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STUDY REGARDING THE INFLUENCES OF AEROBICS MAINTENANCE EXERCISES ON TEENAGE GIRLS OF 14-16 YEARS

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Abstract
This paper assumes that the constant and regular practice of aerobic gymnastics of maintenance can help decrease body excess of teenage girls while improving their confidence and self-esteem.
By choosing this topic, the paper proposes the following objectives: the development of effort capacity, the formation of optimal foundations of physical training, a harmonious physical development, the formation of a properly kept and aesthetic figure, improving muscle elasticity and joint mobility and removing the excess body fat in adolescent girls.
Keywords: *overweight, experimental programs, aerobics gymnastics exercises of maintenance*

INTRODUCTION

The everyday life of the contemporary man is dominated by the explosion of scientific technical and informational progress, and this is what creates better living and working conditions, but also generates changes in the sphere of biological, physical and mental development of individuals. If some of the changes mentioned above influence positively the health of individuals and bring an important contribution to the socio-economic progress, others negatively affect the optimal functioning of the body from both a somatic and psychic points of view.

Sedentariness is the most important factor that generates negative effects on the health of the modern man and is the root of most diseases that shorten the human life nowadays. It is the natural consequence of *comfort* civilization against the amount of daily exercise, the volume and intensity of exercise reducing the potential human energy, which is indispensable in order to counteract stress factors from the external environment. The most common disorders caused by inactivity that can be mentioned are: the poor functional capacity of respiratory and cardiovascular apparatus, degenerative disorders of the osseous and joints systems, the phenomenon of increased irritability, overweight etc. It is alarming that in Romania more than 30% of the school population are obese according to statistics from the Ministry of Health, and within the European Union the number of overweight schoolchildren grows by about 400,000 per year, with about 200 million overweight or obese adults.

Many authors (Brick, LG, 1996 Dobrescu, T., 2008, Nanu, L., 2010) concluded that physical exercise resulted from any kind of physical activity (long walks, jogging, sports, cycling, swimming, aerobics gymnastics exercises of maintenance etc.) and a controlled diet with reduced calorie meals can ensure a long and healthy life of individuals regardless of age, sex, level of education or work.

Aerobics gymnastics exercises of maintenance is a form of movement that is attracting more and more people, due to the diversification of exercises, their inter-twinning with dance steps and elements of ballet, tae bo, stretching and others indispensable made with an appropriate musical background, determine an increasing number of individuals who step into specially designated spaces for such physical activities that lead to a harmonious physical development, in order to form a properly kept and aesthetic figure, and not infrequently to eliminate excess body fat, but also to create a state of good mood and also increased confidence and self-esteem.

OBJECTIVES

Maintenance exercises of aerobics gymnastics help to develop the effort capacity, a harmonious physical development, the formation of a properly kept and aesthetic figure, improves muscle elasticity and joint mobility in order to eliminate excess body fat in adolescents, improves the capacity of physical and mental relaxation, and also leads to increased confidence and personal respect.

HYPOTHESIS

In the formulation of the working hypothesis it is assumed that if adolescent girls of 14-16 years that execute maintenance exercises of aerobic gymnastics in special centers under the guidance of

specialized personnel can have a harmonious physical development, aesthetic postures and also can eliminate the excessive weight.

MATERIALS AND METHODS

a. Research protocol

The research was conducted at the "Gym Club" Center in Galati over a period of 6 months (October 2012 - March 2013) in the aerobics gym, 2 times per week, each session of 40 minutes.

b. Subjects

The work sample was represented by 16 girls, aged between 14 and 16 years old.

c. Groups

The experimental group (EG) and the control group (GC) were established each consisting of 8 girls of 14-16 years old, who benefitted from the same conditions during the lessons, and the same basic material.

d. Assessment tests

Somatic indicators tested:

- *Height* (taliometer - dimensions in cm between the vertex and the plane plants). Subject standing with joints in extension so that the vertical rod of the taliometer can reach the heels, the inter - buttock ditch and the backbone at the level of scapulae (H);
- *Weight* (weighing people scale – the weight in kilograms and hundreds of grams to one decimal) (G);
- *Abdominal perimeter* (metric tape - dimensions in cm midway between the ribs and iliac crests) (PA);
- *Thigh perimeter* (metric tape - the bulky dimensions of the segment muscle - muscle relaxation) (PC right);
- *Arm perimeter* (metric tape - the bulky dimensions of the segment muscle - muscle relaxation) (PB right).

Driving test indicators tested:

- *The abdominal muscle strength 30"* (lying on the back, legs departed and bent, arms folded with hands behind your head - trunk lifts for 30 seconds - the number of repetitions) (A30");
- *The strength of the back muscles 30"* (lying on the front, arms bent, hands behind your head - extensions of the body for 30 seconds - the number of repetitions) (E30");
- *The strength of the leg muscles 30"* (standing with the legs outlying, arms bent, hands behind your head - squats in 30 seconds - number of repetitions) (G30");
- *The strength of the arm muscles 30"* (sitting on the front with support on your knees and with your ankles in the air - push-ups - number of repetitions) (F30").

After the analysis of the initial test results recorded, there have been developed and applied 3 experimental training programs aerobics with means of aerobics exercises of maintenance of different levels of difficulty for GE which consisted of teenage girls of 14-16 years old, in order to obtain a harmonious physical development and eliminate excess weight.

The experimental training programs have been structured over 6 months (by 8 weekly cycles of 2 lessons), being executed 30 exercises during each complex, with each lesson of 40 minutes - Table I.

Table I Patterns of aerobics exercises of low-difficulty level

Program no. 1			
1.	P.I. Standing slightly apart – arms sideways: *Action* – high sideways lunge simultaneously raising the arm on the same side with the lunge, and the other arm goes downwards in the front - return - fig. 1		- 2 x 8 repetitions - the same action is repeated on the opposite leg
2.	P.I. Standing slightly apart, with the right arm bent, the hand on the hip, and the left arm up: *Action* – leaning the torso to the right – return – fig.2		- 2 x 8 repetitions - the action is repeated in the opposite way

3.	P.I. with the torso bent, the arms forward: *Action* - bending the arms forward in a right angle – fig. 3		- 2 x 8 repetitions

The second training program ran from December 2012 until January 2013, and the exercises used had an average degree of difficulty - Table II.

Table II Patterns of aerobics exercises of medium level of difficulty

Program no. 2			
1.	P.I. Standing slightly apart in semi-flexion, the arms bent and the hands behind your head: *Action* – the alternate leaning of the torso in a sideways plan to the right/left – fig. 4		- 3 x 8 repetitions
2.	P.I. Standing apart, with the arms up and the hands held together: *Action* – bending the knees and lowering the bottom – fig. 5		- 3 x 8 repetitions
3.	P.I. Standing apart in the anterior – posterior plan: *Action* – low lunge towards the front and putting the palms on the floor – fig. 6		- 2 x 8 repetitions - the action is repeated with the opposite leg

During February and March 2013, the experimental training program no. 3 was applied with aerobics exercises of high difficulty - Table III.

Table III Patterns of aerobics exercises with high difficulty

Program no. 3

1.	P.I. Standing on one knee, with the other leg stretched sideways, and the arms bent with the hands behind your head: *Action* – leaning the torso in a sideway plan, on the side with the stretched leg - return – fig. 7		- 2 x 8 repetitions - the action is repeated with the opposite leg
2.	P.I. Lying in a square position, with support on the fore-arms: *Action* – moving the stretched legs up and down within an angle of 45^0 - fig. 8		- 2 x 8 repetitions
3.	P.I. Lying on the back with one leg bent and supported with the foot on the floor, the other leg bent and maintained forwards in a right angle: *Action* – lifting the torso and the bottom from the floor – return - fig. 9		- 2 x 8 repetitions - the action is repeated with the maintenance of the opposite leg

f. Statistical methods used

The statistical processing of the results achieved was done by using the Microsoft Office Excel 2007 application.

RESULTS

Following the application of experimental training program with means of aerobics exercises of maintenance for a harmonious physical development and disposal of overweight in adolescent girls 14 to 16 years, the GE results are superior to the results achieved by GC, with significant progress between the two testing of the same group (Tables IV, V).

Table I Mean and mean difference somatic indicators of TI and TF GE and GC

DYNAMICS OF SOMATIC INDICATORS - ADOLESCENTS 14 TO 16 YEARS																				
Proba	**Î** (cm)				**G** (kg)				**PA** (cm)				**PC dr.** (cm)				**PB dr.** (cm)			
Grupa	**GE**		**GC**		**GE**		**GC**		**GE**		**GC**		**GE**		**GC**		**GE**		**GC**	
Testări	**TI**	**TF**	**TI**	**TF**	**TI**	**TF**	**TI**	**TF**	**TI**	**TF**	**TI**	**TF**	**TI**	**TF**	**TI**	**TF**	**TI**	**TF**	**TI**	**TF**
1.	157	160	168	168	68	62	65	63	76	72	78	77	65	63	57	56	36	35	28	27
2.	166	166	159	160	86	78	73	69	110	104	76	76	68	65	63	62	38	35	28	28
3.	170	171	176	177	79	73	60	58	78	75	67	68	68	66	50	50	36	35	26	25
4.	157	160	168	168	65	60	52	49	74	72	69	67	62	61	57	57	32	31	22	22
5.	167	167	155	155	65	60	65	60	75	72	74	75	57	56	62	61	28	27	28	28
6.	166	166	166	168	70	64	80	75	68	64	78	76	53	52	70	70	29	28	36	35
7.	157	160	153	155	52	47	51	50	68	65	65	66	56	55	53	52	24	23	20	20
8.	170	171	168	168	79	71	70	65	78	72	78	75	68	65	63	63	36	33	28	28
x	163,7	165,1	164,1	164,8	70,5	64,3	64,5	65,1	78,3	74,5	73,1	72,5	62,1	60,3	59,3	58,8	32,3	30,8	27	26,6
± m	**+1,4**		**+0,7**		**- 6,2**		**+ 0,6**		**- 3,8**		**- 0,6**		**- 1,8**		**- 0,5**		**- 1,5**		**- 0,4**	

Table V Mean and mean difference driving indicators of TI and TF GE and GC

DYNAMICS OF DRIVING INDICATORS - ADOLESCENTS 14 TO 16 YEARS																
Proba	**A30”**				**E30”**				**G30”**				**F30”**			
Grupa	**GE**		**GC**		**GE**		**GC**		**GE**		**GC**		**GE**		**GC**	
Testări	**TI**	**TF**	**TI**	**TF**	**TI**	**TF**	**TI**	**TF**	**TI**	**TF**	**TI**	**TF**	**TI**	**TF**	**TI**	**TF**
1.	16	20	16	19	14	17	19	20	16	22	22	20	7	12	2	5
2.	21	28	19	20	20	26	24	24	20	28	23	24	8	16	6	8
3.	17	21	16	20	20	24	17	19	20	25	18	19	10	14	6	8
4.	16	21	14	18	18	21	17	19	18	24	20	20	4	10	4	5
5.	21	27	17	20	20	25	16	20	21	26	20	21	7	15	10	12
6.	18	23	18	22	19	23	18	20	17	24	24	25	5	9	8	10
7.	19	23	14	19	17	20	16	18	18	26	19	20	9	16	10	13
8.	22	30	15	20	20	25	18	20	19	26	23	23	8	18	12	14
x	**18,7**	**24,1**	**16,1**	**19,7**	**18,5**	**22,6**	**18,1**	**20**	**18,6**	**25,1**	**21,1**	**21,5**	**7,2**	**13,7**	**7,2**	**9,3**
± m	**+ 5,4**		**+ 3,6**		**+ 4,1**		**+ 1,9**		**+ 6,5**		**+ 0,4**		**+ 6,5**		**+ 2,1**	

DISCUSSIONS

Following the application of experimental training program with means of aerobics exercises of maintenance, it was revealed that both groups showed better results than during the initial tests, even if the results of the experiment group were significantly higher than the final results of the control group during both the initial and final tests.

Regarding the somatic indicators of the final testing, the experimental group showed an average height of 1.4 cm and a teen average weight loss of 6, 2 kg compared with the results of the control group which showed an increase in height of 0, 7 cm and an average weight loss of 0.6 kg. The average abdominal perimeter of teenagers from the experiment group showed a lower value of 3.8 cm at the final testing, compared with the results of the

control group of an average score of 0.6 cm lower than the initial testing.
At the final testing of driving indicators, the progress was obvious for the experimental group showing higher average values between tests with: 5.4 repetitions to test abdominal strength, 4.1 repetitions to test back strength, 6.5 repetitions to test the strength of lower limbs, and 6.5 repetitions to test the strength of arms.
The progress of the experiment group was evident both between the two tests of the same group, and compared with the results in the tests of the control group.

CONCLUSIONS

1. After processing and interpreting the data drawn from comparing the two groups of teenage girls of 14-16 years old, the hypothesis is confirmed that maintenance aerobics exercises have a major role in obtaining a harmonious physical development, contribute to the formation and development of the motor skills baggage, and reduce and eliminate excess body fat.
2. Maintenance aerobics exercises help to correct the posture and harmonious formation, and it can be practiced at any age depending on the level of training of individuals.
3. Aerobics exercises have also a significant role in building relaxation capacity of muscles and mind, creating good mood for individuals, and also ensuring confidence and self-esteem.
4. By using aerobics exercises, it improves the health of individuals and it has a significant role in correcting poor attitudes or deficiencies caused by incorrect body posture.

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ON THE INFLUENCE OF AEROBIC GYMNASTICS EXERCISES IN STRESS PREVENTION IN ADOLESCENCE (17 – 18 YEARS OLD STUDENTS)

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Abstract
The present paper starts from the assertion that using methods and means specific to aerobic gymnastics in the education process for young students of 17-18 years of age might accentuate the positive influences on their balanced physical and aesthetic development and, at the same time, will help in the development of personality by increasing self-confidence and stimulating self-awareness. In turn, these may lead to increases in school performance through eradication or limitation of the stress factors specific to adolescence.
Keywords: *aerobic gymnastics, adolescents, high school, prevention, stress*

INTRODUCTION

The increase in the rhythm of society evolution, the volume of tasks and accelerated dynamics of social environment claim more and more adaptation availability of the human body, which determines psychic stress. From this perspective, one may mention day-by-day stress, environmental stress,