

Taking into account the indicators of physical health and physical readiness of students in the development of the program of sectional classes in Thai boxing

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Purpose: assess the level of physical health and physical preparedness of students 17–19 years to develop a program of sectional classes in Thai boxing.

Material & Methods: analysis of scientific and methodological literature, pedagogical observation, pedagogical experiment, anthropometric, physiological methods of research, pedagogical testing of physical preparedness, express assessment of physical health by the method of G. L. Apanasenko, methods of mathematical statistics. The study involved 77 young students aged 17–19 years.

Results: obtained data during the experiment showed a predominantly low and below average level of physical health, as well as the lag of some physical qualities from age standards.

Conclusion: the evaluation of physical health and physical preparedness indicators of 17–19 years old boys testifies to the need to develop and implement training programs aimed at increasing the level of physical health and the development of physical qualities.

Keywords: students, physical health, physical readiness, sectional occupations.

Introduction

Physical education plays an important role in the preparation of a physically strong, hardened, healthy young generation, ready for high-performance work. At present, health is considered not only as a state of the organism, but also as a qualitative category that determines the operability, efficiency and reliability of a future professional. Definition of health is a necessary component of the educational process for physical education with the purpose of making changes and adjusting physical training [4].

In order to be able to solve this problem, the system of physical education of student youth should provide for the introduction of new effective methods that promote the development of psychophysical qualities, health promotion, increase in efficiency, functional capabilities of the cardiovascular, respiratory, nervous and other systems [3; 7].

According to specialists [5; 6], the traditional form of conducting physical education classes at the university does not help to increase students' interest in such activities, and, as a result, to improve their physical condition. Investigations of a number of authors [2; 8; 9; 10], a rather high efficiency of the sectional form of work with students has been proved. Recently in the youth environment various kinds of single combats are in great demand. Thai boxing is gaining popularity, which has a variety of effects on the body of those involved. That is why the development of programs for sectional classes in Thai boxing with student youth will have important theoretical and practical significance.

Relationship of research with scientific programs, plans, themes. The work is carried out according to the Consolidated Plan of Research Work in the Field of Physical Culture and Sports of the Ministry of Education and Science, Youth and Sports of Ukraine for 2011–2015. On the theme

3.6 "Scientific and theoretical basis of innovative technologies of physical education of different population groups" (state registration number 0111U001169) and according to the Consolidated Plan of research work in the field of physical culture and sports of the Ministry of Education and Science of Ukraine for 2016–2020 on the theme "Scientific and theoretical basis for improving the process of physical education that distinguish the game of a population" (number of state registration 0116U003010).

Purpose of the study: assess the level of physical health and physical fitness of students 17–19 years to develop a program of sectional classes in Thai boxing.

Material and Methods of the research

The study involved 77 male students aged 17–19 years, trained in 1–2 courses of the State Higher Educational Institution "Pridneprovsk State Academy of Civil Engineering and Architecture" in the specialties "Industrial and Civil Construction", "Enterprise Economics". Among the examined, 17-year-olds were found – 16 people, 18-year-olds – 36 people, and 19-year-olds – 25 people. The average age of the examined was 18,12 years. All the examined persons were referred to the main medical group due to their state of health.

In the course of the research, the following methods were used: analysis of scientific and methodological literature, pedagogical observation, pedagogical experiment, anthropometric, physiological methods of research, pedagogical testing of physical fitness, express assessment of physical health by G. L. Apanasenko's method, methods of mathematical statistics. The pedagogical experiment was conducted in the form of ascertaining and was intended to determine the level of physical health and physical readiness of students aged 17–19. The parameters of anthropometry (length, body weight) and the functional state of the body of students (VC,

HR, BP) were used to calculate the indices of physical health according to the method of G. L. Apanasenko. Pedagogical testing of physical preparedness included the determination of the results of tests for strength, speed, endurance, flexibility, speed-strength and coordination abilities. On the basis of the data obtained, indices of physical readiness were calculated by the method of T. Yu. Krutsevich.

Results of the research and their discussion

For the development of the program of sectional classes in Thai boxing in the conditions of a higher educational institution, we conducted a determination of the level of physical health and testing of physical preparedness of students.

To assess physical health, we used the method of G. L. Apanasenko, which involves calculating the mass-growth, strength, life indices, the indices of Robinson and Ruthie.

The average statistical results of each of the indexes for rapid screening of physical health for young men aged 17–19 are presented in Table 1.

According to the results of our study, the mass-growth index of young men corresponds to the average level with a value of 412,38 g·cm⁻¹(0 points). The life index has a value of 51,02 ml·kg⁻¹ and corresponds to a lower than average (1 point). The Robinson index was 80,55 c. u. and refers to an above-average (3 points). To restore the heart rate after 20 sit-ups for 30 s, the boys spent an average of 2 minutes 11 seconds, which corresponds to below average (1 point). The force index has a low level (0 points) with a result of 56,34%. The overall assessment of the level of physical health of students corresponds to below the average level and is 5,08 points.

Table 1
Indicators of physical health of students 17–19 years (n=77) by the method of G. L. Apanasenko

Indicators	\bar{X}	σ	V	m
Mass-growth index, g·cm ⁻¹	412,38	27,89	6,76	3,18
Life index, ml·kg ⁻¹	51,02	4,63	9,11	0,53
Robinson index, c. u.	80,55	5,70	7,08	0,65
Recovery time of heart rate after 20 sit-ups in 30 s, min, s	2,11	0,65	30,62	0,07
Strength index, %	56,34	5,71	10,14	0,65
Total points	5,08	2,53	49,78	0,29

The general assessment of the level of health of students according to the method of G. L. Apanasenko allows distribution of the examined young men into three groups according to the levels of somatic health (Fig. 1): low (45,45% of students); lower than the average (48,05% of students) and the average level (6,5% of students). A young man of 17–19 years old with a higher average and high level of physical health was not found by G. L. Apanasenko's method.

This distribution allows you to take into account the level of physical health in the selection of means and methods of physical training, as well as differentiate the physical load in the program of sectional classes in Thai boxing.

To assess the physical fitness of students aged 17–19 years, motor tests were selected, characterizing the development of speed, endurance, strength, flexibility, speed-strength and

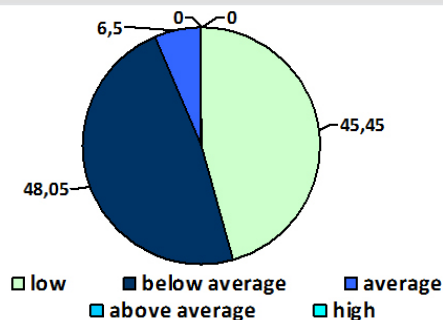


Figure 1. Distribution of students 17–19 years (n=7) according to the levels of physical health by the method of G. L. Apanasenko, %

coordination abilities. These are, respectively, the exercises: running 100 m, running 12 min, hand strength, push-ups, lifting the trunk into the seat in 1 min, torso forward from the sitting position, standing long jump and shuttle run 4x9m. The results of testing are presented in Table 2.

The results of the "100 m run" testify that the young men's speed is developed at a level above the average. The running speed was 14,34 s. Endurance also corresponds to a level above the average. For 12 min, the young men ran an average of 2,571,43 m. The car dynamometry index corresponds to a low level for young men of this age (41 kg), and the results of the force tests coincide with the lower average level of development of this quality. The students push-ups 37,99 times, lifting the trunk in a sitting in one minute – 43,52 times. Speed-power capabilities are developed at an average level. The "long jump" test was 215,25 cm. The average level of development also has agility and flexibility. The result of the "shuttle race 4x9 m" – 9,81 s, "torso forward from the sitting position" – 12,10 cm.

Table 2
Indicators of physical preparedness of students 17–19 years (n=77)

Indicators	\bar{X}	σ	V	m
Running 100 m, s	14,34	0,59	4,09	0,07
Running 12 min, m	2571,43	251,85	9,79	28,70
Hand dynamometry, kg	41,00	3,10	7,56	0,35
Push-ups, times	37,99	4,18	11,01	0,48
Standing long jump, cm	215,25	20,48	9,51	2,33
Shuttle Run 4x9 m, s	9,81	0,53	5,37	0,06
Lifting the trunk in the saddle for 1 min, once	43,52	5,36	12,33	0,61
Torsion of the trunk forward from the sitting position, cm	12,10	3,35	27,71	0,38

In order to determine the correspondence of the results of motor tests to the level of students' health, we calculated indices of physical preparedness by the method of T. Yu. Krutsevich, which are presented in Table 3.

The result of the Ruthie index was 10,49 conv. units, which corresponds to below average and is equal to 1 point for the system of rapid assessment of the level of physical preparedness. The force index corresponds to a low level with a result of 56,34% (0 points by the rating system). The result of the speed index is 3,94 c. u., which refers to the above average (3 points).

Speed-strength index scored 2 points on the express-assess-

Table 3
Indicators of physical readiness indices
(by methodology T. Yu. Krutsevich) students
17–19 years old (n=77)

Indicators	\bar{X}	σ	V	m
Index Ruthie, c. u.	10,49	2,56	24,39	0,29
Strength index, %	56,34	5,71	10,14	0,65
Velocity index, c. u.	3,94	0,20	5,08	0,02
Speed-strength index, c. u.	1,22	0,13	10,38	0,01
Total points	6,35	1,82	28,65	0,21

ment system with a result of 1,22 c. u. and corresponds to the average level. The total score was 6,35 points, on the average is equal to the average level.

The percentage distribution of students in the levels of physical preparedness, respectively, the indices of rapid assessment also showed that the largest number of boys 17–19 years of age have an average level of physical fitness (74,03%). Approximately the same number of young men have a lower average and higher average level of physical fitness (12,98% and 11,7% respectively). 1,29% of students have a low level of physical fitness. Not identified a single student with a high level. The results are shown in Figure 2.

Thus, the results of the motor tests and the calculation of the indices of the physical readiness of the students showed that the leading physical qualities in young men aged 17–19 years are speed and endurance. Students showed an above-average level of development of these physical qualities. The most lag behind the young men is strength. Test results are below the average level, and the power index is low. At a sufficient (average) level, the young men have developed speed-strength abilities, agility and flexibility. When developing a program of sectional classes using Thai boxing means with students, it is necessary to pay attention to the development of physical qualities, namely, to select exercises for the education of strength, speed-strength abilities, coordination,

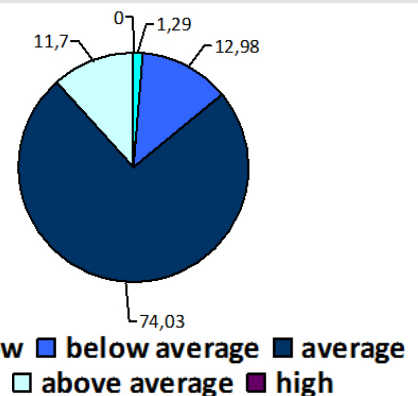


Figure 2. Distribution of students 17–19 years (n=77) according to the levels of physical readiness by the method of T. Yu. Krutsevich, %

and flexibility.

Conclusions

The results of the assessment of the indicators of physical health and physical preparedness of young men aged 17–19 testify to the need to develop and implement training programs aimed at improving these indicators. The data obtained during the experiment showed predominantly low and below average physical health, as well as the lag of some physical qualities from age standards. One of the ways to solve this problem is to develop a program of sectional classes in Thai boxing, taking into account the levels of physical health of students, which will allow selecting and differentiating the means of physical culture for increasing the functional indicators and directed development of physical qualities.

Prospects for further research in this area are the development of a program of sectional classes using Thai boxing for students, depending on the levels of physical health.

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