47 - EFFECTS OF A BOXING TRAINING PROGRAM ON THE CORPORAL COMPOSITION AND MUSCULAR ENDURANCE

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INTRODUCTION

Boxing or pugilism are a combat sport that uses the fists, for attack or defense, should be pointed that this sport is constantly reinforcing its safety measures such as rules and equipment that converts it into a safe practice as we can see in the pan American games and the Olympics (Jako, 2010). Nowadays this type of sports has been evolving constantly not only as a RING competition, today we have several communities projects with the aim of reintegrate teenagers in social risk. Boxing also made room at the fitness gym and have been growing significantly and has been practiced with the intention to improve the quality of life and population health, and also as a technic strategy to dissipate the stress (UNANIAN e SILVA, 2006).

Through the growth of this sport in Brazil aiming the Olympics and the popularization of boxing at gyms as a tool to improve the physical conditioning, is highly important the knowledge of the training effects to analyze its results and build solid and efficient coaching series.

Quesada (2010) affirms that a sports training in boxing is a special learning lesson in each session, since it is possible to learn something new in every competition and this is important to propose the work made every day. Paiva e Del Vecchio (2010) defines that the boxing training must develop the following physical abilities: aerobics, flexibility and strength related with localized muscular endurance, power and maximum strength. Falk e Pereira (2010), claims that boxing is an interesting alternate to develop physical abilities or to keep them for a longer time.

Boxing is a sport growing in the academies and public practiced by different ages, become important experiments that clarify the benefits to health and aesthetics, to enhance a safer sport for all practitioners.

OBJECTIVE

Investigate the effects of the boxing training program in the corporal composition and muscular endurance in beginners.

MATERIALS AND METHODS

This research was composed by 24 male subjects and female with ages between 18 and 35 years old, and all of them beginners at boxing. The involvement at this research was volunteer , after a consent agreement was signed and it was explained to begin the task.

The boxing classes were performed three times a week, with duration of 60 minutes in a total of 12 weeks of training. The group had classes who were divided in: 10 minutes of warming-up, with running exercises and jump rope; 10 minutes of a boxing “evolution” circuit which involves exercises as: arm flexion, abdominals, jumps, pitch of “medicine ball”, 30 minutes of boxing specifics as: shadowboxing, hit the punching bag, ceiling ball; and 10 minutes of relaxation.

The evaluation were made through the tests of: abdominal endurance, in which the subjects held a maximum of repetitions in one minute, he would have to have the hands at the his nape and lift-up the body and to touch his elbows on his knees. (POLLOCK & WILMORE, 1993);

Endurance test of superior limbs through the exercise of arm flexion where the subject must have his hand apart an inch from the shoulders, and down the body to touch his chest on the floor and lift-up for one minute to the maximum of repetitions. (POLLOCK & WILMORE, 1993); anthropometric tests: body mass, body height, body mass index, being the hip circumference, waist, arms, thigh and leg, skinfold – triceps, suprailiac and thigh are for female and the chest circumference, stomach, arms, thigh and leg; skinfold – pectoral, stomach and thigh are for male (JACKSON & POLLOCK, 1978).

Tests were applied at the begin of research and after 12 weeks behind verify and confirm data normality, was decided to use the test T of “Student” to paired samples, to compare the pre and post training variable. The level of significance was established in $p<0,005$.

RESULTS

TABLE 1: Description of the average body mass pre and post training.

	BM_pré	BM_pós	Dif_Abs	Var_%
Average	81,2	77,5	3,7*	0,1
S.D	16,0	12,7		

S.D, standard deviation; B.M, Body mass; Dif_Abs, absolute difference; Var %, percent change; * indicate significant difference between pre and post (P=0,05).

TABLE 2: Description of the average of fat percentage pre e post training

	% F_pré	%F_pós	Dif_Abs	Var_%
Average	22,1	18,8	3,2*	0,2
S.D.	6,0	4,7		

S.D., standard deviation; %F, fat percentage; Dif_Abs, absolute difference; Var %, percent change; * indicate significant difference between pre and post (P=0,05).

TABLE 3: Description of the average of fat body mass pre e post training

	FM_pré	FM_pós	Dif_Abs	Var_%
Average	18,3	14,6	3,6*	0,3
SD	7,2	4,6		

S.D., standard deviation; FM, fat mass; Dif_Abs, absolute difference; Var %, percent change; * indicate significant difference between pre and post (P=0,05).

TABLE 4: Descriptionof the average of lean body mass pre e post training

	Lm_pr	Lm_pós	Dif_Abs	Var_%
Average	62,9	62,8	0,0	0,0
S.D.	11,4	0,3		

S.D., standard deviation; LM, lean body mass,; Dif_Abs, Dif_Abs, absolute difference; Var %, percent change; * indicate significant difference between pre and post (P⩽0,05).

Tables 1,2,3 and 4 indicate that the program was effective for the participants' body composition inducing a decrease in body mass due to a reduction in the percentage of fat and maintain lean body mass.

Tables 5 and 6 show the effect of the program for testing the potency of neuromuscular trunk and upper limbs.

Table 5: Description of the average of abdominal (repetition) pre e post training.

	_pre	Ab_post	Dif_Abs	Var_%
Average	30,7	36,8	6,0*	-0,2
S.D.	7,8	10,2		

S.D., standard deviation; AB, abdominal; Dif_Abs, absolute difference; Var %, percent change; * indicate significant difference between pre and post (P⩽0,05)

TABLE 6: Description of the average of arm flexion (repetition) pre e post training.

	AF_pre	AF_post	Dif_Abs	Var_%
Average	22,1	29,4	7,2*	-0,3
S.D.	6,0	7,1		

S.D., standard deviation; AF, arm flexion; Dif_Abs, absolute difference; Var %, percent change; * indicate significant difference between pre and post (P⩽0,05).

Tables 5 and 6 show statistically significant improvements for potency testing for both abdominal muscles, as for the upper limb muscles.

DISCUSSION

Observing the results it can be realized in the anthropometric variables: fat percentage, fat mass and body mass suffered a statistically difference, which did not happened with the lean body mass. In the collected data related to neuromuscular factors (abdominal and arm flexion repetition) there was a significant improve comparing data pre and post training.

A study made by Chatterjee et al (2010), corroborates this study, where boxing is an activity that results a significant caloric loss, hence it works in favor of weight loss and esthetics. The same author made another study only with women that shown that boxing offers this advantage for being a dynamic and intense sport, where practically all body muscles are in action, offering almost a loss of 12kcal per minute.

In a study made by Bellinger et al (2010), 26 subjects were researched and it also corroborates this study, suggesting a caloric expenditure in high levels during a boxing training.

It can be seen that boxing if safe practiced and with trained professionals, it can be an activity that involves a large caloric loss and it is highly pleasured, however one must be aware to avoid lesions.

Besides the physical benefits involving boxing, it can be an important tool for social inclusion also acting educationally.

CONCLUSION

It concludes that boxing to this group, contributed in a positive manner to improve the body composition and the muscular endurance of the subjects. Showing that this modality do not need to be competitive, but can also offer life quality to the students that search for a healthy life style.

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EFFECTS OF A BOXING TRAINING PROGRAM ON THE CORPORAL COMPOSITION AND MUSCULAR ENDURANCE

SUMMARY

This study was conceived to evaluate the effects of a training boxing program in the corporal composition and muscular endurance in beginners.

It was applied anthropometric and neuromuscular tests in twenty four persons, with age between 18 to 35 years old. The classes have had duration of 60 minutes for three times a week for three months.

The results show a noticeable improvement at the corporal composition related to the fat mass, fat percentage, and body mass and also related to neuromuscular area, an improve at the resistance of arm flexion and series abdominal. The results show a noticeable improvement at the corporal composition related to the fat mass, fat percentage, and body mass and also related to neuromuscular area, an improvement of the endurance of the arm flexion and in the abdominal repetition series.

KEYWORDS: Boxing; Corporal Composition; Muscular Endurance.

EFFETS D'UN PROGRAMME DE FORMATION DANS LA COMPOSITION CORPORELLE ET LA FORCE MUSCULAIRE BOXE

SOMMAIRE

La présente étude était d'évaluer les effets d'un programme de formation de boxe sur la composition corporelle et l'endurance musculaire des étudiants débutants. Pour cette finalité des testsont été appliqués anthropométriques et neuromusculaires de 24 personnes âgées entre 18 et 35 ans. Les classes ont durépendant 60 minutes trois fois par semaine pendant trois mois.

Les résultats indiquent une amélioration remarquable de la composition du corps sur la masse, le pourcentage de matières grasses et de masse corporelle et aussi sur l'améliorationneuromusculaire dans le cadre de la force de flexion du bras et la répétition de craquements.

MOTS-CLÉS: Boxe, La Composition Corporelle, L'endurance Musculaire.

EFECTOS DE UN PROGRAMA DE ENTRENAMIENTO DE BOXEO EN LA COMPOSICION CORPORAL Y FUERZA MUSCULAR

RESUMEN

El presente estudio tiene como objetivo avaluar los efectos de un programa de entrenamiento de boxeo en la composición corporal y en la fuerza muscular. Para ello fueron aplicados testes antropométricos y neuromusculares en 24 personas, con edades entre 18 y 35 años. Las clases tuvieran una durada de 60 minutos, tres veces por semana por tres meses.

Los resultados muestran una notable mejoría en la composición corporal relacionada con la masa gorda, porcentual de gordura, masa corporal y también relacionada a la zona neuromuscular, con mejoría en la resistencia de la flexión de brazo y repeticiones abdominales.

PALABRAS-CLAVE: Boxeo; Composición Corporal; Fuerza Muscular.

EFEITOS DE UM PROGRAMA DE TREINAMENTO DE BOXE NA COMPOSIÇÃO CORPORAL E RESISTÊNCIA MUSCULAR

RESUMO

O presente estudo teve como objetivo avaliar os efeitos de um programa de treinamento de Boxe na composição corporal e resistência muscular de alunos iniciantes. Para isso foram aplicados testes antropométricos e neuromusculares em 24 pessoas, com idade entre 18 e 35 anos. As aulas tiveram duração de 60 minutos três vezes por semana durante três meses.

Os resultados indicam uma melhora notável na composição corporal relativa a massa gorda, percentual de gordura, e massa corporal e também relativo a parte neuromuscular, melhora na resistência de flexão de braços e repetição de abdominais.

PALAVRAS CHAVE: Boxe; Composição Corporal; Resistência Muscular.