Strategic programs must be initiated on a long term regarding the development of sport activities in order to prevent lack of activity, obesity, stress, different cardio-vascular, respiratory and ostero-articular diseases.

As to the way students spend their free time, we can state that oxygenation, diet and movement are synonymous to a state of good health, this being our main objective in physical education and sports, as well as the essential element in developing the quality of life.

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THE IMPACT OF PHYSICAL PARAMETERS VALUE OF THE „OIL AND GAS" STUDENTS AS A RESULT OF TAKING PART IN AEROBIC GYMNASTICS TRAINING

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Abstract
The perception of improving the quality of life for the „Oil & Gas" students by taking part in activities specific to physical and sport education, aims at all conditions that ensure the integrity of life and at tending to all social and economic requirements that are in close connection to life standards, social status, professional status, social group, types of relationships between people and groups that appear during the sports activities.
Purpose. The purpose of this research is to identify the physical development parameters that are susceptible to improvement with the help of this aerobic gymnastics program.
Methods. During the experimental endeavour, the following research methods and techniques were used: The Method of the Bibliographic Research where the gathered data supplied allowed us to get a clear picture of what has been achieved so far in the researched field. The observation method made us scientifically research the instructive and educative process in its first stage.
The bio-motric potential as well as the effects of the physical education effects of the sports activities organised with the students were carefully observed and measured using the following means:
➢ Anthropometric parameters: waist, body weight, bust, thorax perimeter while expiring, thorax perimeter while deeply inspiring.
➢ Functional parameters: heart beat frequency, systolic arterial tension, diastolic arterial tension, vital capacity.
Results. After applying the aerobic gymnastics program we notice that the anthropometric and physiologic values have their own significance and can stand for objective criteria of individual and collective measurement of the physical development processes and phenomena. After performing correlative operations between some of the indicators (morphologic and functional) we arrive at anthropometric and functional indicators that show a series of complex anthropometric and physiologic traits such as: body weight, stamina, proportion of segments, body harmony, and nutrition status.

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Conclusions. The scope of our research aims at showing the implications that the aerobic gymnastics program has in order to improve the values of development indicators. We start from the premises that lack of sports culture leads to a weak body and motric development. After implementing the aerobic gymnastics programme we noticed that that the development of the individual, from a biological, psychological and social point of view requires creating preferential programs that aim mainly at improving the health and quality of life of students.

Another pertinent problem would be that of creating flexible, modern programs. There should be specific laws that clearly define their applicability.

Key words: students, aerobic gymnastics, strategic program, body indicators.

Introduction

We live in a computerised century, where, due to technical development and science, life became anti-natural and individuals risk diminishing their perception on sensitivity. One of the purposes of education will be contributing to maintaining the functions that everyday life won't stimuli efficiently. (Mialaret, 1981)

Physical education is one of the oldest forms of exercitation and formation of the formation of the structure of human personality. This educative component contributes to the formation and development of the human being by establishing equilibrium between the physical elements and the physical ones, between motric and intellectual, affectivity and emotions. The physical and sports activities represent the main factor for preventing lack of activity, every-day stress and obesity, offering technical and functional support that no other type of activity can provide. A good physical condition is associated with the decrease of the percentage of adipose tissue and muscular force. (Niculescu, Georgescu, Marinescu, 2006)

Among the physiological effects that are favourable to health due to systematically practicing physical activities we can mention: the decrease of systolic and diastolic arterial tension, maintaining a normal body weight, achieving a slender, equilibrated figure, cleansing the arteries from cholesterol and reducing the congestion of blood vessels, improving posture; increasing physical resistance, stabilising the systolic arterial tension, improving the tolerance threshold to pain, improving the overall volume of lung capacity and the increase of pectoral muscular; the increase in the force of the myocardia muscle, reducing osteoporosis risks, the increase in mobility, the increase of artery elasticity and in the diameter of capillary vessels at muscle level. (Bocu, Lupu, 2009)

According to some studies conducted by Sporting Goods Association, (2004), sedentarism represents a real danger for health, being one of the main causes of death. The great majority of the population doesn't practice any physical activities as there is no information about the benefits it has over the human body, they don't know that by systematically practicing them, even at a moderate scale, the quality of life will be greatly improved.

In the technical university education we must stress the importance of practicing differentially physical activities and sports, so that each student can practice and participate in one or more fields of sports, or take part in a complex of activities that harmoniously develops their bodies, so that they can prevent obesity and practice sports according to their personal needs. We must make changes, starting from mentality and also by promoting physical education as, more and more children and young people should have sports culture, to practice for pleasure, enthusiastically physical exercises under any form they may be organises, taking into consideration the benefits that they bring to the body and also keeping in mind that they improve the quality of life. Sports games, gymnastics elements and specific means to athletics are at the basis of the physical education system in Romania, bringing an important contribution to reaching the general and specific objectives in this field, stressing the health of each individual, their harmonious physical development, the prevention of obesity, the development of motric qualities and physical vigour so that they can cope with social demands. (Constantinescu, 2012).

Purpose: the purpose of this research is to identify the indicators of physical development that are susceptible to amelioration with the help of an aerobic gymnastics program.

If we use structured training programs that correspond to the student's preferences then we'll be able to achieve a series of immediate bio-psycho-motric effects and to create a custom to systematically practice physical exercise in active free time activities as means of giving up sedentarism and in order to socially integrate their families.

Used Research Methods: in our experimental endeavour we used the following methods and techniques of research: the method of bibliographic study, where the data gathered offered us solid starting points in our research and allowed us to make a full picture of what has been accomplished so far in the research field. The observation method authorised us to scientifically master the truth about the education and training process as first phase of fully knowing it.

The bio-motric potential as well as the effects of the physical education activities that were organised with the students was evaluated using the following measurement categories.

The anthropometrical parameters: waist, body weight, bust, thoraces perimeter at ease, thoracic perimeter in deep inhalation.

The evaluation of the motric potential is performed through a series of tests for physical skills that test flexibility and force. The tests are thus conceived so that they can be performed in a span of 20-30 minutes, using simple equipment.

The parameters and indicators of physical development: Quételet indicator, Adrian Ionescu indicator, Amar indicator, nutrition indicator.

The experimental part as such was performed throughout university year 2011/2012, and was finalised at the end of this school year. The students were tested in preferential groups (a witness group and 2 experimental groups). In this endeavour, the groups performed activities as follows:

The experimental groups are 2, and are made out of two identical samples, each made up of 10 students, between the ages of 19-26. The girls worked during their free time, a program of aerobics gymnastics, focused on specific activities to physical education and that aim at didactical means and training objectives that we particularly wanted to test. The training program was performed 3 times a week, during the students free time and was 90 minutes long.

The control group worked following an analytical program that was conceived and approved by the University Senate at the beginning of university year 2011 / 2012. The training program was organised by university professors in the Department of Motric Activities and University Sports. Each training lasted for 90 minutes and was organised once a week. The groups are made of 20 female students between the ages of 19-26.

The anthropometrical measurements were made in collaboration with the personnel the medical department within Oil & Gas" University, Ploieşti before starting the coordinated program and when it finished

Results

After applying this gymnastics program we can notice the fact that the anthropometrical and physiological values have a great significance and can be the basis for establishing objective criteria in individual and collective evaluation of the process and phenomena of physical development. After performing correlative operations between the values of some indicators (morphological and functional) the following anthropometric and functional indicators can be observed that represent a series of anthropometric and physiologic characteristics such as: fatness, robustness, the proportion between segments, body harmony, and nutrition status. Among the results obtained, the most relevant are:

Table 1. Body weight
Statistic Indicators – Final Tests

Group	Code	Average	Median	Standard Deviation	Maximum	Minimum	Amplitude	C.v. (%)	Difference ($m_E - m_M$)	Cohen Indicator
Witness	M	69.45	69.50	9.94	89	55	34	14.3%		
Experim	E1	54.75	55.50	8.06	67	41	26	14.7%	-14.70	0.83
ent	E2	78.00	77.00	6.35	90	70	20	8.1%	8.55	0.53

Table 2 – Anova Unifactorial Results – Body weight

ANOVA UNIFACTORIAL RESULTS

M - E_1		M - E_2	
F	P	F	P
26.36	**< 0.05**	10.50	**< 0.05**

Table 3 – Statistic Indicators– Final Tests – Quetelet Indicator

Group	Code	Average	Median	Standard Deviation	Maximum	Minimum	Amplitude	C.v. (%)	Difference ($m_E - m_M$)	Cohen Indicator
								Statistic Indicators – Final Tests		
Witness	M	413.10	417.29	46.63	536	352	184	11.29%		
Experi	E_1	363.38	346.69	53.39	508	309	199	14.69%	-49.72	0.51
ment	E_2	375.41	375.06	49.90	484	296	188	13.29%	-37.69	0.40

Table 4 –e Anova Unifactorial Results– Quetelet Indicator

ANOVA UNIFACTORIAL Results

M - E_1		M - E_2	
F	P	F	P
9.840	**< 0.05**	6.09	**< 0.05**

Table 5 – Statistic Indicators– Final Tests Adrian Ionescu Indicator

Group	Code	Medium	Median	Standard Deviation	Maximum	Minimum	Amplitude	C.V. (%)	Difference ($m_E - m_M$)	Cohen Indicator
							Statistic Indicators – Final Tests			
Witness	M	-8.38	-9.50	6.09	5	-17	22	-72.7%		
Experiment	E_1	-11.05	-11.25	7.75	3	-23	26	-70.1%	-2.68	0.20
	E_2	-13.73	-15.75	7.32	-2	-26	24	-53.3%	-5.35	0.41

Table 6 – Anova Unifactorial Results – Adrian Ionescu Indicator

ANOVA UNIFACTORIAL Results

M - E_1		M - E_2	
F	P	F	P
1.473	**> 0.05**	6.31	**< 0.05**

Table 7 – Anova Unifactorial Results – Adrian Ionescu Indicator

Statistic Indicators – Final Tests

Group	Cod	Average	Median	Standard Deviation	Maximum	Minimum	Amplitude	C.v. (%)	Difference ($m_E - m_M$)	Cohen Indicator
Witness	M	24.65	24.08	2.69	32	22	11	10.9%		
	E_1	21.33	20.56	2.31	28	19	9	10.8%	-3.32	0.68
Experiment	E_2	21.46	21.27	2.55	26	17	9	11.9%	-3.19	0.62

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Table 8 – Statistic Indicators – Final Tests – Body Mass Indicator

ANOVA UNIFACTORIAL Results

M - E_1		M - E_2	
F	P	F	P
17.511	**< 0.05**	14.79	**< 0.05**

Table98 –Anova unifactorial Results– Body Mass Indicator
Resistance in Force Regime of abdominal force
Statistic Indicators – Final Tests

Group	Code	Average	Median	Standard Deviation	Maximum	Minimum	Amplitude	C.v. (%)	Difference (m_E - m_M)	Cohen Indicator
Witness	M	23.25	23.00	1.80	27	21	6	7.8%		
Experiment	E_1	26.30	26.00	3.87	33	19	14	14.7%	3.05	0.52
	E_2	29.15	29.50	2.48	32	22	10	8.5%	5.90	1.40

Table 10 – Statistic Indicators– Final Tests – abs for 30 seconds

ANOVA UNIFACTORIAL Results

M - E_1		M - E_2	
F	P	F	P
10.218	**< 0.05**	74.19	**< 0.05**

Table 11. Mobility of the Vertebral spine and Coxofemural articulation in flexion

Statistic Indicators – Final Tests

Group	Code	Average	Median	Standard Abreviation	Maximum	Minimum	Amplitude	C.V. (%)	Difference (m_E - m_M)	Cohen Indicator
Witness	M	3.15	3.00	3.20	9	-4	13	101.6%		
Experiment	E_1	7.60	7.00	4.49	15	1	14	59.1%	4.45	0.59
	E_2	8.05	8.50	2.78	14	4	10	34.5%	4.90	0.84

Table 12 –Anova Unifactorial results – Coxofemural mobility
ANOVA UNIFACTORIAL Results

M - E_1		M - E_2	
F	P	F	P
13.034	**< 0.05**	26.72	**< 0.05**

Discussion

In **Table 1 and 2** body weight we note

• group E_1: average 54.75 with 14.70 Kg less than the average of the witness group. Cohen index (0.83) shows a very large difference between the averages for groups E1 and M. The difference reached statistical significance threshold of p <0.05.

• group E_2: average 78.00, up 8.55 Kg average arm. Cohen index (0.53) indicates a high to very large difference between the means of groups E2 and M. The difference is statistically significant, p <0.05.

In **Table 3 and table 4** Quetelet Indicator remark

• group E_1: medium 363.38, smaller by 49.72 than the average of the witness group. Cohen indicator (0.51) shows a great difference towards very high between the average of groups E_1 and M. The difference has reached the threshold of statistical significance, p < 0.05.

• group E_2: average 375.41, smaller by 37.69 than the average of the witness group. Cohen indicator (0.40) shows a great difference towards very high between the average of groups E_1 and M. The difference has reached the threshold of statistical significance, p < 0.05.

In **Table 5 and 6** Adrian Ionescu Indicator remark

• group E_1: average -11.05, smaller by 2.68 than the average of the witness group. Cohen indicator (0.20) shows a small difference towards medium between groups E_1 and M. The difference didn't reach the threshold of statistic significance, p > 0.05. We accept the null hypothesis.

• group E_2: average -13.73, smaller by 5.35 than the average of the witness group. The Cohen indicator shows a great difference towards very high between the average of groups E_1 and M. The difference has reached the threshold of statistical significance Cohen indicator, p < 0.05. We accept the research hypothesis.

In **Table 7 and 8** Body Mass Indicator we note

• group E_1: average 21.33, smaller by 3.32 than the average of the witness group. Cohen indicator (0.68) shows a great difference towards very high between the average of groups E_1 and M. The difference has reached the threshold of statistical significance Cohen indicator, p < 0.05. We accept the research hypothesis.

• group E_2: average 21.46, smaller by 3.19 than the witness group. Cohen indicator (0.62) shows a great difference towards very high between the average of groups E_1 and M. The difference has reached the threshold of statistical significance Cohen indicator, p < 0.05. We accept the research hypothesis.

In **Table 9 and 10** Resistance in force regime of abdominal force

• group E_1: average 26.30, bigger by 3.05 abs than the average of the witness group. Cohen indicator (0.52) shows a great difference towards very high between the average of groups E_1 and M. The difference has reached the threshold of statistical significance Cohen indicator, p < 0.05.

• group E_2: average 29.15, bigger by 5.90 repetitions than the witness group. Cohen indicator (5.90) shows a great difference towards very high between the average of groups E_1 and M. The difference has reached the threshold of statistical significance Cohen indicator, p < 0.05.

In **Table 11 and 12** Mobility of the vertebral spine and coxofemural articulation in flexion remark

• group E_1: average 7.60, higher by 4.45 cm than the witness group. Cohen indicator (0.59) shows a great difference towards very high between the average of groups E_1 and M. The difference has reached the threshold of statistical significance Cohen indicator , p < 0.05.

• group E_2: average 8.05, higher by 4.90 cm than the witness group. Cohen indicator (0.84) shows a great difference towards very high between the average of groups E_1 and M. The difference has reached the threshold of statistical significance Cohen indicator , p < 0.05.

Following these tests carried out significant differences between the control group and a two experimental groups both Quetelet Index measurement and the measurement of Body Mass Index.

Significant differences found and endurance testing strength of abdominal muscles and spine mobility testing and coxofemoral joint in flexion, which can be seen above.

In our opinion, significant differences are normal in terms of anatomical and physiological as control group, perform one module physical education every two weeks.

In this regard it should be noted the study by Yoshizawa, Yokoyama, Sakato (2009) that have implemented health promotion based on lifestyle type exercise programs conducted at convenient and suitable personal style of each individual life. The results of these highlighted changes in attitude towards sports activities and results achieved in terms of body composition, muscle growth and weight loss.

Anecdotal evidence from studies of Teodoropoulou, and Karteroliotis, (2009). Obesity is a risk factor for Diseases and adversely Affects Health-Related Quality of Life, Which has been defined as individual year's Perceived physical and mental health over time. However, the effects of obesity in the Greek Population Examined have not been previously.

Conclusions

The finality of our research aims at proving the impact that gymnastics program has in order to improve the values of physical development indicators. Starting from the premises that the lack of sports culture leads to a poor body development and motricity. After having implemented the aerobics program we first of all noticed a development on the part of the individual from a biological, psychological and social point of view. There is a need to create programs that aim at improving and mentaining the students health state and quality of life.

Promptly finding solutions by initiating long-term strategic programs of sports activities that prevent sedentarism, obesity, fatigue, stress, different cardio-vascular, respiratory or osteoarticular disease.

A healthy individual, with real aptitudes towards a high level life quality needs to continually practice sports activities during their free time and after finishing the courses at university, implementing physical exercise as a way of life.

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