Journal Plus Education, ISSN: 1842-077X, E-ISSN (online) 2068-1151 Vol XII A - SPECIAL ISSUE (2015), pp. 68 - 78

The reasoning of practicing leisure sports activities in the improvement of the physical and health condition, in adults

Georgian BĂDICU*
[1,]University Transilvania from Braşov,
Faculty Of Physical Education And Sports Mountains, Romania
Lorand BALINT
[2,]University Transilvania from Braşov,
Faculty Of Physical Education And Sports Mountains, Romania
E-MAIL: badicu_georgian@yahoo.com; lbalint@unitbv.ro

ABSTRACT

Physical health refers to the body condition and its responses to injuries and diseases. Health can be maintained, respectively improved through practicing leisure sports activities, graded on an intermediate and long-term basis. This stimulus, represented by the physical exercise, if applied constantly, contributes significantly to the improvement of the physical fitness. The latter is a component of the biological side of a human being, which is acquired in time and contributes to the physical wellbeing of the individual.

Along with other measures, often more convenient, that man nowadays takes in order to be active in the socio-professional environment, we believe that, at present, a broader action of awareness is needed, in relation to the conditioning of the level of physical health, to the one expressed through the indicators of physical capacity.

The present research, applied on a population pool of adult age , highlights on the one hand , the dynamics of some physical condition parameters , depending on the leisure sports activity volume, and on the other hand , the significant correlation – from a statistical mathematical point of view – between physical health and physical fitness.

From this study we concluded that, a good physical fitness, acquired through a high level of participation to various sports activities, has a positive effect on the physical health, that we perceive in relation to oneself.

KEYWORDS: *adults, leisure sports activities, physical fitness, physical health*

1. INTRODUCTION

Health is a fundamental resource for individuals, communities and societies overall. For the individual, enjoying a good health is vitally important. At the same time, a good level of health of the population is absolutely necessary for the economic growth and the development of society. (Alber, J. şi Kohler, U., 2004, p. 34).

A good health is an important component of the human capital, allowing people to carry out their work, to fulfill their purposes, to have a full life and to be active members of society. (Mărginean, I. and others, 2006, p. 56).

Maintaining a good health of one's body, is a quite concerning matter nowadays, that should be acknowledged and handled by each society, in order to cope with the daily demands.

* Corresponding author. Tel.:
E-mail address: badicu_georgian@yahoo.com

Health can be improved by practicing leisure sports activites, where the main stimulus – physical exercise – can contribute significantly to the improvement of the individuals' physical fitness, leading to the same extent to a good health of society, as, through its action, it brings together different social categories. (Dumitru, Gh., 1997, p. 3).[***]

Sabău, E., (2002, p. 39), believes physical condition is a component of lifestyle, appreciating the value of physical activies at all ages and under any material and social circumstances.

From a logical and methodological point of view, the notion of „condition" comprises all kinds of activities meant to acquire the „fitness". Considering the fact that some prefer only one kind of sports activity, swimming, for example, the latter may solve one's need for recreation, but in order to ensure the effects of a good condition, it needs to be performed according to methodological principles recommended by experts. (ibidem, p. 353).

2. MATERIAL AND METHODS

In an experiment that we conducted between April – November 2013, on a pool of 65 adults (who practice leisure sports activities), aged between 25 and 49, citizens of Brasov county, we found a significant correlation between physical health and the level of physical fitness. The higher the volume of physical activity is, the higher the level of physical fitness.

In this research, we used (initial and final) a type of questionnaire, focused on the main component of the quality of life – health, a strong emphasis being placed on the component "physical health" (timeframe spent on practicing leisure sports activities). This questionnaire comprised 20 questions, with values of results interpretation between 1 and 60 points.

For the evaluation of the physical fitness we used a standard test (http://www.topendsports.com/testing/hometest.htm), which consisted in three physical tests that the participants underwent individually at home, each month; the results of the periodic tests were emailed to the participants. We have also watched over the course of 8 months, the amount of participation of adults in various leisure sports activities (organized locally by NGOs, Commercial Companies, Brasov city hall) as well as in the set of programs that we proposed, called „Brasov people in motion").

After performing all the sports activities and collecting the data reported monthly by participants, in the end, we used once again, the questionnaire of physical health, as a result of the evaluation of participants' physical condition.

In the wake of the collected data, we calculated the index of physical health in adult participants and we established the effects of leisure sports activities on their health, via: correlations between the amount of physical activites and the level of physical health; correlations between the physical fitness at the end of our research and the acquired level of physical health; the initial physical fitness and the final physical fitness, for each age group, as follows: 25 – 29 years old, 30 – 34 years old, 35 – 39 years old, 40 – 44 years old and 45 – 49 years old.

3. RESULTS AND DISCUSSIONS

In terms of age groups, the highest number of leisure sports activities were perfomed by young participants, aged between 25 and 29, with an average of 72 activites, followed, one after another, by those aged between 30 and 34, with an average of 50,10 activities, participants

[***,2] Bădicu Georgian, Balint Lorand, University Transilvania from Braşov
E-mail: badicu_georgian@yahoo.com; lbalint@unitbv.ro

between 35 and 39 years old, with an average of 43,23 activities, than those aged between 45 and 49, with an average of 32,78 activities and those between 40 and 44 years old, with an average of activity of 32,15. (Tab. 1, Fig. 1).

Table 1. *Total of leisure sports activities for the pool of adults who practice sports activities depending on the age group*

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
25-29 years old	4	72,00	10,100	5,050	55,93	88,07	61	82
30-34 years old	10	50,10	4,886	1,545	46,60	53,60	43	60
35-39 years old	13	43,23	4,166	1,156	40,71	45,75	35	51
40-44 years old	20	32,15	4,998	1,118	29,81	34,49	23	39
45-49 years old	18	32,78	5,082	1,198	30,25	35,31	23	41
Total	65	39,75	11,899	1,476	36,81	42,70	23	82

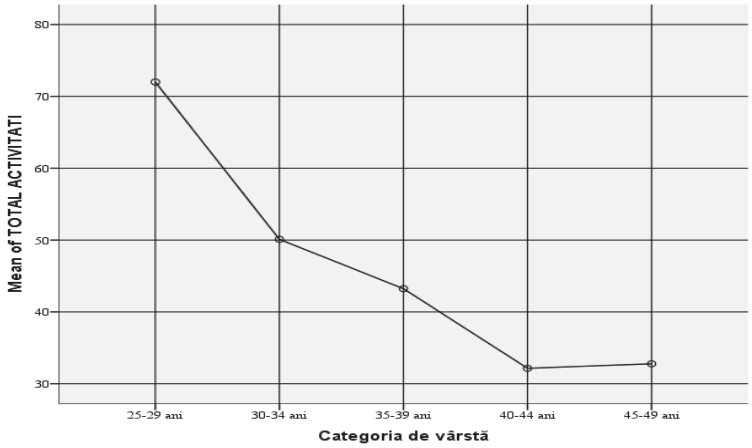

Fig. 1. *Distribution of the total amount of leisure sports activities for adults who practice sports activities depending on the age group*

Over the course of the 8 months, the highest number of activities/ from all 65 participants took place in June (363 activities) and September (345 activities), whereas the lowest number took place in October (292 activities) and August (306 activities). (Fig. 2).

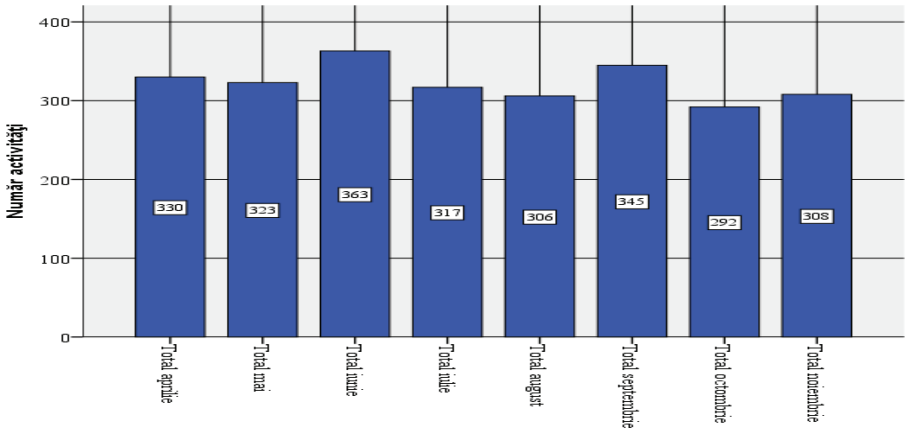

***Fig. 2**. Distribution of the total amount of sports activities per month, for adults (target pool) who practice leisure sports*

3.1. Initial and final physical health depending on participants and age

At the beginning of our research, most of the people (95,4%) who practice leisure sports activities (within our pool of 65 participants), have a stated average level of physical health; 3,1% have a low level and only 1,5%, have a good physical health. (Tab. 2, Fig. 3).

***Table 2**. Distribution of the initial level of physical health index for the pool of adults who practice leisure sports activities*[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Low	2	3,1	3,1	3,1
	Average	62	95,4	95,4	98,5
	Good	1	1,5	1,5	100,0
	Total	65	100,0	100,0	

a. Practicing leisure sports activities = yes

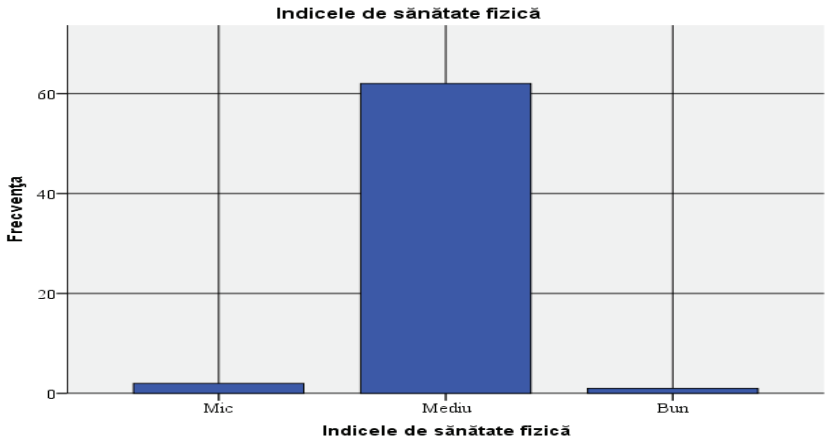

***Fig. 3**. Distribution of the initial level of physical health index for the adults who practice leisure sports activities*

In terms of age groups, people who practice leisure sports activities, aged between 25 and 29, 30 – 34 and 35 – 39, have, on a very high scale (100%), an average index of physical health. Amongst the other age categories, the percentage of persons with an average index of physical health is also high, but a decrease has been noted in this percentage as the persons are ageing. (Tab. 3, Fig. 4).

Table 3 *Distribution of the initial level of physical health index for the pool of adults who practice leisure sports activities depending on the age group*[a]

			Index of physical health			Total
			Low	Average	Good	
Age group	25-29 years old	Count	0	4	0	4
		% within Age group	0,0%	100,0%	0,0%	100,0%
	30-34 years old	Count	0	10	0	10
		% within Age group	0,0%	100,0%	0,0%	100,0%
	35-39 years old	Count	0	13	0	13
		% within Age group	0,0%	100,0%	0,0%	100,0%
	40-44 years old	Count	0	19	1	20
		% within Age group	0,0%	95,0%	5,0%	100,0%
	45-49 years old	Count	2	16	0	18
		% within Age group	11,1%	88,9%	0,0%	100,0%
Total		Count	2	62	1	65
		% within Age group	3,1%	95,4%	1,5%	100,0%

a. Practicing leisure sports activities = yes

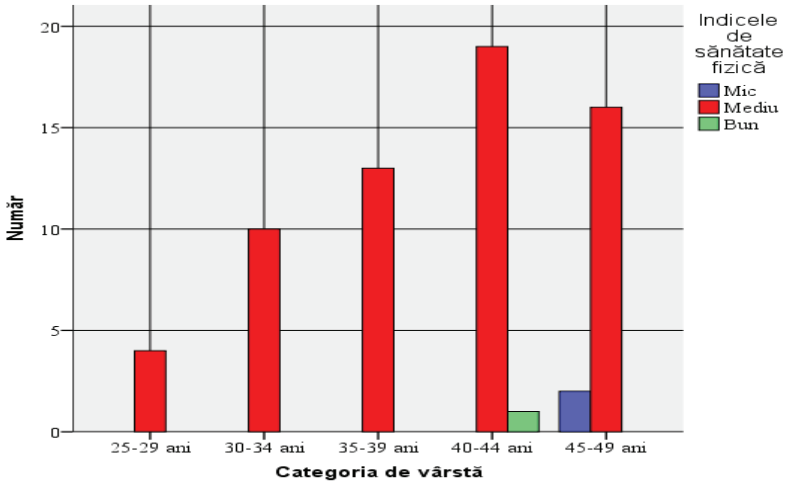

Fig. 4*. Distribution of the initial level of physical health index for the adults who practice leisure sports activities depending on the age group*

In regard to final physical health, 64,6% is a good index of health, whereas 35,4% of people have an average index of physical health. (Tab. 4, Fig. 5).

Tabel 4*. Distribution of the final level of physical health index for the pool of adults who practice leisure sports activities*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Average	23	35,4	35,4	35,4
	Good	42	64,6	64,6	100,0
	Total	65	100,0	100,0	

a. Practicing leisure sports activities = yes

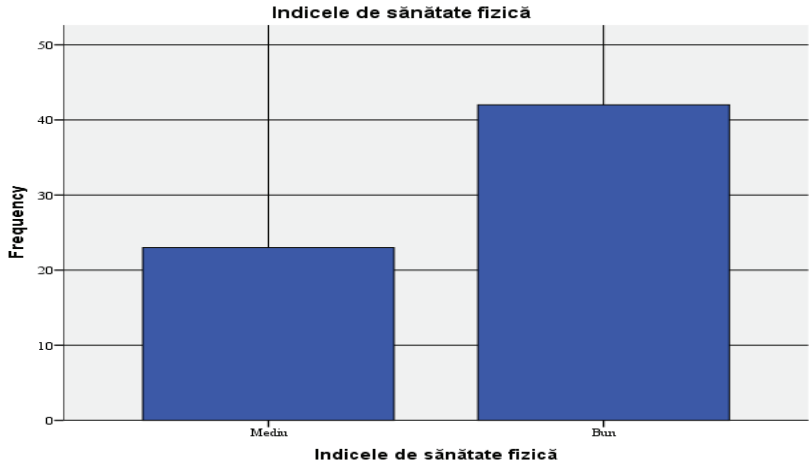

Fig. 5. *Distribution of the final level of physical health index for the adults who practice leisure sports activities*

Depending on the age category, adults who practice leisure sports activities, aged between 25 and 29, 30 to 34 and 35 to 39, acquired, on a very high scale (100%), a good final index of physical health. Amongst the other age categories, as adults are ageing, we can observe a lower increase in the percentage of adults with a good index of physical health. (Tab. 5, Fig. 6).

Tabel 5. *Distribution of the final level of physical health index for the pool of adults who practice leisure sports activities depending on the age group*[a]

			Index of physical health		Total
			Average	Good	
Age group	25-29 years old	Count	0	4	4
		% within Age group	0,0%	100,0%	100,0%
	30-34 years old	Count	0	10	10
		% within Age group	0,0%	100,0%	100,0%
	35-39 years old	Count	0	13	13
		% within Age group	0,0%	100,0%	100,0%
	40-44 years old	Count	11	9	20
		% within Age group	55,0%	45,0%	100,0%
	45-49 years old	Count	12	6	18
		% within Age group	66,7%	33,3%	100,0%

Total	Count	23	42	65
	% within Age group	35,4%	64,6%	100,0%

a. Practicing leisure sports activities = yes

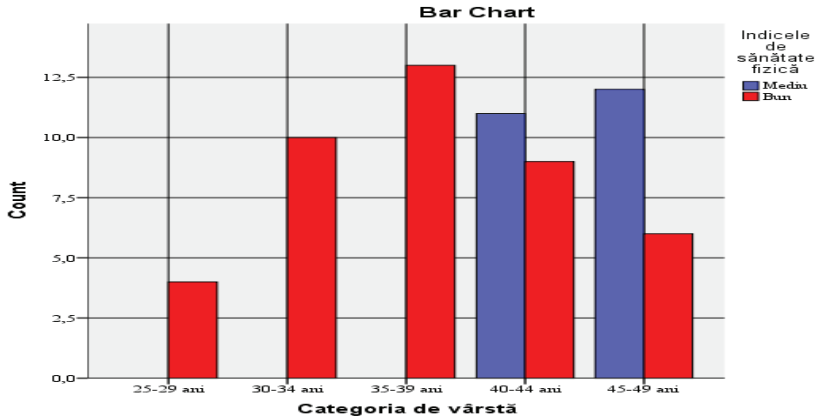

***Fig. 6**. Distribution of the final level of physical health index for the adults who practice leisure sports activities depending on the age group*

3.2. Evolution of physical fitness, initial - final

By analyzing the evolution of the physical fitness, we can see a general trend /target pool, of permanent increase of physical fitness, from month to month, reaching its highest level in November. (Tab. 6).

***Table 6**. Evolution of the physical fitness per months in adult participants who practice leisure sports activities*

	N		Mean	Median	Mode	Std. Deviation	Skewness	Kurtosis	Minimum	Maximum
	Valid	Missing								
Below average level of physical fitness April	65	0	6,1329	6,0000	6,00	,69882	,077	-,550	5,00	7,67
Low level of physical fitness May	65	0	5,9842	6,3300	6,33	1,65788	-2,917	8,613	,00	7,67
Below average level of physical fitness June	65	0	6,5029	6,6700	6,67	,55312	,095	-,496	5,33	7,67
Below average of physical fitness July	65	0	6,63	6,67	7	,487	,193	-,696	6	8

Below average of physical fitness	65	0	6,8051	7,0000	7,00	,39969	-,135	-,191	6,00	7,67
August Average level of physical fitness	65	0	7,0766	7,0000	7,00	,34629	,295	,336	6,33	8,00
September Average level of physical fitness	65	0	7,3332	7,3300	7,33	,37287	,151	-,702	6,67	8,00
October Above average level of physical fitness	65	0	8,0362	8,0000	8,00	,56596	,200	-,684	7,00	9,33
November										

The general trend of positive evolution of the physical fitness can be noticed in all age groups within our pool of participants. (Tab. 7).

***Table** 7. Evolution of the physical fitness per months in adult participants who practice leisure sports activities, depending on the age group*

Age group		Level of physical fitness April	Level of physical fitness May	Level of physical fitness June	Level of physical fitness July	Level of physical fitness August	Level of physical fitness September	Level of physical fitness October	Level of physical fitness November
25-29 years old	Mean	6,2500	3,4175	6,4175	6,58	6,7475	7,0000	7,1650	7,9175
	N	4	4	4	4	4	4	4	4
	Std. Deviation	,41857	3,94849	,73699	,568	,50056	,26944	,19053	,16500
30-34 years old	Mean	6,4660	6,0000	6,6670	6,77	6,8680	7,1330	7,5000	8,4010
	N	10	10	10	10	10	10	10	10
	Std. Deviation	,52513	2,17193	,54502	,474	,42182	,35743	,28503	,41019
35-39 years old	Mean	6,3846	6,5646	6,7700	6,85	6,9746	7,2554	7,7446	8,7438
	N	13	13	13	13	13	13	13	13
	Std. Deviation	,54052	,48018	,37108	,400	,31835	,33706	,30897	,30918
40-44 years old	Mean	6,2995	6,2155	6,6330	6,75	6,9000	7,1495	7,2995	7,9170
	N	20	20	20	20	20	20	20	20
	Std. Deviation	,77887	1,58657	,60135	,494	,36032	,29457	,26375	,33943
45-49 years old	Mean	5,5550	5,8694	6,0933	6,28	6,5550	6,8522	7,0183	7,4811
	N	18	18	18	18	18	18	18	18
	Std. Deviation	,52357	,48789	,35728	,367	,38007	,32643	,26478	,32903
Total	Mean	6,1329	5,9842	6,5029	6,63	6,8051	7,0766	7,3332	8,0362
	N	65	65	65	65	65	65	65	65
	Std. Deviation	,69882	1,65788	,55312	,487	,39969	,34629	,37287	,56596

3.3. Correlations and t test for dependent pools between the results obtained by participants, in terms of physical health and level of physical fitness

- *The link between the amount of activities and the level of physical health*

In order to determine the correlation between the amount of performed sports activities and the level of physical health, we used an analysis of bivariate correlation, based on the Spearman correlation coefficient. For this, we built on the two hypotheses of the test:

H0: There is no significant link between variables

H1: There is a significant link between variables

As p<0,001, H1 hypothesis is confirmed.

We can state that there is an indirect link, of high intensity, between the amount of performed activities and the level of physical health, rho (0,777). (Tab. 8).

Table 8. *Results of the correlation analysis, based on the Spearman coefficient, between the amount of sports activities and the level of physical health*

			Total Activities	Index of physical health
Spearman's rho	Total activities	Correlation Coefficient	1,000	,777**
		Materiality threshold p	.	,000
		N	65	65
	Index of physical health	Correlation coefficient	,777**	1,000
		Materiality threshold p	,000	.
		N	65	65

**. Correlation is material at a threshold of 0,01

- *Link between the final physical fitness and the level of physical health*

The values of the materiality threshold that we obtained in the bivariate analysis between physical fitness on the one hand and the level of physical health on the other hand, shows us a significant correlation from a statistical point of view, between the two elements. The intensity of the correlation is high, rho (0,779). (Tab. 9).

Table 9. *Results of the correlation analysis, based on the Spearman coefficient, between the final physical fitness and the level of the physical health index*

			Total Activities	Index of physical health
Spearman's rho	Average level/above average of physical fitness November	Correlation coefficient	1,000	,779**
		Materiality threshold p	.	,000
		N	65	65
	Index of physical health	Correlation coefficient	,779**	1,000
		Materiality threshold p	,000	.
		N	65	65

**. Correlation is material at a threshold of 0,01

In order to compare the level of the initial and the final physical fitness, after 8 months of leisure sports activities, we applied the t test for dependent samples.

The average level of initial physical fitness was 6.13, whereas the average level of final physical fitness was 8,03. The standard deviation for the initial results is 0.69, whereas the deviation for the final results is 0,56.(Tab. 10).

We took into account the following hypotheses:

H0: The level of initial physical fitness does not differ in a significant manner from the level of final physical fitness.

H1: The level of initial physical fitness differs in a significant manner from the level of final physical fitness.

We can note that the average levels of physical fitness, both initial and final, differs one from another significantly: t=-24,741; df=64; p<0,001.

The confidence interval of the difference (*95% Confidence Interval of the Difference)* varies between -2,05 (lower error) and -1,74 (upper limit). (Tab. 11).

The results obtained show the positive effects of sports activities, activities that lead to a significant increase in the level of physical fitness.

Table 10. *The results of the t test analysis for dependent samples, between the level of the initial physical fitness and of the final physical fitness*

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Level of physical fitness April	6,1329	65	,69882	,08668
	Level of physical fitness November	8,0362	65	,56596	,07020

Table 11. *The results of the t test analysis for dependent samples, between the level of the initial physical fitness and of the final physical fitness*

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Level of physical fitness April - Level of physical fitness November	-1,90323	,62019	,07693	-2,05691	-1,74956	-24,741	64	,000

4. CONCLUSIONS

The obtained results led us to the following conclusions:

- Over the course of the 8 months, the participants practiced, on average, 39,75 sports activities, the smallest number of activities being 23 and the highest number - 82.
- In terms of age groups, the highest number of leisure sports activities were performed by the young participants, aged between 25 and 29.
- The study shows a direct relation, of high intensity, between the amount of performed sports activities and the level of physical health. Also, a high level of physical fitness is related to a high level of physical health.

5. ACKNOLWDGEMENTS

This paper is supported by the Sectoral Operational Programme Human Resources Development (SOP HRD), ID 134378 financed from the European Social Fund and by the Romanian Government.

6. REFERENCES

[1] Alber, J., Köhler, U., (2004), *Health and care in an enlarged Europe, Luxembourg, Office for Official Publications of the European Commission,* [Electronic version]. Disponibil online la http://www.eurofound.europa.eu/pubdocs/2003/107/en/1/ef03107en.pdf, p.34.

[2] Dumitru, Gh., (1997), *Sănătate prin sport pe înţelesul fiecăruia,* Editura Federaţia Română Sportul pentru Toţi, Bucureşti, p.3.

[3] Mărginean, I., Precupeţu, I., Tsanov, V., Preoteasa, A.M., Voicu, B., *First European Quality of Life Survey: Quality of life in Bulgaria and Romania*, Luxembourg, Office for Official Publications European Communities, 2006 [Electronic version]. Disponibil online la http://www. eurofound.europa.eu/pubdocs/2006/67/en/1/ef0667en.pdf., p.56.

[4] Sabău, E., (2002), *Fitnesul fizic- concept relaţionat cu starea de sănătate*, Revista "Palestrica Mileniului III", anul III, Nr. 3, Cluj-Napoca, p.39.

[5] http://www.topendsports.com/testing/hometest.htm, accesat la data de 30.03.2015.