social scholarships), according to the relevant terms and conditions; (ii) Students of Excellence should be funded by the state, regardless of their economic status.

If higher education is to be made more widely accessible, a reasonable student support scheme therefore seems to be vital, but there may be a case for designing it in such a way that it caters in particular to less favoured students. Direct student support scholarships is, however, only a part of the discussion. To the extent students do not pay the full cost of their education, they receive public support, and the question is how much such support they should receive or – to phrase it in more controversial terms – whether they should pay study fees.

Based on the DCM No. 699, dated on 22/10/2014, have benefited exemption or reduction from the yearly tuition fees such vulnerable groups as orphans, blind, deaf, dumb, invalid, former political prisoners or their children, Egyptians and Roma people, children of policemen or soldiers killed or wounded on duty, etc. It also defines the conditions governing exemptions from and reductions in the aforementioned costs, in addition to setting public prices for higher education, in order to ensure that no-one is excluded from university study for financial reasons

Meantime, based on the DCM No. 911, dated on 11.11.2015 are precisely defined the criteria used in order to supply scholarships to the predefined target groups.

### **Case of Sports University**

Sports University of Tirana (SUT) is a public university with academic, sports and science character. SU

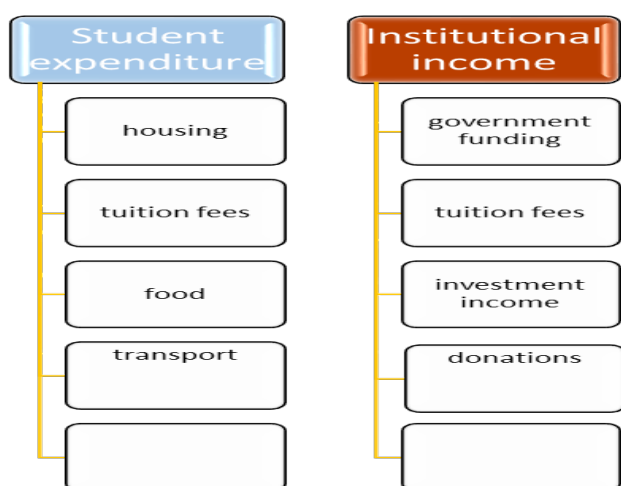


has three basic units; Faculty of Movement Sciences, Faculty of Physical Activity and Recreation, and the Scientific Research Institute of Sports established on the basis of the Scientific Research Centre of Sports. SU, as a unique institution of the field of Physical Activity and Sport, offers study programs for three cycles, in the framework of the two faculties.

Student's admission in SUT are made through the sports attestation. Applied research is conducted in the field of sports science and recently were filed three new laboratories in order to research and teaching. Scientific activity is supported and always takes place on the basis of cooperation and standardization at European and world level.

As abovementioned, the tuition fees constitute a significant part of the revenue generation in SU, which in literature is considered as part of the cost-sharing strategies for integrative approaches to institutional funding and student aid (see fig.1)

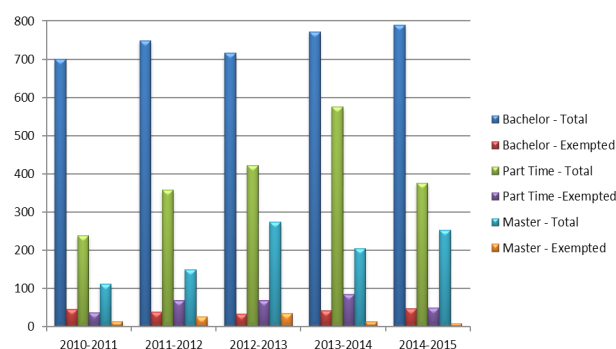
Figure 1. Tuition fees in the context of student expenditures and institutional revenues (Orr D., Usher A., Wespel J., 2014)



As far as initiatives taken by the Albanian Government to attract and retain disadvantaged students are concerned and help them to graduate, DCM No. 699, dated on 22/10/2014, sets out the costs to be met by public services in higher education at the SUT. The

enrolment of students in SUT compared to those that are exempted or benefit cuts from tuition fees are during 2010-2015 results as in Fig. 2.

Participation of students in comparison with students exempted from tuition fees



Participation of students in comparison with students exempted from tuition fees

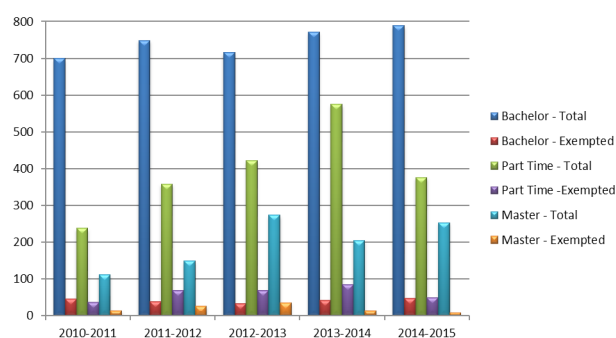
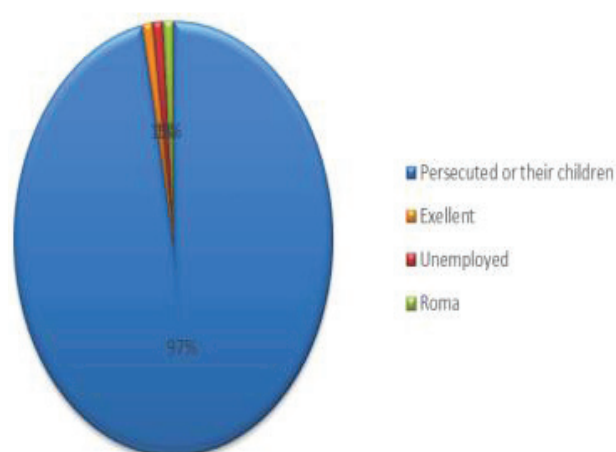


Figure 2. Participation of students in total compared with those exempted from tuition fees in SU

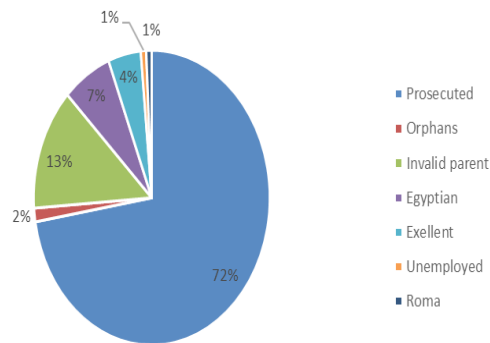
The typology of the students that have benefited reduction or even exemption from the tuition fees through years is as in Fig.3.

Figure 3. Categories of the students who benefit reduction or exemption from tuition fees in SUT

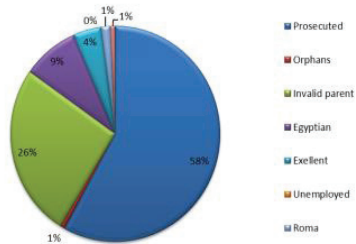
Exemption from fees per category (2010-2011)



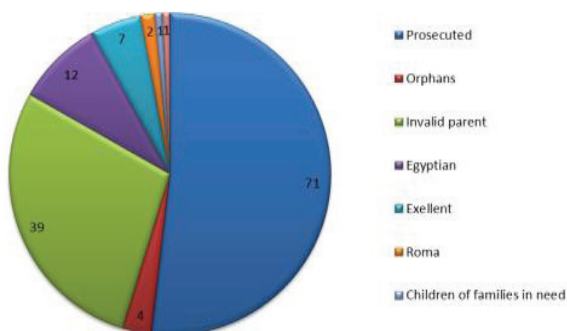
Exemption from fees per category (2011-2012)



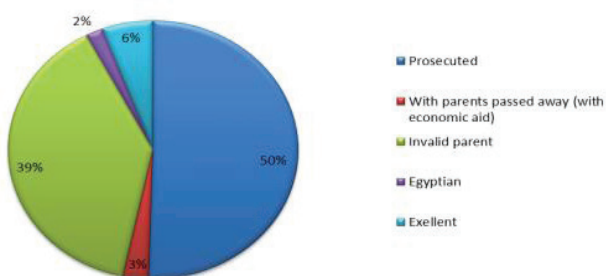
Exemption from fees per category (2012-2013)



Exemption from fees per category (2013-2014)



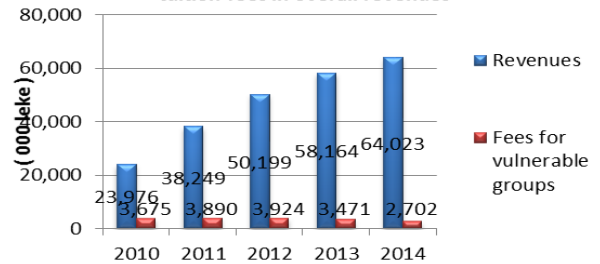
Exemption from fees per category (2014-2015)



The typology of students benefiting reduction or exemption from the tuition fees is quite diverse and is extended through years due to the all-inclusiveness policy of state in higher education

Let's see the implication of government regulation for applying the exemption and reduction in tuition fees for the vulnerable groups in SUT during 2010-2015:

The effect of the exemption/reduction from tuition fees in overall revenues



The effect (in percentage) from fees exemption/reduction by year

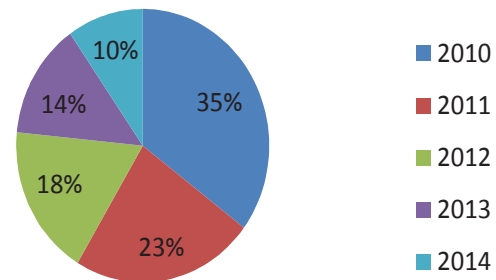
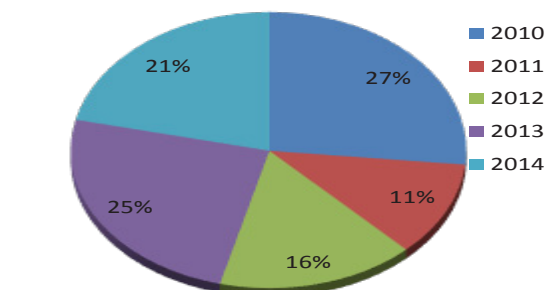
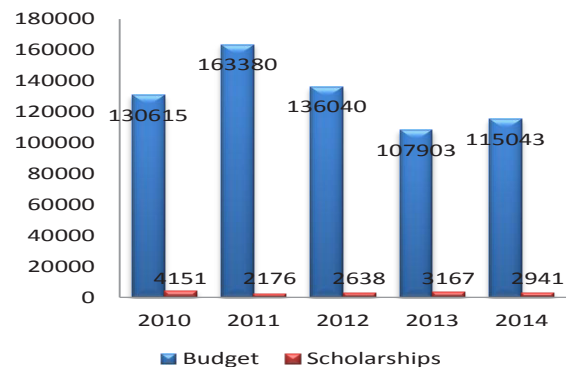


Figure 4. The effect of exemption/reduction of tuition fees in SUT revenues



Despite this social support generally considered to be of benefit to the individual and society at all, the respective impact in the overall level of University's revenues is negative. Meaning, the contribution of such social policies have decreased the share of tuition fees in the total University budget.

In fact, tuition fees are on the rise nation-wide and scholarships are considered as valuable policy instruments to give access to higher education for students of all income levels. Meantime, mainly for students with financial difficulties the universities provide scholarships, following attestation of the financial situation of their family. The scholarships are supplied based on predefined criteria adopted from the government. The implication of such policies in the Universities budget is as follows:

*Figure 5. The effect of scholarships in the University budget*

Based on the analysis of the historical data, from 2010 till 2014, **although, such programs aim to improve access and equity for the marginalized groups, and motivate students to work harder, by giving support to high-achieving and/or low-income students, their impact in the university budgets remains stable but still negative.**

## Discussion and Conclusions

The introduction/increase of tuition fees usually makes the system better overall, by increasing the total amount of resources available, but the integration of the government aid toward disadvantaged students has decreased their impact in overall HE budget. This will imply the necessity to find out alternative cost sharing ways to increase the revenues. Improving university student retention should be one of the high-priority targets. At the same time, HEI-s should try to increase the participation of students from traditionally underrepresented groups of population in order to meet the aspirations of government. The changes in policies and performance-based funding require universities to align the growth of numbers of students from underrepresented groups with a range of academic and general support services to support student transition, retention and completion.

Government bear the main responsibility for ensuring equal opportunities in higher education, including access policies and student finance. This is a crucial

area in making higher education as much of a public good as possible, and the overall goal for public authorities in this area must be to make sure that any person living in the country be able to make full use of his or her abilities regardless of socioeconomic and cultural background, financial possibilities and previous education opportunities.

Public authorities have an important financial responsibility for higher education. Public funds may and should be supplemented by money from other sources, but these alternative funding sources should never be a pretext for public authorities not to provide substantial public resources. However, the overall responsibility for the exercise and for its success or failure remains in the public domain – which is to say it is a collective responsibility for all of us as citizens of democratic societies.

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## ORIGINAL ARTICLE

## Analysis of some motor skills of pupils practising different kinds of martial arts

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## Abstract:

Martial arts, according to the general concept, include different types of Asian self-defense systems and fighting styles – with or without a cold steel, fighting one or several opponents.

This paper aims to show some physical abilities that are acquired by students practicing some non traditional sports. Contingent of this research are 86 students between 12 -13 years old. The research was held at the above mentioned karate, taekwondo and kung fu sports clubs in Sofia (Bulgaria) in 2013/2014. The following control tests were used to assess the motor skills of the pupils: 1. 50 m running (s); 2. Long jump (cm); 3. Hard ball throwing - 3 kg. (cm); 4. Sit down and touch (the base 50 cm is taken as an neutral reference quantity). The data from the applied variation analysis of the results, obtained from the motor tests, show that the three groups of pupils register similar, uniform results along the different indices of physical fitness. This fact is indicative that among pupils, practising a particular kind of martial art, there are no individuals who are poor or front-running regarding their muscle strength, speed and agility. As a consequence of their training they show different levels of flexibility and might ( $P>95\%$ ). In their speed we did not differentiate any difference. ( $P< 95\%$ ) No such regularity was found in the comparative analysis of the same skills with the groups practising taekwondo and kung fu, and karate and kung fu respectively. The means of the martial art kung fu influence the manifestation of the skill agility of the pupils to the greatest extent.

**Key words:** *physical ability, karate, kung fu, taekwon-do*

## Introduction

Martial arts, according to the general concept, include different types of Asian self-defense systems and fighting styles – with or without a cold steel, fighting one or several opponents.

Among the most popular martial arts all over the world and in Bulgaria are the Japanese **karate** ( – 空手 – „empty hand“), the Korean **taekwondo**, the (태권도 – art of the feet and the hands“), and the Iranian **kung fu To’A** („آوت و فنگ نوک“) (5). Practising them, one aims at achieving spiritual and physical perfection.

The main value of the spiritual and physical perfection of the Eastern peoples is achieving good health. Since ancient times, well-being, power, and allure of physical beauty have been thought of losing their meaning if one is not healthy. That’s why every single person has the responsibility before himself and his family to constantly develop and perfect his organism. In this connection the great Chinese philosopher Confucius (551 - 479 BC) said, „To be healthy means to be devoted to your parents, since their child’s health is a supreme joy”. (1)



While the spiritual perfection is based on the philosophical concepts of Buddhism and Daoism, the physical perfection requires purposeful development of the motor skills of the sports person.

Motor skills are „...a combination of psychic, physiological, and physical characteristics of human organism ...“ (2). They are viewed as a unity, having two comparatively independent sides of manifestation – motor skills and habits and motor qualities (3), two characteristic features of movements (of the physical exercises) in sport, revealing their form and contents. (4)

Due to the different orientation and characteristic features of the particular movements and actions in martial arts, the following **aim of the research** has been formulated: to reveal the special features in the manifestation of some motor skills of pupils practising different kinds of martial arts.

Major **tasks** of the research:

1. Theoretical ground.
2. Assessment of the pupils' motor skills.
3. Comparison of the achievements of the pupils practising martial arts.

**Contingent of the research:** A total of 86 pupils aged between 12 and 13, among whom: 40 – practising taekwondo at the sports clubs Sparta, Ji Do Quan, Te Kion, and Tangra, 22 – practising karate at the sports club Fighters, 24 pupils practising kung fu To'A at the Bulgarian Kung Fu federation To'A.

## Research methods

The research was held at the above mentioned karate, taekwondo and kung fu sports clubs in Sofia (Bulgaria) in 2013/2014. The following control tests were used to assess the motor skills of the pupils: 1. 50 m

running (s); 2. Long jump (cm); 3. Hard ball throwing - 3 kg. (cm); 4. Sit down and touch (the base 50 cm is taken as a neutral reference quantity).

The results were processed with **IBM SPSS Statistics 20**, via the following mathematical-statistical methods: 1) Variation analysis, 2) Hypotheses check – t criteria of Student for independent samples with ( $P \geq 95,0 \%$ ).

## Results

The data from the applied variation analysis of the results, obtained from the motor tests, show that the three groups of pupils register similar, uniform results along the different indices of physical fitness. This fact is indicative that among pupils, practising a particular kind of martial art, there are no individuals who are poor or front-running regarding their muscle strength, speed and agility. The proof of this statement is the calculated variation coefficients (V%), which are smaller than 10%. (Table 1).

An exception is only the index implosive power of the upper limbs of the boys practising karate, ( $V = 12,2\%$ ), who show a satisfactory unity along this index. This supposes that the applied means and methods in the particular training process in taekwondo, karate and kung fu would equally help the development of the motor skills of the sports persons.

At the same time, the calculated distribution values: asymmetry (As.) and excess (Ex.) show a normal distribution, which allows the use of a t-criteria of Student for independent samples. The comparison of the achievements of the pupils, practising different kinds of martial arts, reveals some interesting regularities (Tables 2, 3, and 4).

Table 2 shows that as a result of their purposeful work the pupils practising taekwondo and karate achieve almost the same level of the development of their speed and agility. The lack of a

Table 1

Results from the variation analysis of the pupils practising different kinds of martial arts

№	indices tests	X	S	As.	Ex.	V%
1	Running 50 m. (s)	7,9	0,43	-0,519	0,629	5,4
2	Long jump (cm)	200,4	9,00	-0,201	-0,688	4,5
3	Hard ball throwing (cm)	545,0	66,61	-0,069	-0,839	12,2
4	Sit down and touch (cm)	70,1	3,35	0,109	-0,588	4,8
<b>Taekwondo</b>						
1	Running 50 m. (s)	8.1	0.50	-0.038	-0.649	6,2
2	Long jump (cm)	192.4	17.74	-0.227	-0.505	9,2
3	Hard ball throwing (cm)	579.1	31.56	-0.859	1.826	5,4
4	Sit down and touch (cm)	69.4	4.91	0.286	1.094	7,1
<b>Karate</b>						
1	Running 50 m. (s)	7.8	0.47	0.061	-1.171	6.0
2	Long jump (cm)	197.7	12.21	-0.486	-0.061	6,2
3	Hard ball throwing (cm)	573.8	54.49	-0.392	-0.368	9,5
4	Sit down and touch (cm)	76.1	5.54	-0.156	-0.721	7,3
<b>Kung fu</b>						

Table 2

Comparison of the achievements of the pupils practising taekwondo and karate

№	indices tests	Taekwondo		Karate		d	temp.	Pt %
		X	S	X	S			
1	Running 50 m. (s)	7,9	0,43	8.1	0.50	0,2	1,139	74,1
2	Long jump (cm)	200,4	9,00	192.4	17.74	8.0	2,372	97,9
3	Hard ball throwing (cm)	545,0	66,61	579.1	31.56	34,9	2,307	97,6
4	Sit down and touch (cm)	70,1	3,35	69.4	4.91	0,7	0,661	48,9

*Table 3*  
Comparison of the achievements of the pupils practising taekwondo and kung fu

№	indeces tests	Taekwondo		Kung fu		d	temp.	Pt %
		Xc	S	X	S			
1	Running 50 m. (s)	7,9	0,43	7.8	0.47	0,1	0,934	64,6
2	Long jump (cm)	200,4	9,00	197.7	12.21	2,7	1,031	69,4
3	Hard ball throwing (cm)	545,0	66,61	573.8	54.49	28,8	-1,814	92,6
4	Sit down and touch (cm)	70,1	3,35	76.1	5.54	6,0	-5,532	99,9

*Table 4*  
Comparison of the achievements of the pupils practising karate and kung fu

№	indeces tests	Karate		Kung fu		d	temp.	Pt %
		X	S	X	S			
1	Running 50 m. (s)	8.1	0.50	7.8	0.47	0,3	1,732	91,0
2	Long jump (cm)	192.4	17.74	197.7	12.21	5,3	1,209	76,7
3	Hard ball throwing (cm)	579.1	31.56	573.8	54.49	5,3	0,410	31,6
4	Sit down and touch (cm)	69.4	4.91	76.1	5.54	6,7	4,469	99,9

high proof difference ( $Pt < 95,0\%$ ) of the indeces show that the analyzed martial arts influence well and stimulate both motor skills.

Unlike the above mentioned regularity, the pupils who practise taekwondo achieve statistically higher level of manifestation of the implosive power of their lower limbs ( $Pt = 97,9\%$ ) in comparison with the ones practising karate. A possible reason for this could be the prioritization of lower limbs exercises and hits in taekwondo. The high proof coefficient ( $Pt = 97,6\%$ ) is most likely due to the predominant training means in karate, aimed at performing hits, blocks,

and hand grips release.

During their martial arts training sessions the sports persons aspire to develop both their speed and muscle strength, as well as their agility. The manifestation of the latter provides, to a great extent, the technique for evading hits and striking, hand grips release, and blocking. Moreover, agility protects the sports person from receiving injuries due to the quick defense-attack reverse, which besides speed requires application of great muscle strength.

In the martial art kung fu, greater part of the fight-



ing skills are acquired and demonstrated through the performance of the so called shapes (katas). Here, the fighter must show his perfect technical performance in which base lie the speed, strength, coordination of movements, and most importantly – his agility ('softness').

On the base of the comparison between the achievements of the pupils practising taekwondo and those ones practising kung fu, a totally different trend was discovered. For example, the only index along which the taekwondo athletes surpass their opponents is the latent indication agility. With a high proof coefficient ( $P_t = 99,9\%$ ) they achieve a higher result of about 6 cm compared with the pupils practising kung fu.

The main reason for the manifested higher freedom of joint movements with kung fu athletes, in our opinion, is due to the systematical application of agility exercises, combined with the execution of the fighting techniques. The registered differences along the other indices are more likely to be accidental, and not a result of the specifics of the particular sport (Table 3).

Similar are the results obtained after the use of t-criteria of Student for the pupils practising karate and those ones engaged in kung fu. There are no significant differences between the indices from the control tests for speed and implosive power of the upper and lower limbs ( $P_t < 95,0\%$ , Table 4).

Again the average result from the test "sit down and touch" for the pupils practising kung fu is higher than the one of the karate group. The difference is supported by a high proof probability ( $P_t = 99,9\%$ ). In this case, the characteristic features of the kung fu training and competitive process is the possible reason for the higher development of the static flexibility of coxofemoral joints of the pupils actively engaged in practising kung fu.

## Discussion and Conclusion

As a result of our research we can draw the following more important conclusions:

The purposeful training process in taekwondo, karate and kung fu stimulates in a specific way the development of the motor skills speed, speed-power features of the upper and lower limbs, and agility of the sports persons. The pupils practising the three sports compared achieve almost the same results in the development of the motor skill speed. Hence, we cannot distinguish the stronger influence of any of the analyzed kinds of sport regarding the analyzed motor skill. The educational-training process is statistically proven to enhance the better development of the speed-power features of the lower limbs of the taekwondo athletes compared with those of the karate athletes, and the better development of the speed-power features of the upper limbs of the karate athletes compared to those of the taekwondo athletes. No such regularity was found in the comparative analysis of the same skills with the groups practising taekwondo and kung fu, and karate and kung fu respectively. The means of the martial art kung fu influence the manifestation of the skill agility of the pupils to the greatest extent.

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## ORIGINAL STUDY

## Analysis of physical anthropometric indicators and bmi index of participating sports players in nationwide 2012-2013 universiade

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### Abstract

From October 2012 to March 2013, in the framework of celebrating the 100th anniversary of Albania's Independence, the First Nationwide Universiade was held at the facilities of the Sports University of Tirana (SUT), and all students participating in the event were subjected to anthropometric assessment, the collection of which data contributed in conducting a first of its kind study, "Analysis of physical anthropometric indicators and BMI index of participating sports players in the Universiade".

On the whole the analysis of tested parameters revealed differences between genders, but also between sports, universities, and their geodemographic spread. Boys' mean age was 22.72 years, while girls' mean age was 20.04 years, mean age belonging to the students' age group, height index for boys was 186cm and 171.5 cm for girls. Mean weight index was 82.01kg for boys and 59.23 kg for girls; while BMI index being as follows: 78% of participating students fell under normal weight category (18-25 kg/m<sup>2</sup>); 18% fell under the overweight category (25-29 kg/m<sup>2</sup>) and only 4 % fell under the obese category (30-34 kg/m<sup>2</sup>). Based on the same index 96% of girls belonged to the normal weight category, and only 3.33% to the overweight category. While 55 % of boys entered normal weight category; 37% resulted overweight and 8% obese.

**Keywords;** *Body mass index, parameters, universiade, anthropometric indicators*

### Introduction

Our university after successfully carrying out in 2011 the study entitled "Student Youth's Barometer of Physical Activity", a European study project as well applied in our country, conducted another study at university level "Analysis of physical anthropometric indicators and BMI index of participating sports players in nationwide 2012-2013".

Since teams gathered in different cities for the event, such as in Tirana, Shkodra, Pristina, Korca, and for the finals in Elbasan and Tirana (SUT), this allowed all teams to be tested. Thus the study was aimed to not only a mere observation of the players' anthropo-

metric indicators, but also the technical, tactical and resultative level they displayed during the qualifiers and finals. The findings will contribute into raising the awareness of students, and universities' executive teams as to the place that physical culture and sport should occupy in the social lives of students and the opportunities they should be given, in order to be exercised systematically. Furthermore, the study provided detailed sociogender and geodemographic information to help find out which universities take sport and physical activity more seriously by viewing it as a vital product in achieving health and performance.

The participation of our student Luiza Gega from the

Sports University of Tirana in the World Universiade “Kazan 2013” and her winning the bronze medal in the 1500m race, the first medal in the history of our representation in universiades, speaks for a responsible preparation on the part of university staffs, but also for a potential of the Albanian university community to be represented deservingly in other international events.

## Method

The method used for the study was that of physical testing through observation, questionnaires and eventually analyzing collected data. The participants, boys and girls from universities in Albania, Kosovo, and Republic of Macedonia namely SUT, UET, UT, NYT, UMB, ARGENT, ULGSH, UFSNK, UAXHE, and UP, were tested in terms: height, weight, age, and sports results in volleyball, basketball, and football. Data were then elaborated, serving as a basis for the analysis and interpretation of indexes in % and the arithmetic mean for age, weight, and height indicators. By using BMI method, body mass index was obtained through the correlation  $l/p$  ( $BMI\ Kg/m^2$ ) for every sport, team, inter university and gender differences. **tab.1.**

## Results

### Participation

The event included 7 sports, with a total of 80 teams competing in individual and team sports for both boys and girls. Most of the sports are also part of international universiades. The participation of the University of Pristina for the first time in the Universiade gave a significant impetus to the competitiveness of the event, especially in the games division, where boys played excellent matches, thus winning the first place. Even in volleyball for girls, the tall team from the University of Pristina competed meritoriously in the final match against the SUT's team by placing second. Commendable performances were also demonstrated by the University of Shkodra teams in min-

iature soccer for boys and girls by placing first. The girls' teams from the University of Tirana deserved the first place in basketball and table tennis. **tab.2.**

Even though there were differences evidenced among the two sexes, it should be stressed out the fact that in the games division, namely volleyball, basketball and miniature soccer, not only did the girls' teams display a wider participation, but also a better sports performance. Whilst in the individual sports it is worth mentioning the fact that the number of participating teams was limited, thus still remaining a problem, which needs to be tackled in the future. **Tab.1 a,b.**

Tab .1 a b. Number of teams for each sport Boys - Girls

No.	SPORTS	BOYS	GIRLS	Total
1.	ATHLETICS	6	5	11
2.	VOLLEYBALL	9	9	18
3.	BASKETBALL	8	5	13
4.	TENNIS	6	3	9
5.	TABLE TENNIS	6	5	11
6.	CHESS	7	5	12
7.	MINIATURE SOCCER	4	3	7
8.	Total	46	35	81

Tab.2. General Classification

No.	UNIVERSITIES	BOYS	GIRLS	GENERAL
1.	SUT	1	1	I
2.	UT	2	2	II
3.	UP	3	3	III

### • General physical anthropometric indicators

The arithmetic means in all physical anthropometric indicators of all participating students in the Universiade are as follows: age for boys 22.72 years, while for girls 20.04 years, height for boys 186.03cm and 171.35 cm for girls. Weight being 82.01 kg for boys and 59.23kg for girls; while body mass index-BMI being 23.76 kg/m<sup>2</sup> for boys and 20.52 kg/m<sup>2</sup> for girls. **Tab.3 a,b.**

Tab.3.a. Summary of indicators according to sports. Boys

No.	Sports	Age (years)	Height (cm)	Weight (kg)	BMI (kg/m2)
1.	VOLLEYBALL	22.07	187.57	79.36	22
2.	BASKETBALL	21.09	192.52	87.34	23
3.	MINIATURE SOCCER	23.36	177.92	79.35	25
4	Mean Total	22.72	186.03	82.01	23.76

Tab.3.b Summary of indicators according to sports. Girls

No.	Sports	Age (years)	Height (cm)	Weight (kg)	BMI (kg/m2)
1.	VOLLEYBALL	20.49	173	60.32	21.02
2.	BASKETBALL	20.03	174	61.96	20.38
3.	MINIATURE SOCCER	19.61	166.37	55.42	20
4.	Mean Total	20.04	171.35	59.23	20.46

- **Age**

When analyzing age, it is observed that in general participants were aged between 19 and 22 years old, thus belonging to the students' age group. However, the participation of part-time students has increased the level of age indicators in all sports, mainly observed among boys. In volleyball the mean age for

girls was 20.41 years, the youngest being the team from ULGSH having an average age of 18.66 years, while the oldest being the team from UMB with an average of 21.75 years. Mean age for boys was 22.72 years, UT's team being the youngest with a mean age of 21 years, and the oldest being Pristina team with a mean of 23.63 years, thus boys being older as compared to girls. **Tab 4.**

Tab. 4. Summary of mean age according to sport. Boys &amp; Girls

No.	Sports	Boys	Girls
1.	Volleyball	22.07	20.49
2.	Basketball	21.9	20.03
3.	Miniature Soccer	23.36	19.61
4.	Mean	22.41	20.04

When it comes to the age index, the international regulation should be observed more rigorously as several teams had an age index higher than students' age, namely 23 years old, such as was the case with SUT having a mean age of UST, 24.17 years, UP 23.16 years in basketball and UT me 24.65 years in miniature soccer. **Tab 4 a, b**

*Tab. 4 a. Summary of mean age according to sport. Girls*

No.	Sports	SUT	UT	ULGSH	NYT	UFNK	UMB	UP	Total
1.	Volleyball	21.16	20.12	18.66	19.62	20	21.75	21.6	20.49
2.	Basketball	20.9	19	19.25	-	-	-	21	20.03
3.	Miniature Soccer	20	18.42	20.42	-	-	-	-	19.61
4.	Mean	20.68	19.18	19.44	19.62	20	21.75	21.3	<b>20.04</b>

*Tab. 4.b. Summary of mean age according to sport. Boys*

No.	Sports	SUT	UT	ULGSH	UASH	UP	UAT	Total
1.	Volleyball	21.87	21	21.8	-	23.63	-	22.07
2.	Basketball	23.66	21.7	-	-	22.88	19.36	21.9
3.	Miniature Soccer	20.8	22.08	-	27.22	-	-	23.36
4.	Mean	22.11	21.59	21.28	27.22	22.75	19.36	<b>22.41</b>

#### • Weight

Weight index oscillated among genders and universities. Mean weight for **girls** was 60.32 kg and the

lowest index observed being that of miniature soccer with 55.42 kg. The mean weight of SUT was 49.42kg; the highest index observed being that of the volleyball team with 63.58 kg. Among **boys** this index was more constant, the total mean being 82.01kg; the lowest index observed being that of miniature soccer and volleyball, 79.35 and 79.36kg respectively, while as team observed in ULGSH's team with 72.2 kg. The

highest weight index was observed in the sport of basketball with a mean of 87.34 kg. In the inter universities analysis it resulted that the lowest weight index among girls is observed at the SUT's girls' team

of miniature soccer with a mean of 55.42 kg, the highest at SUT and UP's volleyball teams with 68.58 kg and 67.2 kg respectively. **tab.5 a,b**

*Tab. 5.a.b Summary of mean weight according to sport & university. Girls & Boys*

No.	Sports	Girls	Boys
1.	Volleyball	63.58	79.36
2.	Basketball	61.96	87.34
3.	Miniature Soccer	55.42	79.35
4.	Mean	60.32	82.01

*Tab.5.a Summary of mean weight according to sport & university.*

*Girls*

No.	Sports	SUT	UT	UL GSH	NYT	UFNK	UMB	UP	Total
1.	Volleyball	68.58	59	62.66	64.5	58.16	65	67.2	63.58
2.	Basketball	59.45	61.15	62	-	-	-	65.25	61.96
3.	Miniature Soccer	49.42	57.57	59.28	-	-	-	-	55.42
4.	Mean	59.15	59.24	61.31	64.5	58.16	65.5	66.22	60.32

*Tab.5.b Summary of mean weight according to sport & university.*

*Boys*

No.	Sports	SUT	UT	UL GSH	UASH	UP	UAT	Total
1.	Volleyball	82.62	79.18	72.2	-	83.45	-	79.36
2.	Basketball	94.3	83.8	-	-	90.66	80.63	87.34
3.	Miniature Soccer	74.4	90.05	-	73.60	-	-	79.35
4.	Mean	83.77	84.34	72.2	73.60	87.05	80.63	82.01



### • Stature (Height)

The mean level of this anthropometrical indicator was 171.35 cm; the highest being observed in basketball with 174.46 cm, the lowest in miniature soccer with 166.37 cm. Different indexes result out of the analysis among sports for boys, thus basketball having a mean of 192.52 cm, the highest among sports; while miniature soccer having the lowest mean of 177.92 cm in height and 79.5 kg in weight. **tab.6 a, b**

In the inter universities analysis for boys the highest height mean being 195.25 cm, is observed in the basketball teams of UP and SUT, while the lowest being 175.11 cm observed in the miniature soccer team of ULGSH.

Among girls the lowest indexes are observed in the teams of UT and NYT being 169.25 cm and 169.28 cm respectively; while the highest observed being 179.33 cm in the SUT's volleyball team. **Tab.6 a, b**

*Tab.6.a.b Summary of height indicators according to sport. Boys & Girls*

No.	Sports	Girls	Boys
1.	<b>VOLLEYBALL</b>	173	187.57
2.	<b>BASKETBALL</b>	174	192.52
3.	<b>MINIATURE SOCCER</b>	166.37	177.92
4	<b>Mean Total</b>	171.35	<b>186.03</b>

*Tab. 6.a. Summary of mean height according to sport & university. Boys*

No	Sports	SUT	UT	ULGSH	UASH	UP	UAT	Total
<b>1.</b>	<b>Volleyball</b>	190.87	187.09	185.6	-	186.72	-	187.57
<b>2.</b>	<b>Basketball</b>	195.25	188.4	-	-	195.25	191.18	192.52
<b>3.</b>	<b>Miniature Soccer</b>	178.5	183.16	-	175.11	-	-	177.92
<b>4.</b>	<b>Mean</b>	188.20	186.21	185.6	175.11	190.98	191.18	<b>186.3</b>

*Tab. 6.b Summary of mean height according to sport & university.*

### *Girls*

No.	Sports	SUT	UT	ULGSH	NYT	UF NK	UMB	UP	Total
<b>1.</b>	<b>Volleyball</b>	<b>179.33</b>	169.25	172.88	169.25	171.5	174.62	175.6	173.2
<b>2.</b>	<b>Basketball</b>	172.54	172.76	175.12	-	-	-	177.5	174.48
<b>3.</b>	<b>Miniature Soccer</b>	166.14	167.71	165.28	-	-	-	-	166.37
<b>4.</b>	<b>Mean</b>	172.67	169.90	171.09	169.25	171.5	174.62	176.55	<b>171.35</b>

Of great interest in the analysis of height indicators, is as well the analysis in % of the biggest height for **every height ranges** as compared with the total number. Thus, the highest %, namely 24% is observed in the height range of 186-190 cm, followed by 18.4% in the height range of 191-195 cm. Volleyball and basketball players stand out from the others belonging to the height range of 186-190 cm. However, volleyball has a higher frequency of players belonging to the upper height range of 191-195 cm as compared to basketball; while miniature soccer having the lowest indicators as compared to volleyball and basketball, but still a mean height of 181-185 cm in this sport is satisfactory.

50 % of girls sports players fall under the height range of 166-170 cm and 176-180 cm. Volleyball players have the best height indicators among sports,

most of them belonging to the height range of 171-175 and 176-180 cm; while basketball having better records in height ranges of 166-170 and 176-180 cm. To conclude, volleyball players were taller than their basketball counterparts. **Tab.6/1.2**

#### • BMI – Weight/Height ratio

From the inter gender analysis it resulted that girls have a better BMI index with 20.51 kg/m<sup>2</sup> as compared to boys having an index of 23.76 kg/m<sup>2</sup>; while from the study of boys' teams it results that volleyball has the best ratio with 22 kg/m<sup>2</sup> and miniature soccer the worst with 25 kg/m<sup>2</sup>. Among girls the best index is observed in miniature soccer with a ratio of 20 kg/m<sup>2</sup> and the worst in volleyball, the ratio being 21.02 kg/m<sup>2</sup>. **Tab. 7 a, b, c**

Tab 7.a Summary of BMI index –Boys & Girls

No .	Sports	Girls	Boys
1.	Volleyball	21.02	22
2.	Basketball	20.38	23
3.	Miniature Soccer	20	25
4.	Mean	20.51	23.76

#### a. BMI levels as a %

As it can be observed from the table, 55 % of boys belong to the first weight range, being that of normal weight with a ratio of 18-25 kg/m<sup>2</sup>; about 37 % belong to the second weight range, the overweight

category with a ratio of 25-29 kg/m<sup>2</sup> and only 8% belong to the obese range having a ratio of 30-34 kg/m<sup>2</sup>. However, the obese index does not necessarily speak of obesity among some players, but it is due to the long limbs and heavy weight among some basketball players. **tab. 8b.**(BMI is a population test)

Tab. 7.b. Summary of weight ranges (BMI) according to sport – Boys

No.	Weight Ranges	Volleyball (%)	Basketball (%)	Miniature Soccer (%)	Total (%)
1.	Normal 18-24.9 kg/m <sup>2</sup>	24.19	19.35	11.29	54.84
2.	Overweight <25-29.9 kg/m <sup>2</sup>	7.25	13.70	16.12	37.09
3.	Obese <30-34 kg/m <sup>2</sup>	-	3.22	4.83	8.07
4.	Total Mean	31.45 %	36.29%	32.25%	100%

With girls volleyball is placed first, about 97% fall under the normal weight range with a ratio of 18-25 kg/m<sup>2</sup>; while only 4 % belong to the overweight range with a ratio of 25-29 kg/m<sup>2</sup>; while no player was recorded in the third weight range.

Tab. 7.c. Summary of weight ranges (BMI) according to sport – Girls

No.	Weight Ranges	Volleyball (%)	Basketball(%)	Miniature Soccer (%)	Total (%)
1	Normal 18-24.9 kg/m <sup>2</sup>	48.33	30.83	17.5	<b>96.67</b>
2.	Overweight<25-29.9kgm <sup>2</sup>	2.5			<b>3.33</b>
3.	Obese<30-34 kg/m <sup>2</sup>	-	-	-	-
4.	Total Mean	<b>50.80%</b>	<b>31.66%</b>	<b>17.5%</b>	<b>100%</b>

BMI index is almost the same among girls coming from different universities, while with boys the index shows variations in the different categories. Thus girls from SUT seem to have a better index of 19.74 kg/m<sup>2</sup> as compared to boys' teams from UP having an index of 23.40 kg/m<sup>2</sup>. Tab.8.a.b

Tab. 8.a Summary of weight-height ratio (BMI) according to sport & university –Boys

No.		Sports	UT	UL GSH	ARGE NT	UP	UAT	Kg/ m <sup>2</sup>
1.	Volleyball	22.65	22.62	20.98	-	23.54	-	22
2.	Basketball	24.17	23.51	-	-	23.36	22	23
3.	Miniature Soccer	23.41	26.9	-	24	-	-	25
4.	Mean	23.40	24.34	20.98	24	23.40	22	23.76

Tab. 8.b.Summary of weight-height ratio (BMI) according to sport & university – Girls

No.	Sports	SUT	UT	UL GSH	NYT	UF NK	UMB	UP	Kg/m <sup>2</sup>
1.	<b>Volleyball</b>	21.43	20.58	21.02	22.01	19.80	20.92	21.89	21.02
2.	<b>Baketball</b>	20	20.52	20.26	-	-	-	20.76	20.38
3.	<b>Miniature Soccer</b>	17.81	20.50	21.69	-	-	-	-	20
4.	<b>Mean</b>	19.74	20.53	20.99	22.01	19.80	20.92	21.32	<b>20.51</b>

## Conclusions

- This first of its kind study allowed for a collection of data concerning some physical anthropometrical parameters of participating students, thus giving way to further research in the years to come.
- On the whole the parameters tested and analyzed speak for differences among genders (which is natural), but also among sports, universities and their geodemographic spread. As a consequence, different technical, tactical and resultative results were obtained.
- Competitors' **age** in the Universiade, for both boys and girls corresponds to active students' age; with **girls** the mean index was **20.04** years, while with **boys** the mean was **22.72** years, thus girls being younger than boys. The lowest mean age, **19.61** years was registered among girls' teams of **miniature soccer**; while among boys the youngest were **basketball** players with a mean age of **21.9** years.
- **Mean height** of competitors in 3 games sports is as follows: **Girls** having a mean of **171.35m**, while **Boys** **186.03 m**; the highest height indicator was registered in **basketball** for both boys and girls, being **192.52 m** and **174.48 m** respectively; the lowest indicator for both boys and girls was observed in miniature soccer being **177.92 m** and **166.37 m** respectively.
- **BMI index on the whole**: 78% of participating students in the Universiade belong to the first weight range, that of normal weight (18-25 kg/m<sup>2</sup>); 18% fall under the overweight range (25-29 kg/m<sup>2</sup>), while only 4 % belong to the obese category (30-34 kg/m<sup>2</sup>).

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# **JOURNAL OF PHYSICAL ACTIVITY & SPORTS**

## **Volume 2 Issue 2 December 2015**

### **CONTENTS**

<b>The influence of some morphological variables and motor skills in the success of the junior basketball league</b>	
ARTAN R. KRYEZIU, ISA ASLLANI.....	3-9
<b>Leisure time and TV watching in 12 to 16 years old children in Tirana</b>	
BLERINA MEMA , KEIDA USHTELENCA.....	10-13
<b>Herpes Zoster: Clinical Aspects, Complications and Role of Physical Activity in Adults in Albania</b>	
ESMERALDA META, DHIMITRAQ STRATOBERDHA, PELLUMB PIPERO.....	14-19
<b>Stigma and discrimination against obesity</b>	
JONIDA HAXHIU.....	20-23
<b>Football as a tool to improve motor movement to the youth in the age before pubertal.</b>	
MIKEL CENAJ, IVAN MARDOV.....	24-27
<b>Impact of inclusiveness policies in the budget of the university (Case study of Sport University of Tirana)</b>	
MIRLINDA. GALUSHI, EJVIS. (SHEHI) GISHTI.....	28-35
<b>Analysis of some motor skills of pupils practising different kinds of martial arts</b>	
NIKOLAY, BALEVSKI, TODOR MARINOV, STANISLAV, MAVRUDIEV.....	36-40
<b>Analysis of physical anthropometric indicators and bmi index of participating sports players in nationwide 2012-2013 universiade</b>	
LUMTURI MARKOLAJ, ENTELA KUSHTA, VEJSEL RIZVANOLLI, FATOS GJATA.....	41-49





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