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Original article

COMPARATIVE STUDY ON THE POTENTIAL BIOMOTRIC STUDENTS FROM THE UNIVERSITY "SPIRU HARET" AND U.M.F. "CAROL DAVILA"

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Abstract*

Aim. The study aims to assess the potential biomotric students at the two universities with different profiles, namely, with different curricula and comparing their results.

Age persons undergoing the experiment falls in early adulthood 18-20 years to 30 years for both faculty and students between the average adult students at 30-40-50 years Spiru Haret University, Faculty of Physical Education, Sport and Physical Therapy.

For adults untrained in the first category, this is a period with a relative preservation of motor performance ability, but one can observe a regression in particular the quality of motor speed and for trained athlete is the period of greatest performances in most sports. For the second age bracket, there are progressive reduction of motor performance and untrained subjects appear insufficient performance of coordination, speed and strength, the force being well preserved.

Methods. On the two groups were applied to a set of physical evidence which was followed degree of development of motor skills - strength (the upper limbs, abdominal muscles and the back muscles). So, it was performed initial test at the beginning of the year and final test at the and of the academic year and also the body mass index calculation. This study will show us the physical training and the evolution of their motor potential.

Conclusions. The results of the two categories of students after applying two different studies programs, we showed that age, the body mass index and the content of curricula influenced the evolution of female students biomotric potential.

Keywords: potential biomotric, curriculum, students, strength.

Introduction

Specific requirements that physical education in higher education is required to solve, confer, along with other scientific disciplines, an important role in complete and complex training of future specialists and increasing human performance. "Biomotric potential knowledge it is a necessity for the teachers working with the studied subjects. As a last link of the school system, the higher education offers the optimal environment which is able to intervene and to actively influence, the development, conservation and revitalization of biological potential, the vocation to move among these young people" (Petreanu, 2014).

General fitness is the ability to make a physical effort reported to the type of constitution and age (Macovei, 2007). So, by performing this study is intended to identify the level of physical preparation and the motor potential evolution of subjects.

The purpose. The study aims to assess the potential biomotric of the students at the two universities with different profiles, namely, with different study programs and comparing their results.

Methods

The research for the issue in question was performed by applying the following methods: reading and analysis of the specialized scientific literature (documentary analysis), the notes taken during the training classes, the use of the experimental method, measurement and assessment methods, the tests method and the statistical-mathematical method.

Pedagogical experiments have been conducted in the sports facilities of the two universities, during the academic year 2014/2015. Samples submitted to this experiment were represented by two groups of students (80 subjects in each group, total 160 subjects) - in the first year of study, at U.M.F. "Carol Davila" - Faculties of Medicine and Pharmacy, who chose for the attendance the basic course at aerobics within the discipline of Sports and Physical Education and at the

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Spiru Haret University - Faculty of Physical Education and Sports and Special Motion Physical Therapy specialization where subjects attended basic gym workout. The average age of the subjects was 24.9 years - U.S.H and 19.3 years - U.M.F.C.D.

On these two groups have applied different study programs specific to each university or faculty, according to each profile. At U.M.F.C.D., the educational process consisted a total of 30 lessons with a weekly frequency, the lesson lasting 100 minutes, their contents having means of aerobics maintenance and of competitive aerobics gymnastics. At U.S.H., the educational process consisted a total of 14 lesssons, also with a weekly frequency, the lesson lasting 90 minutes, their contents having means of basic gymnastics, namely the complexes of free exercices, with partner, with baton, ball, to the bank gymnastics and the scale fixed.

Instruments: the somatic measurements consisted in testing of motric parameters (general physical training tests - test for the abdominal muscles, test for the back muscles and for the upper limbs), the age and the body mass index (Buțu, 2012).

In the anthropometric plan, were measured: the hight, the weight and the body mass index (Bota, 2000).

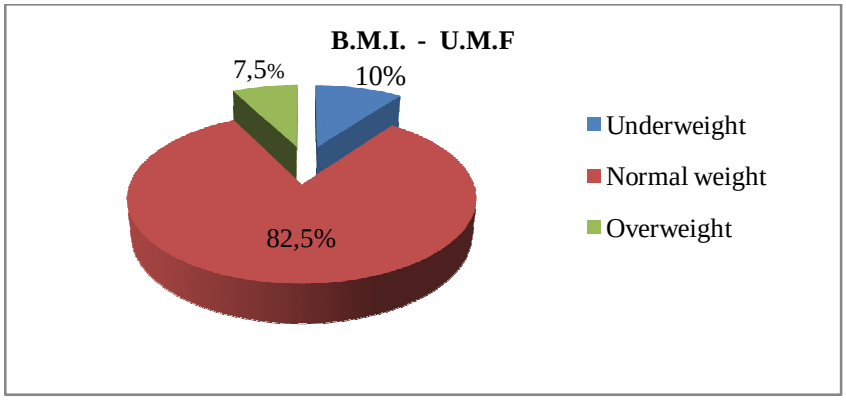

Figure no.1: Body Mass Index - U.M.F.C.D.

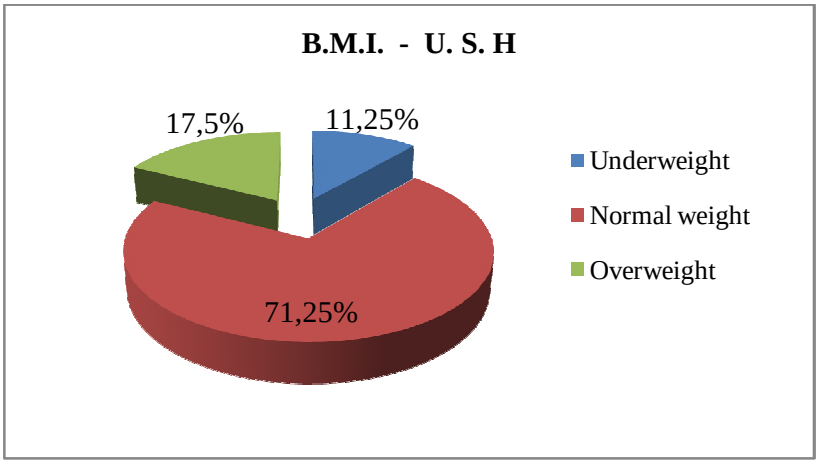

Figure no.2: Body Mass Index - U.S.H.

Three tests were used in motric plan (Drăgan, 2002), under force of resistance:

- The force of upper limbs - pushups - bending and stretching his arms in support facial, numbers of repetitions;
- The abdominal strenght - lifting the trunk, the dorsal lying with hands behind your head in 30 seconds (Niculescu, Gheorghe, Buțu, Jeleascov, 2009);
- The muscles back strenght - lifting the trunk, from lying face with hands behind your head in 30 seconds.

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Table no.1: Statistical indicators for *The abdominal strength* (initial and final testing)

Statistical indicators		X	Max	Min	M	Mo	d	S.E	A	D
U.S.H	*Ti*	12,83	38	2	2	0	4,77	0,69	36	38,46
	Tf	15,13	36	6	5	5	4,48	0,65	32	34,42
U.M.F.C.D.	*Ti*	15,06	21	7	5	5	2,39	0,34	4	9,27
	Tf	17,28	24	1	7	7	2,09	0,3	3	7,32

Table no. 2.: Statistical indicators for *The muscles back strenght* (initial and final testing)

Statistical indicators		X	Max	Min	M	Mo	d	S.E	A	D
U.S.H	*Ti*	17,75	39	5	15	12	7,93	1,01	34	82,26
	Tf	19,92	40	7	17	12	7,81	0,99	33	79,15
U.M.F.C.D.	*Ti*	20,15	30	12	20	20	2,84	0,43	18	15,29
	Tf	22,5	32	15	22	21	3,02	0,42	17	14,27

Table no.3.: Statistical indicators for *The force of upper limbs (*initial and final testing)

Statistical indicators		X	Max	Min	M	Mo	d	S.E	R	Var
U.S.H	*Ti*	5,6	19	0	5	0	4,15	0,56	19	25,83
	Tf	7,37	20	1	6	3	4,06	0,55	19	24,31
U.M.F.C.D.	*Ti*	3,15	17	0	1	0	3,05	0,44	17	15,82
	Tf	5,1	20	0	4	2	3,31	0,48	20	18,69

*where: X – the average, Max – maximum, Min – minimum, M – median, Mo – mode, d– deviation, S.E – standard error, R – range, V - variance

Results

The purpose of evaluation was the appreciation of the level of physical training, the performantial behavior for each subject participant in experiment, at the beginning and after the application of specific instructional programs of both universities, to accurately determine the efficiency of the content and their optimum dosage.

The body mass index

For this indicator was achieved a single test performed at the beginning of the experiment. According to the assessment scale of body mass index Quetelet (see the figures no. 1 and 2), more than 70 % of subjects at both universities were involved in the "normal weight" category.

The abdominal muscles strength

The average - the average value recorded for this sample, at the U.M.F.C.D. group, at the initial testing it was 15,06 repetitions, at the final testing it was 17,28 repetitions and to the U.S.H. group were 12,83, respective 15,13 repetitions to the final test.

The coefficient of variation - it expresses the in percentage the measure to the degree of homogeneity of the subjects and it was 20,21 to the initial testing and 15,65 to the final testing at the U.M.F.C.D. group, what follows that the homogeneity of subjects was great, the average being representative. For the U.S.H. Group, the mean was 48,31 in initial testing and 38,75 in the final testing, which means the heterogeneity of subjects and the average being unrepresentative.

The muscles back strenght

The average - the average recorded value for this sample, at the U.M.F.C.D. group, at the initial testing it was 20,15 repetitions and to the final testing it was 22,5 repetitions. Within the group of U.S.H., the means were 17,75 repetitions in initial testing and 19,92 to the final testing (table no. 2).

The coefficient of variation - it expresses the in percentage the measure to the degree of homogeneity of the subjects and it was 19,4 in initial testing and 16,79 repetitions to the final testing, at the

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U.M.F.C.D. group, what follows that the homogeneity of the subjects was great, the average being representative. For the U.S.H. group, the average was 51,09 in initial testing and 44,65 in the final testing, which means the heterogeneity of subjects and the average being unrepresentative.

The force of upper limbs

The average - the average recorded value for this sample, at the U.M.F.C.D. group, at the initial testing it was 3,15 repetitions and to the final testing it was 5,1 repetitions. The averages in the second group were 5,6 repetitions in initial testing and 7,37 to the final testing.

The coefficient of variation - it expresses the in percentage the measure to the degree of homogeneity of the subjects and it was 126,28 in initial testing and 84,78 to the final testing, at the U.M.F.C.D. group, which means the heterogeneity of subjects and the average being unrepresentative. For the U.S.H. group, the average it was 90,76 in initial testing and 66,85 in the final testing, which means, also, the heterogeneity of subjects and the average being, unrepresentative.

Table no4:The dynamics of the evolution, initial and final testing - U.M.F.C.D.

Statistical indicators	*The abdominal muscles strength*		*The muscles back strenght*		*The force of upper limbs*	
	Ti	**Tf**	**Ti**	**Tf**	**Ti**	**Tf**
X	15,06	17,28	20,15	22,5	3,15	5,1
S	3,04	2,70	3,91	3,77	3,97	4,32
C.V	20,21	15,65	19,4	16,79	126,28	84,78
Size of growth	14,77%		11,66%		61,90%	

Table no 5**:** The dynamics of the evolution, initial and final testing - U.S.H

Statistical indicators	*The abdominal muscles strength*		*The muscles back strenght*		*The force of upper limbs*	
	Ti	**Tf**	**Ti**	**Tf**	**Ti**	**Tf**
X	12,83	15,13	17,75	19,25	5,06	7,37
S	6,20	5,86	9,07	8,89	5,08	4,93
C.V	48,31	38,75	51,09	44,65	90,76	66,85
Size of growt	17,91 %		12,25%		31,69%	

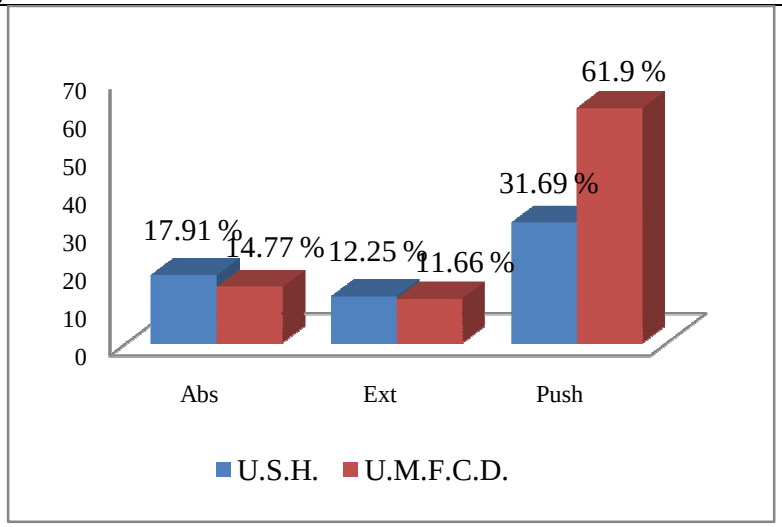

Figure no 3: Comparative analysis of the increasing size

The size of increase – represent the medium progress (Epuran M, 2005) expressed in percentage or the effect produced of the subjects by the pedagogical programs implemented and was calculated using the formula:

The size of increase = the difference between averages (X Tf – X Ti) / X Ti * 100

Discussions

The data obtained in this study have revealed the current level of physical training, in particular, of motor skills, under force of resistance, and respective, of biomotric potential of students from the two universities with different profile, namely:

- Regarding the development to the abdominal muscles, the results obtained in the both tests have been better to the students at U.M.F.C.D., compared with those of U.S.H., and, also, by comparing between the size of growth, those of U.M.F.C.D. had a greater improvement than the other group, this being due, mainly, to different content of the lessons from the two universities.
- Analyzing the results (Gagea, 1999) obtained from testing the level of development of the back muscles, in the two groups and at both tests, does not exist significant differences and at the size of growth neither.
- Regarding the development of upper limb muscles, the data obtained from the initial testing and final testing of U.S.H. group was able to observe a qualitative and quantitative difference compared with the group at U.M.F.C.D., but also comparing the size of the increase could notice significant progress

Conclusions

In conclusion, the results of the experimental study conducted on two categories of students, after applying of the two curricula, during an academic year, they have shown that age, the body mass index and the content of curricula influenced the evolution of female students biomotric potential, wich (61,90%) only in the group of subjects in U.M.F.C.D.

At the size of growth of the three tests for the two groups of subjects, it has been observed that the averages increased in the percentage of 11,66 % to 61,90 % (see Figure no. 3), wich means that the used instructionale programs in the experiment led to imroved the final results.

depending on the specific university can adapt or improve the teaching methods and means to correspond with future physical requirements for future graduates/ employees.

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