

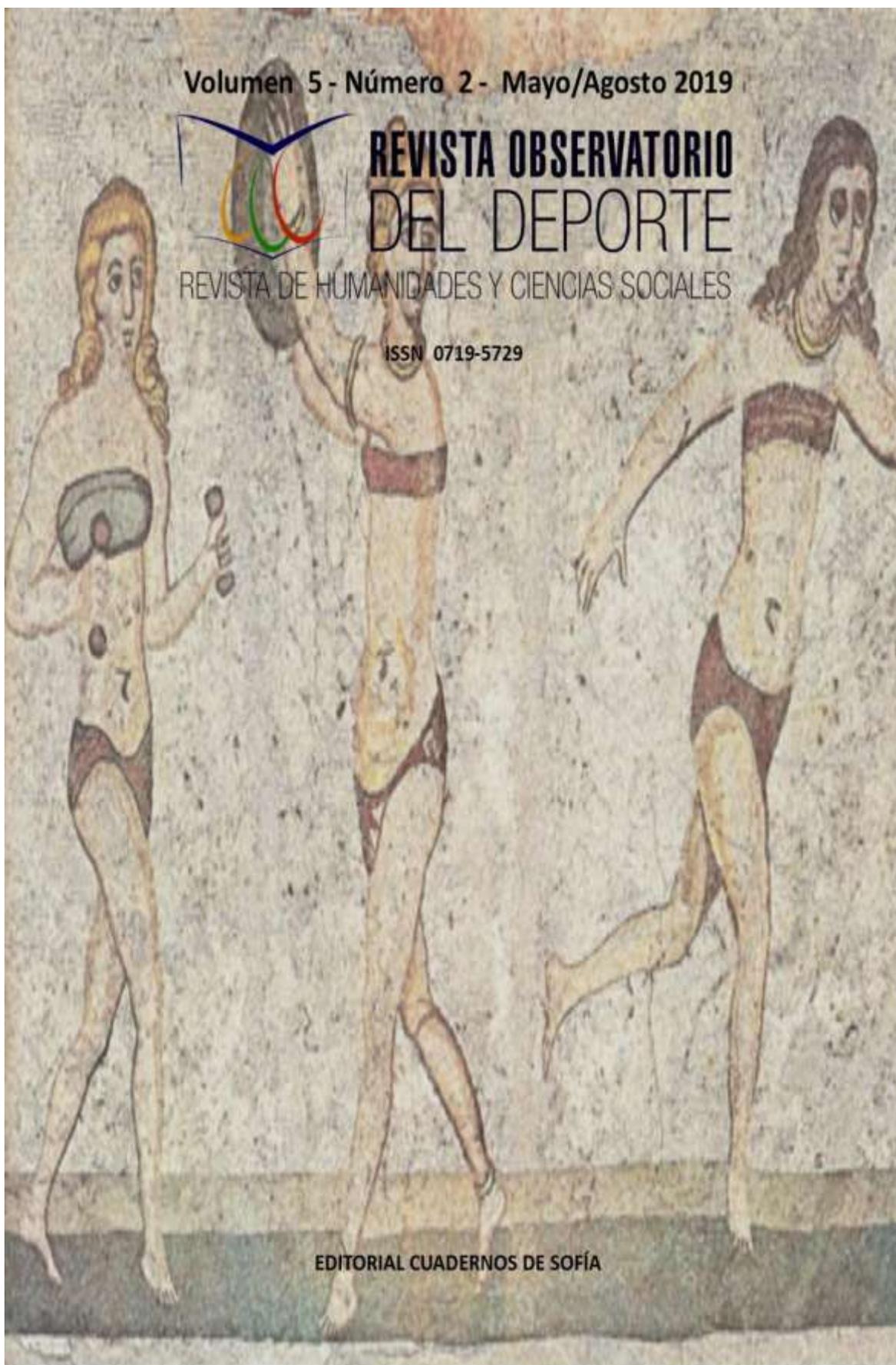
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BODY TRANSFORMATION THROUGH FITNESS-BOXING METHOD
MODELAR EL ESTADO CORPORAL A TRAVÉS DEL MÉTODO FITNES-BOX

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Abstract

In the context of new realities of life in the modern society and the dynamic development of the socio-economic life, as well as the conditions of globalization, industrialization and urbanization, lead to significant reduction physical activity of the population. As a consequence, one of the most common metabolic disorders that has serious health risks - obesity - has increased significantly. This necessitates led to rethinking and updating basic concepts related to prevention and intervention to maintain physical and mental health.

Keywords

Fitness-boxing – Obesity female – Weight loss – Health – Prevention

Resumen

En el contexto de las nuevas realidades en la sociedad moderna y el desarrollo dinámico de la vida socioeconómica, en las condiciones de globalización, industrialización y urbanización, la actividad física de la población ha disminuido significativamente. Como consecuencia, uno de los trastornos metabólicos más comunes que tiene graves riesgos para la salud, la obesidad, ha aumentado considerablemente. Esto requiere repensar y actualizar conceptos básicos y conceptos relacionados con la prevención e intervención para mantener la salud física y mental.

Palabras Claves

Boxeo y actividad física – Obesidad femenina – Pérdida de peso – Salud – Prevención

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Developing an effective science-based conceptual paradigm modeling system is a key issue in seeking adequate strategies and constructing a modern vision to maintain the health status of the population. Recently, issues of resource limitation (material, technical, financial, etc.) are increasingly being discussed in our country as a factor in the deterioration of the nation's health status. In this sense, for us it is a priority task to find those opportunities that can overcome and compensate for the unfavorable factors contributing to the development of this problem.

In recent years, there has been an alarming trend towards increasing the number of obesity diseases worldwide. This problem is extremely important and up-to-date and is therefore the subject of research by a number of scientists, doctors, pedagogues, psychologists and others.

Because of the importance of the problem of overweight and body fat regulation, we have set the goal of developing an accessible and efficient modeling system for body transformation.

As a solution and in order to prevent this chronic metabolic disorder, we have created and empirically demonstrated the effectiveness of the modified fitness-boxing method as a means of burning unnecessary body fat and shaping a beautiful and aesthetic body.

Bulgarians practice sports less and less often compared to the population of other EU Member States: 58% do not practice sports at all; and 13% of Bulgarians do sports at least once a week, compared to 40% in the EU.¹

A survey of the socio-demographic characteristics of the sports population for the 2004-2011 season shows that 21.3% of the population over 12 years of age spends an average of 5.3 hours per week on sports. Overall, the share of sports people and time they spend on sports kept levels in the survey period (+/- 5%). The main trend is a marked decrease in the number of sports people and the time spent on sport with increasing age. The most active group is the 12-44 year-old, mostly male, inhabitants of the larger cities, students and workers, with a higher level of education and income.²

Training process in this methodology successfully solves the problem of maintaining good muscle tone. Systemic activities lead to significant energy expenditure, thus reducing body weight and burning unnecessary fat in the human body.

The aim of the study is to create and empirically prove effective fitness-boxing methodology as a modeling tool for body transformation.

To accomplish the goal, the following tasks need to be fulfilled:

1. To analyze the specificities of boxing and fitness as special types of motor activity, focused at burning unnecessary body fat and shaping a beautiful and aesthetic body;

¹ S. Kapralov, Metodologiya i teoriya na promenite v obshtestvoto i upravlenieto na fizicheskoto vazpitanie i sporta. Nays AN EOOD Blagoevgrad, s. 52-53. 2017.

² S. Kapralov, Teoretichen model za strategicheskoto planirane razvitiето na sporta v Republika Balgariya, Nays AN EOOD, Blagoevgrad, s. 65-68. 2017.

2. Create fitness-boxing methodology;
3. Empirically prove its effectiveness in modeling body composition among 18-38 year old women;
4. Analyze the results obtained.

The subject of the study is the anthropometric changes in 18-38 year old women, following the fitness-boxing method for body transformation.

Study contingent is 207 women aged 18-38, who underwent a modified fitness boxing procedure during the period 2013-2019. The duration of the training was 16 weeks, with the contingent training 5 times, every week. The training is 80 minutes long.

Fitness-Boxing method

Recently, in sport halls popular are complex methods such as tae-bo, body attack, body pumping, cross fit, etc.

Combined Fitness- Boxing method aims at developing the whole body and focusing on problem areas.

The combination of predominantly anaerobic motions through boxing (35-40 minutes) and exercise in the gym (20-25min.) allow high-intensity loading of all muscle groups in the body with high energy expenditure.

As we have already pointed out, fitness-boxing is an extremely dynamic methodology aimed at intensive training for the whole body. The high intensity of the workout, along with short breaks (between series), prevents the blood lactate form dropping, just when it is in its peak.

Boxing is characterized by complex, mostly a cyclical motor activities, which are performed under the conditions of a dynamically changing environment of continuous transition from phase attack to phase protection.³ This feature is extremely effective in reducing body fat. Boxing moves are multi-faceted and relatively easy to implement in a training environment, allowing overweight people to successfully practice this sport without health risk.

By its nature and specificity it belongs to acyclic sports, i.e. to those that are characterized by constant regulation and continuous movement under extremely dynamic conditions. This requires rapid coordinated changes in the central nervous system. The arsenal of trainee has automated motoring action in the form of individual skills and formed driving habits performed in the form of complex co-ordination. These occur in response to the boxing exercises and the individual movements of the opponent during the training.⁴

Boxing exercise is characterized by short duration, high intense activity, which requires significant muscle work, energy expenditure and thus reduces body weight and burns unnecessary fat in the human body.

³ B. Kalpachki, "Diagnostic and evaluation system for selection of 13-15 year boxers", Revista Europa del Este Unida num 6 (2018): 08-23.

⁴ B. Kalpachki, Sistema za diagnostika i otsenyavane pri podbor na 13-15 godishni boksyori. (Disertatsiya), Yugozapaden universitet „Neofit Rilski“, Blagoevgrad: 259 s. 2018.

Boxing is predominantly anaerobic, acyclic and extremely dynamic sport, where the complex driving actions of competitors alternate at relatively short intervals (with exceptionally high or lower intensity) under the conditions of a dynamically changing environment of continuous transition from phase attack to phase protection (and vice versa).⁵

This type of action pattern and short breaks between the rounds require well-developed anaerobic endurance to meet the energy requirements of this activity in an appropriate manner.

Fitness as a term has been widely disseminated in recent years. In the present method we have borrowed basic - multistage fitness exercises with free weights or fitness equipment. The exercises were adapted to the individual trainer's specificities in order to prevent injuries and maximize the effect.

Obesity

In the context of the new realities of life, the prevalence of obesity worldwide is increasing and there is a need for new, safe and effective weight-loss strategies.

This problem is extremely important and up-to-date and is therefore the subject of research by a number of scientists, doctors, pedagogues, psychologists and others.

The cause of obesity can be found in the complex integrative relationships of a number of genotypic and phenotypic factors that contribute to it.

In general, we can classify them as follows:

Genotypic (internal)	Phenotypic (external)
Genetic predisposition	Ineffective state policy
Illness	Insufficient hours of physical education and sports at school and university
Low nutritional culture	Competencies in the sports and pedagogical staff on the subject matter.
Decreased physical activity	Family
Stress	Media
	Poor quality of food and drink

Table 1

Genotypic (internal) and phenotypic (external) factors, cause of obesity

Physiological features of sports activities with women

From the position of the person-centered approach and the humanist tendencies in the modern sport, it is necessary to emphasize another aspect (too often neglected by the

⁵ B. Kalpachki, Discovering the sports talento in amateur boxing: from vision to reality, Rev. ODEP. Vol: 3 num 1 (2017): 96-105.

researchers), since health care is a priority in our development. It is necessary to note that women have specific morpho-functional and anthropometric indicators compared to men, and training with them, these features must be taken into account.

This necessitates special attention to some essential features of the female body and functions such as increasing the effect of training and preventing their harmful effects on the body.

There are different female structures in terms of structure and morphological function. Their individuality and characteristics are due to various endogenous (internal) and exogenous (external) factors.

Endogenous are in most cases are inherited or determined by the way of eating, the degree and nature of physical activity. Exogenous are external factors that influence such as: physical culture, environment, media, and so on.

Endogenous (internal)	Exogenous (external)
Genetic predisposition	Physical culture
Illness	Impact of the environment
Way of eating	Culture and Media
Physical activity	Family
Stress	School
Ideal for beautiful and symmetrical	Friends` environment

Table 2
Factors that affect body composition

Result Analysis

The study focuses on revealing the impact and effectiveness of fitness-box methodology as a tool for modeling the body.

To find the effectiveness of the fitness boxing modeling technique, we applied it to 207 women aged 18-38. The study was conducted in "Fitness Central" - Blagoevgrad in 2013-2019.

In it, we traced some anthropometric and quantitative changes in the body of the targeted contingent, as a result of active gymnastics activities, dosed according to individual characteristics 5 times a week.

The indicators we explored were: 1. Body circumferences (calf, thigh, hips, waist and shoulder (strong hand)); 2. Skin folds (measurement of Abdominal, Biceps, Triceps and Lower back); 3. Quantitative and qualitative indicators (BMI and weight).

The combination of predominantly anaerobic motions through boxing and specific boxing exercises (ropes, dumbbells, elastics, etc.) (35-40 minutes), and basic (multistage)

exercises with free weights (levers, swabs, dumbbells, etc.). Gadgets in the gym (20-25 min) allow for high-intensity loading of all muscle groups in the body with high energy expenditure and as a consequence the effect of these activities is significant in terms of positive changes in the composition of the 18-38 year old women.

The statistical processing of the data obtained from the conducted empirical study was carried out using the specialized software IBM SPSS Statistics Version 20. Statistical Package for Social Science (SPSS) is a computer program running in the Windows operating system environment specialized for the systematization, processing and analysis of statistical information. The output data from the measurements made it possible to carry out the statistical processing with a variety of methodologies which prove the objectivity and credibility of the conclusions drawn in the present study. The first stage of the statistical processing of the results is the performance of the variance analysis, which describes key statistical variables that allow the subsequent analyzes to be carried out in connection with the more in-depth revelation of the integrative relations and the dependencies between the phenomena explored.

Table 3 and Table 4 show the results of the variance analysis of the measurements before and after 16 weeks of active fitness training.

Median (Mean - M) and Standard Deviation were selected in the sample of 207 females (n = 207) aged 18-38 years.

The statistical values described, as an average value and a standard deviation reflecting the measure of the central trends in the measurements; allow subsequent analyzes to be carried out.

Before	Calf circumference cm	Thigh circumference cm.	Hip cm.	Waist cm.	Armpits circumference cm.	IBM kg/m ²	Abdominal MM.	Biceps MM.	Triceps MM.	Lower back MM.	Weight kg.
Mean -	39,11	64,19	107,50	95,18	31,18	28,39	27,32	13,22	26,84	29,00	74,73
Standard Error	0,27	0,45	0,66	1,01	0,32	0,34	0,64	0,26	0,47	0,63	1,20
Median	38,6	63,2	106	94	30	27,8	26	13	26	27	70
Mode	39	60	109	93	30	25	25	8	30	22	68
Standard Deviation - S	3,894	6,408	9,484	14,515	4,580	4,932	9,145	3,723	6,697	9,079	17,314
Sample Variance	15,17	41,06	89,95	210,67	20,97	24,33	83,64	13,86	44,84	82,43	299,77
Kurtosis - Ex	-0,33	-0,49	0,34	0,01	-0,49	0,13	-0,30	-0,49	-0,13	-0,47	0,13
Skewness - As	0,51	0,50	0,76	0,53	0,42	0,79	0,46	0,35	0,44	0,40	0,85
Range - R	17,5	29,2	48,7	68	20	19,16	38	15	32	37	78
Minimum - X _{min}	32	51,8	90,3	68	23,2	21	11	7	14	12	52
Maximum - X _{max}	49,5	81	139	136	43,2	40,16	49	22	46	49	130
Sum	8095,4	13286,9	22252,3	19701,7	6453,8	5877,23	5656	2737	5556	6002	15470,1
Confidence Level(99,0%)	0,70	1,16	1,71	2,62	0,83	0,89	1,65	0,67	1,21	1,64	3,13

Table 3
Indicators before active fitness training (n = 207)

After weeks	16	Calf circumference cm	Thigh circumference cm.	Hip cm.	Waist cm.	Armpits circumference cm.	IBM kg/m ²	Abdominal MM.	Biceps MM.	Triceps MM.	Lower back MM.	Weight Kg.
Mean -		34,75	56,14	94,51	70,47	24,29	21,47	14,68	7,53	15,36	16,76	57,66
Standard Error		0,19	0,28	0,40	0,70	0,22	0,20	0,45	0,17	0,30	0,42	0,63
Median		34,1	55	92,1	67,1	23,1	20	13	7	14	15	55
Mode		34	55	90	63	24	20	13	7	12	12	52
Standard Deviation - S		2,721	4,010	5,692	10,113	3,164	2,844	6,410	2,506	4,285	6,042	9,018
Sample Variance		7,40	16,08	32,40	102,28	10,01	8,09	41,08	6,28	18,36	36,51	81,32
Kurtosis - Ex		0,54	1,49	1,22	3,43	3,01	0,25	-0,54	-0,44	0,94	0,17	1,27
Skewness - As		0,58	1,39	1,43	1,76	1,68	1,11	0,64	0,47	1,04	1,03	1,24
Range - R		14	19,5	22	54	17	11,67	26	11	21	23	45
Minimum - X _{min}		30	50	90	60	21	18	4	4	10	10	49
Maximum - X _{max}		44	69,5	112	114	38	29,67	30	15	31	33	94
Sum		7192,4	11620,7	19563,3	14586,7	5027,3	4444,74	3038	1558	3180	3470	11935
Confidence Level(99,0%)		0,49	0,72	1,03	1,83	0,57	0,51	1,16	0,45	0,77	1,09	1,63
Variable coefficient- V%		7,831	7,144	6,023	14,352	13,027	13,247	43,674	33,294	27,891	36,046	15,641

Table 4

Indicators after 16 weeks of training according to fitness-boxing method (n = 207)

From the data you can see, that fitness-boxing method works for body transformation and burning of excess fat.

Indicator	Period	Calf circumference cm.	Thigh circumference cm	Hip cm.	Waist cm.	Armpits circumference Cm.	IBM kg/m ²	Abdominal MM.	Biceps MM.	Triceps MM.	Lower back MM.	Weight kg
Mean	Period before start	39,10	64,19	107,5	95,18	31,18	28,39	27,32	13,22	26,84	28,99	74,73
Mean	Period after 16 weeks of fitness-boxing method	34,75	56,14	94,51	70,47	24,29	21,47	14,68	7,53	15,36	16,76	57,66

Table 5

Comparison of the average values of the indicators before and after the implementation of the fitness-box methodology as a modeling tool

The average values of the indicators show a significant decrease after the implementation of the methodology. Particular impression is made of reduced body weight and reduced subcutaneous fat. The relationship in reduced circumference values (thigh, waist, hips) in combination with significantly reduced skin folds (Abdominal mm, Triceps mm and Lower back mm), as well as quantifiable indicators (BMI and body weight) the level of subcutaneous and visceral fat has been reduced with priority.

In practice, the successful reduction of body mass is aimed at reducing body circumference, combined with a reduction in body fat and body weight, which is evidence of successful fat burning rather than muscle mass.

When body circumference decreases, body weight also decreases, but skin folds increase, indicating that the body loses water and breaks muscle tissue, and these processes are undesirable when going through body modeling and excess fat burning.

Conclusion

In the recent years at world level there is an alarming trend in the dynamic development of the processes of globalization, industrialization and urbanization. The physical activity of the population is significantly reduced, which in turn leads to one of the most common metabolic disorders - obesity. As a solution and prevention of this chronic metabolic disorder we have created and empirically demonstrated the effectiveness of the modified fitness-boxing method as a means of burning unnecessary body fat and shaping aesthetic body.

Developing a modern, effective and science-based modeling system grounded on the latest conceptual paradigms is a key problem in seeking adequate strategies and constructing a modern vision to maintain the health status of the population. That is why fitness-boxing methodology will satisfy these requirements for the physical and psychological health of the population. In the present scientific research, we have proven its efficiency and recommended it as an effective tool for modeling the body.

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