The impact of boxing training on the physical condition of first-year students

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Postgraduate student **A.O. Chuzhinov**[1]
PhD, Associate Professor **O.V. Timofeeva**[1]
PhD, Associate Professor **E.A. Lubyshev**[1, 2]
PhD, Associate Professor **O.O. Fadina**[3]
[1]Peoples' Friendship University of Russia named after Patrice Lumumba, Moscow
[2]Moscow State University of Sport and Tourism, Moscow
[3]Omsk State Technical University, Omsk

Corresponding author: olgtimofeeva@mail.ru

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Abstract

Objective of the study was to empirically assess the impact of boxing-specific training on the physical fitness of first-year students.

Methods and structure of the study. The educational experiment was carried out at the Patrice Lumumba Peoples' Friendship University of Russia over the course of one academic year. The participants were first-year students from the Faculty of Physics, Mathematics, and Natural Sciences, with a total of 450 students. At the start of the academic year, we formed two groups: an experimental group and a control group. Each group consisted of 20 students, for a total of 40 students. We used a questionnaire to select the participants for the experiment.

The experimental group focused on boxing. They learned the basic punches of a boxer and incorporated blocking techniques to enhance their special and general physical fitness. At the end of the academic year, we organized boxing competitions to determine the winners among the students in the experimental group. Meanwhile, the control group followed the general physical training program.

Results and conclusions. At the end of the experiment, more significant reliable changes in the level of physical fitness were obtained in the students of the experimental group (boxing). Based on the results obtained, it can be stated that classes in the experimental group using the boxing specialization more effectively affect the level of physical fitness of male students, which indicates the feasibility of using this type of sport in the framework of physical education classes at the university. In the experimental group (GPP), there were also reliable changes, but with a smaller tendency and not for all the indicators under consideration.

Keywords: *physical fitness, students, boxing, physical education.*

Introduction. The younger generation in the third millennium sets new benchmarks for itself, focused on improving the level of physical development, endurance and general fitness. It is possible to achieve these qualities only through persistent work on oneself with high physical potential [1]. At the same time, in the conditions of modern education, negative trends are observed associated with a low level of responsibility for one's own health, which is reflected in the level of physical fitness and entails a low level of physical development.

According to the draft strategy for the development of physical education and sports in the Russian Federation until 2030, one of the main tasks is: "Ensuring further development of the subject "Physical Education" in the system of higher education in order to strengthen and maintain the health of student youth[1]. To attract students to the subject of physical education, a large arsenal of various types of motor activity is used, which is constantly supplemented by various sports previously not used in the process of physical educa-

[1] Proyekt Strategii razvitiya fizicheskoy kul'tury i sporta v Rossiyskoy Federatsii do 2030 goda. Available at: https://minsport.gov.ru/activities/proekt-strategii-2030/ (date of access: 15.09.2020).

tion. This trend allows students to make a choice and engage in the type of motor activity they like. Boxing is one of the most popular sports for young men, it places high demands on physical fitness, develops a real masculine character, the will to win. Doing this sport contributes not only to increasing the level of physical development and fitness, but also to the acquisition of discipline, responsibility, increased self-esteem, overcoming complexes, identifying leadership qualities and the desire for success, which enables students to realize their needs in achieving sports results [2, 3].

Objective of the study was to empirically assess the impact of boxing-specific training on the physical fitness of first-year students.

Methods and structure of the study. The pedagogical experiment was conducted at the Department of Physical Education and Sports of the Peoples' Friendship University of Russia named after Patrice Lumumba. First-year students of the Faculty of Physics, Mathematics and Natural Sciences (n=450) took part in it. At the beginning of the academic year, students' interests in physical education were identified using a questionnaire (Figure 1). As a result, two homogeneous groups were determined for further research: experimental (boxing) and control (GPP), with 20 students in each group (n=20). The pedagogical experiment was conducted during one academic year, within the structure of the educational and training process, classes in both groups were held twice a week for two academic hours. Educational and training classes of the experimental group were held in the boxing specialization, where the main basic punches of a boxer were studied, which were supplemented by blocks on the development of special and general physical training. At the end of the academic year, boxing competitions were held to identify the winners among the students of the experimental group. In the control group, students were engaged in a general physical training (GPT) program.

To determine the indicators of physical fitness of first-year male students, control tests were used to determine the level of physical qualities (see table).

Results of the study and discussion. In order to identify interests in conscious physical education, all first-year students (n=500) were offered a questionnaire to choose a specialization (see figure).

The analysis of the questionnaire conducted on the choice of sports specialization showed the following results: training classes in the boxing specialization were chosen by 11% (n=55) of the first-year students, and classes in general physical training groups were also in demand, these classes were chosen by 12% (n=60). The remaining students who entered the first year for physical education classes chose other types of sports activities used at the Department of Physical Education and Sports at RUDN. Then, all students who

The results of the study of physical fitness of first -year students

Indicators	Testing stage	EG		CG		Reliability of differences p_0
		$\bar{X} \pm m$ n = 20	p_0	$\bar{X} \pm m$ n = 20	p_0	
3000 m run, s	1	14,2±0,2	<0,05	13,9±0,1	>0,05	>0,05
	2	13,7±0,1		13,5 ±0,1		>0,05
Shuttle run	1	10,9±0,8	<0,05	11,4±0,6	>0,05	>0,05
	2	8,3±0,1		10,5±0,3		<0,05
100 m run	1	16,4 ± 1,1	<0,05	17,1±0,9	>0,05	>0,05
	2	13,5±0,8		15,5±0.8		>0,05
Bending and unbending arms in a prone position for 1 min (number of times)	1	41±0,5	<0,05	41±0,4	<0,05	>0,05
	2	47±0,4		45±0,3		<0,05
Jumping rope for 1 min (number of times)	1	100±1,8	<0,05	98±1,9	<0,05	>0,05
	2	141±2,5		124±1,2		<0,05
Basic plank test, in minutes	1	2,1±0,3	<0,05	1,9±0,4	>0,05	>0,05
	2	2,9±0,2		2,2±0,1		<0,05
Pull-ups on a horizontal bar	1	13±1,3	<0,05	12±1,1	<0,05	>0,05
	2	20±1,1		17±1,2		>0,05
Hits on a bag for 3 min (number of times)	1	241±1,5	<0,05	242±1,6	>0,05	>0,05
	2	280±1,1		245±1,3		<0,05

Note: 1 – testing before the experiment; 2 – testing after the experiment; n – sample size; X ± m – arithmetic mean and mean error of the arithmetic mean; p_0 – reliability of the difference in the final values.

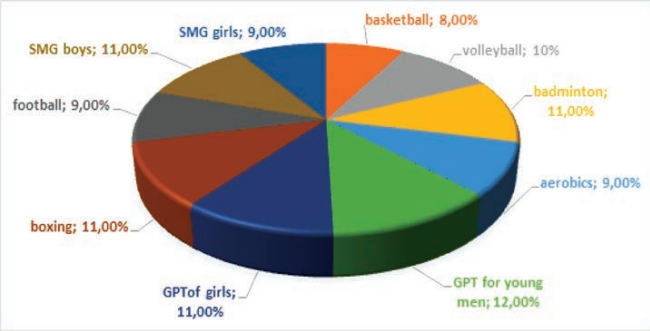

Figure 1. The ratio of interests of 1st year student by sports, n = 450

chose the boxing specialization (n=55) were asked to answer the second part of the questionnaire, where one student could choose several answers. The analysis of this questionnaire allowed us to establish that 84% (n=42) of students would like to improve their physical fitness, 70% (n=35) were interested in being able to stand up for themselves, 86% (n=43) of those involved wanted to gain confidence in their abilities and assert themselves, claiming that this factor is an important point reflecting success not only in sports, but also in the future professional work activity of a specialist. Further, 93% (n=47) of students believed that boxing classes can influence the formation of a strong character and gain willpower, while 95% (n=48) of students noted that boxing classes contribute to self-expression and help to throw out negative emotions. The results of testing the level of physical fitness at the beginning and end of the experiment allow us to speak about a significant increase in their level among students in the experimental group involved in boxing, whose indicators exceed those of those involved in the control group of general physical training.

When analyzing the shuttle run test, reliable changes were found only in the experimental group, where the growth rate was 23% ($p < 0,05$), while in the control group the indicator improved only by 8% ($p < 0,05$), (Table 1). Similar results were found in the 100-meter run test, in the experimental group this indicator statistically significantly increased by 18% ($p < 0,05$), while in the control group by 9% ($p < 0,05$). In the test of flexion and extension of the arms in support, reliable changes occurred in both groups, but with a greater tendency in the experimental group, which was 13% ($p < 0,05$), while in the control group only 9% ($p < 0,05$). Identical reliable results in both groups were obtained in the jump rope test, which amounted to 29% ($p < 0,05$) in the experimental group and 20% ($p < 0,05$) in the control group. In the experimental group, there were reliable changes in the «basic bar» test, the result improved by 27% ($p < 0,05$), while in the control group the result also improved by 13% ($p > 0,05$), these changes did not correspond to the reliable ones. In the pull-up test, reliable changes occurred both in the experimental and control groups, which corresponded to 35% ($p < 0,05$), and 29% ($p < 0,05$), respectively. Reliable changes in the «punches on a bag» test occurred only in the experimental group 14% ($p < 0,05$), these changes were expected, since the test in question is basic for students involved in boxing.

Conclusions. Thus, based on the obtained results, it can be stated that the use of boxing classes in the educational and training process has a more effective effect on the physical fitness of male students, which is confirmed by reliable changes in almost all the studied indicators.

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