

A VIEW ON THE EFFECTIVENESS OF CARDIO-AEROBICS, FITBALL AEROBICS, DANCE AND PORT DE BRAS

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Abstract

The aim of the research is to find out the possibilities of different aerobics styles as a fitness discipline. The methodology of the research includes: a theoretical overview and analysis, anthropometric tests, physical aptness tests and mathematical-statistical methods. The research sample consisted of 17 women from an aerobic group. The average age of the group members included in the research is 34.7 years. They practice 4 times a week and the program includes the following styles: cardio aerobics, fitball aerobics, dance aerobics and port de bras. The analysis of the research results allows us to draw the following conclusions: The practicing of cardio aerobics, fitball aerobics, dance aerobics and port de bras influences positively toward the dynamics of a person's physical aptness; there is a considerable growth in flexibility, balance stability, torso's strength endurance and the functional condition of the cardio-vascular system.

Keywords: *anthropometric tests, functional tests, motor tests, physical exercise, experiment, coefficient of variability*

INTRODUCTION

The industrial revolution nowadays is changing to a great extent the structure, contents and purpose of physical labor. People's physical efforts are progressively diminishing in the 21st century. Nowadays civilization's mod cons (cars, trains, planes, the Internet, power-saving appliances, etc.) facilitate people's life to a great extent while at the same time deprive them of motion. To oppose this growing negative trend, motion needs to become an inseparable part of man's life. In this respect, physical exercises and fitness have become more and more popular in the last two decades. Physical activity and exercises is a "key" to a healthy way of life. Their effect could be summarized in the following way: a lower probability of a heart attack or a brain stroke, better control of the body mass, a lower risk of diabetes and cancer, strengthening of the bones, lower risk of stress, increasing the body energy.

The word „fitness” means: the state of

being physically fit; to keep fit – keep one's health; to be bodily fit –to be healthy, keep fit (Войанова, et al. (Боянова), 2000; Вуров, et al. (Буров), 2000).

In sports literature the term “fitness” is defined as a combination of motive activity aimed at forming and keeping at a high level the psycho-physical work capacity, improving the health, forming a beautiful and harmonious body. According to a number of authors the achievement of an adequate physical condition can be done through optimal sport training. It should be in accordance with the present physical, psychic and health condition of the trainee, balanced nutrition and a healthy way of life. What differentiates fitness from other sports is the absence of competitiveness, as well as the possibility to practice it at home (Бъчваров (Bachvarov), 2005; Димитрова (Dimitrova) 1989; Минева (Mineva), & Байкова (Baikova), 2005; Несторова (Nestorova), 2007). D. Jeshke points out

that “By fitness we mean a person’s psychic and physical abilities which enable them to overcome different intellectual and physical burdens of every day life, their jobs and leisure time in a way that prevents them from getting mentally or physically tired or even fatigued so that they could lead a normal creative life” (<http://wikipedia.org>).

Aerobics, as a fitness discipline is more and more widely used for recreation and maintaining a high level of psycho-physical work capacity. As a reaction to people’s need for motion, it develops, improves and enriches different styles and varieties.

Cardio aerobics is a successive and continual physical exercises based on gymnastics accompanied by music with different levels of intensity and coordination complexity (Димитрова (Dimitrova) 1989; Минева (Mineva) & Байкова (Baikova), 2005; Несторова (Nestorova), 2007).

Its main task is to develop and improve the functional capabilities of the body in an aerobic and anaerobic regime. It has a favorable influence on the locomotors system, respiratory system, nervous system, blood circulation as well as a person’s general health. The musical accompaniment in aerobics creates positive emotions in people practicing it. Music states the rhythm, regulates the pressure, and controls the tempo, character and intensity of the pressure. All this turns it into a unique aerobics discipline.

Fitball aerobics. The word “fitball” comes from the words fitness and ball. The exercises that could be done with these balls are known as fitball exercises or fitball aerobics. For the first time these big inflatable balls appeared in Switzerland where the name Swiss Ball comes from. Fitball encompasses all possible aspects of using the balls in accordance with the worldwide accepted fitness system. “For healthy people this is a new pastime with a different distribution of pressure – increased role of spinal musculature for keeping the balance on the spherical surface of the ball. The ball sends information to all analyzers thus provoking reaction in the nervous system, increasing the processes in the muscles and the tendon-joint system and muscle activity in a movable support.” (Генчева (Gencheva), 2006).

Fitball aerobics offers a new and different

kind of pressure. Strength and endurance increase, coordination, balance and posture improve. It influences the suppleness of the spinal cord and the flexibility of the muscles and joints, which leads to the elimination or decrease of joint aches and the normal function of internal organs.

Port de bras. A choreography term which means literally “movement of arms and body”. Although a new fitness discipline (2006), *Port de bras* is an original and modern mixture of dance and therapeutic elements at the background special music (chill-out ambient) creating not only a unique atmosphere but also conditions for a kind of meditation in the dance. This program helps to achieve a full and balanced body health as a new discovery in the modern fitness.

In its nature it is a mind-and-body dance, an exercise, a trend which unites human’s psycho-physical potential (soul and body; sense and body; sensible body), in order to achieve harmony and self-knowledge through one’s body. It has an influence at every level: psychic – a feeling of beauty, satisfaction, harmony and relaxation; physical – the work of muscles in the whole body through integrated movements; special emphasis is placed toward the lines of shoulders-arms and hips-legs; biomechanical – coordination and a feeling of rhythm, the movements are graceful and controlled, thanks to the improved nervous-muscular condition. It can be done by anybody as it does not need a special preparation or skills and represents a perfect means to overcome the stress within the every day life.

The aim of this research is to examine the possibilities of utilizing as well as the effects of different styles of aerobics as a fitness discipline.

To achieve this aim the following *tasks* have been solved:

1. Finding out the theoretical bases of the problem.
2. Diagnosing the dynamics of the indices of the functional state and physical aptness in aerobic and anaerobic regime.

The subject matter of this research is the influence of specialized methods on the physical aptness of people practicing aerobics.

The object of the research is the indices of physical development, physical capability

and the functional state of the people included in the research.

The subject of the research is 17 women from the aerobic s group. They practice 4 times a week and the program includes the following styles: cardio aerobics, fitball aerobics, dance aerobics and port de bras.

METHODS

Include: theoretical overview and analysis; anthropometric tests; body mass index (BMI); index of Rouffier; tests of physical capability and mathematic-statistical methods – analysis of variance.

RESULTS

Table 1. shows the statistically acquired empirical data, determining the physical aptness and functional condition of the women practicing aerobics. The figures in the numerator show the values at the beginning of the experiment and those in the denominator at the end of the experiment. By analyzing the average values of the indices we searched for clarification of the extent of the influence of the applied method.

The average age of the subjects included in the research is 34.7 years. 17.6% of them are under 30. This relatively low percentage confirms the conclusions made in other researches that people under the age of 30 are not in the habit of doing physical exercises. On the other hand aerobics is getting more and more popular among the more mature women – 82.4%. This can be explained in several ways: a desire for keeping and maintaining of esthetic appearance, improving one's health, as well as fighting everyday stress at work and home.

For one of the main indices of physical development – height – the average values at the beginning and at the end of the experiment are identical – 159 cm. As it is well known that the growth of women slows down at the age of 15 and at the age of 17 it practically stops.

Another important informative index of physical development is the body mass. It shows a negative growth of -9.2%. The exercises with aerobic and anaerobic character are with a relatively big volume and variable intensity. The variation coefficient decreases at the end of the experiment which means that the methodology used in the experiment is

Table 1. Statistical parameters of the anthropometric and motor variables

№	Indices	X min	X max	Av	S _{Av}	V%	% Growth
1.	Age	22	48	34,7	9,8	28,2	
2.	Height	155	168	159	4,4	2,8	
3.	Weight	44	83	60	11,6	19,4	-9,2%
		47	68	54,5	6,2	12,1	
4.	BMI	17,5	33,2	23,9	4,6	19,1	-10%
		18,7	27,2	21,5	2,7	12,5	
5.	Index of Rouffier	5	17,4	10,6	3,6	34,4	-36,8%
		2,4	11,7	6,7	3,2	46,5	
6.	Body strength	6	18	14,2	3,5	24,6	39,4%
		12	26	19,8	4,2	21,3	
7.	Flexibility	4	13	9,9	2,9	29,1	70,7%
		10	19	16,9	3,2	19	
8.	Flamenco	0	16	4,7	3,8	79,2	-55,3%
		0	14	2,1	3,2	150,8	

effective and influences the index that has been researched.

We have used the body mass index (BMI) to define the normal values of weight

and the extents of overweight. The values at the beginning and at the end of the experiment – $Av_1=23,9$ и $Av_2=21,5$ are within the limits of the norm (between 19 and 24).

The functional condition of the cardio-vascular system and the manifestation of the ability to bear the pressure, as well as the mechanism of organism regeneration have been examined with the index of Rouffier. The relatively high growth percentage – 36.8, shows that work capability changes at the end of the experiment but the coefficient increase of variation $V\%_1=34.4 - V\%_2=46.5$ is an indication of the group's heterogeneity.

Physical aptness is a combination of a person's qualitative and coordinative loco motor abilities. It is an indication of the general work capability on the basis of a complex development of the physical qualities and guarantees a good health.

Strength and speed-power endurance of abdomen musculature have been examined with the help of the “*Torso elevation from a supine position*” test. We have found out that there is an increase of the average values at the end of the experiment and a high growth percentage by 39.4%. The variability of this index decreases by the end of the experiment. It means that this positive change is a result of the applied methodology.

In specialized literature flexibility is defined as the ability to perform movements with big amplitude. It is one of the main factors of mastering the physical exercises technique. In connection with the aim and the tasks of this research we were interested in observing the dynamics of the quality development through the “*Deep bending*” test. At the beginning of the experiment the average value was 9.9 cm while variability was 29.1%. At the end the average value was 16.9 cm with a decreased variability of 19%. This shows that the positive changes are a result of the applied methodology in which flexibility and stretching exercises are widely used, especially in two of the programs *fitball aerobics* and *port de bras*. The decreases of the variability index could be explained with the cases grouping.

Balance stability is a necessary component of a person's active life. We have diagnosed it with the help of the “*Flamenco*” test. In analyzing this index we have to bear in mind the high growth percentage of the group – 55.3%. It may be due to the fact that

a major part of the fitball aerobics exercises were carried out on a dynamic prop which is often connected with a frequent change of the centre of gravity. Variability of this quality is very high, which is a result of the individual characteristics of the people taking part in the experiment.

CONCLUSIONS

The analysis of the research results allows us to draw the following conclusions:

1. The practicing of cardio aerobics, fitball aerobics, dance aerobics and port de bras influences positively the dynamics of a person's physical aptness.

2. There is a considerable growth in flexibility, balance stability, torso's strength endurance and the functional condition of the cardio-vascular system.

3. Based on the experiment we could recommend the practicing of different styles of aerobics as a means of complex influence on the body.

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ОСВРТ ВРЗ ЕФИКАСНОСТА НА КАРДИО АЕРОБИКОТ, ФИТБОЛ АЕРОБИКОТ, ТАНЦ АЕРОБИКОТ И ПОР ДЕ БРА

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Апстракт

Целта на истражувањето беше да се утврдат можностите за влијанието на различни стилови аеробик како фитнес дисциплина. Беа применети следните мерни инструменти: теоретски преглед и анализа, антропометриски мерки, моторни и функционални тестови. Примерокот на испитаниците беше дефиниран со 17 женски лица кои се занимаваат аеробик. Просечната возраст на испитаниците беше 34,7 години. Испитаниците беа опфатени 4 пати неделно со програмски тренажни активности во стиловите: кардио аеробик, фитбол аеробик, танц аеробик и Пор де бра. Анализата на добиените резултати од истражувањето покрај другото, покажа дека: занимавањето со кардио аеробик, фитбол аеробик, танц аеробик и Пор де бра, позитивно влијаат врз физичките способности; Забележителен пораст е констатиран кај моторните способности: флексибилност, издржливост во силата на трупот и функционалната состојба на срцевиот систем.

Клучни зборови: *антропометриски тестови, функционални тестови, моторни тестови, физичко вежбање, експеримент, коефициент на варијабилност*

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