

Conclusion. When studying the level of physical fitness of students of the 1st stage of education, we stated that the poorly developed physical qualities in children are: speed and speed-strength abilities, as well as explosive qualities and flexibility.

In order to evaluate the effectiveness of the approach proposed by us, a pedagogical experiment was conducted, after which we stated a change in most indicators of the level of physical fitness of children from the EG compared to children from the CG ($p < 0.05$). Thus, we recorded statistically significant changes in the tests: 30 m run ($t=2.62$; $p < 0.05$), standing long jump ($t=2.85$; $p < 0.05$), forward tilt was ($t=2.14$; $p < 0.05$), throwing the ball from the spot ($t=2.14$; $p < 0.05$), shuttle run 4×9 m ($t=2.63$; $p < 0.05$).

Thus, the method of additional athletics lessons developed by us for children aged 8-9 attending the extended day group has shown its effectiveness in increasing the level of physical fitness of students and can be recommended for implementation in educational institutions, youth sports schools and other educational institutions.

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METHODS OF PHYSICAL TRAINING OF STUDENTS INVOLVED IN ARMWRESTLING

In the course of the study, a method of physical training of students involved in arm wrestling was developed and experimentally tested. The use of the developed methodology in the educational and training process of students engaged in armwrestling in the conditions of the university allows

you to effectively increase the level of their strength training and, accordingly, successfully train student armwrestlers for competitive activities.

The results of the study can be used in the field of physical culture and sports, in the process of planning the training process with students involved in arm wrestling at the university, as well as in sports sections and gyms.

In the modern theory and practice of sports, among the qualities of a human motor function, muscle strength is of the greatest importance for the successful implementation of sports activities [1–3].

Armsport as one of the means of physical education has received nationwide recognition for its accessibility and entertainment. Success in arm wrestling, as in any kind of martial arts, consists of many components: strength, speed, endurance, technique and tactics. It is especially popular among young people, although its dynamism and versatility allow people of any age to engage. The technical and tactical variety of methods of attacking actions allows everyone who trains hard to prove themselves, practically regardless of weight, height and other anthropometric indicators [5].

Armrestling, according to the direction of development of motor qualities, belongs to speed-strength sports. It equally combines and is of decisive importance both indicators of explosive strength and indicators of the development of statistical efforts. The main motor task of an armwrestler is to develop the maximum power of sports movement, that is, to develop maximum strength in the shortest possible time. From this it follows that the leading quality of armwrestlers should be the development of high rates of explosive strength.

In our opinion, methods from related sports are applied to the organization of the training process in armrestling, which do not have sufficient scientific justification and are, first of all, empirical in nature.

Thus, the resolution of the problem situation associated with the fragmentary development of methods and methodological recommendations available in the scientific and methodological literature on the strength training of students involved in armrestling in a university environment is relevant and timely.

Purpose of the study: theoretically develop and experimentally substantiate the methodology of physical training of students of higher education institutions involved in arm wrestling.

Research objectives:

1. To identify the level of physical fitness of students involved in arm wrestling.
2. Theoretically, to develop and experimentally test the method of physical training of students involved in arm wrestling.

Material and methods: analysis of scientific and methodological literature, control tests (tests), pedagogical experiment, methods of mathematical statistics.

Results and its discussion. The study was conducted on the basis of the arm wrestling sports section at the educational institution "Francisk Skorina Gomel State university". It was attended by 20 arm wrestler students aged 18 to 24, with 1-2 sports categories.

Arm wrestling is a single sport, where the sports result is the main criterion for assessing the level of sportsmanship and the quality of training.

In order to identify the level of physical fitness of arm wrestler students, we conducted a comparative test on the following control exercises: rope climbing for time (s); bench press (kg); flexion and extension of the arms in an emphasis lying down for 10 s (number of times); pull-ups on the crossbar with an overhand grip (number of times); carpal dynamometry (right hand) (kg); carpal dynamometry (left hand) (kg); hanging on the crossbar on a bent arm (right) (c); hanging on the crossbar with a bent arm (left) (sec).

The pedagogical experiment pursued the goal of experimental approbation and verification of the effectiveness of the methodology of physical training of armwrestler students.

The digital material obtained as a result of the study was processed by generally accepted methods of frequency statistics with the calculation of the following values: arithmetic mean of the variation series (\bar{X}), standard deviation ($\pm \sigma$), arithmetic mean error ($\pm m$). After making sure that the statistical

series are close to the normal distribution law, we decided to choose a statistical test in favor of Student's t-test for related and unrelated samples, choosing the appropriate significance level (p). For statistical analysis, software packages IBM SPSS Statistics v.24, StatSoft Statistica v.10.0 were used.

The practical implementation of the characteristics obtained was expressed by comparing the mean values of the control and experimental groups, determining the significance of differences (Student's t-test) and the significance level ($p < 0.05$, $p < 0.01$, $p < 0.001$).

Each of these control exercises is an informative test due to the similarity of the movements performed in it with the movements in certain wrestling techniques.

The method of physical training developed by us for students-arm wrestlers was designed for 5 months and introduced into the educational and training process of the sports section in arm wrestling at the educational institution "Francisk Skorina Gomel State university" (Gomel, Belarus). At the same time, physical activity was dosed depending on the level of physical fitness of armwrestler students.

In the first week of training, physical activity was minimal. It was aimed at strengthening the muscles of the shoulder girdle. After a month of training, the load was dosed up to 40% of the maximum. On the third-fifth months of training, the dosage of physical activity approached 60% of the maximum, depending on the level of physical fitness of armwrestler students.

So, "hand training" was aimed at strengthening the ligamentous apparatus of the hands. The sequence of exercises is aimed at strengthening the muscles of the hand (finger flexors, wrist flexors, thumb extensors and abductors), forearm and shoulder girdle (pronator round, brachioradialis, finger flexors and extensors, wrist flexors and extensors, biceps brachii). Depending on the number of repetitions or approaches, the load for arm wrestlers with I-II sports category varied.

Workout "Back + hand" is aimed at strengthening the ligamentous apparatus of the muscles of the back and hand using the technique of fighting through the "top + hook". The sequence of exercises was designed to strengthen the muscles of the hand (finger flexors, wrist flexors, thumb extensors and abductors) and back (lats, teres major, teres minor, trapezius, and lower back muscles). In the first week of training, physical activity was minimal. It was aimed at strengthening the muscles of the back and hand. After a month of training, the load was dosed up to 40% of the maximum. On the third-fifth months of training, the load dosage approached 70% of the maximum, depending on the level of physical fitness of armwrestler students.

The exercise for the muscles of the forearm is performed in the initial position sitting on the bench, so that the hand lies with its back surface on the bench, we unbend the hand and lower the barbell onto the phalanges of the fingers, then we bend the hand to its original position.

Workout "Chest + Triceps" is aimed at strengthening the ligamentous apparatus using the muscles of the chest and the triceps muscle of the shoulder (the technique of fighting through the "side"). The sequence of exercises was designed to strengthen the muscles of the chest (pectoralis major, minor, serratus anterior) and triceps brachii (long fasciculus "posterior", lateral fascia "outer", medial "inner"). In the first week of training, the load was minimal. It was aimed at strengthening the muscles of the chest and the triceps of the shoulder. After a month of training, the load was dosed up to 45% of the maximum. On the third-fifth months of training, the load dosage approached 70% of the maximum, depending on the level of physical fitness of the armwrestler students.

"Legs training + working out the technique of fighting in the "up" way is aimed at strengthening the ligamentous apparatus of the muscles of the legs using the technique of fighting through the "up" (starting position in arm wrestling), a training fragment. The sequence of exercises was designed to strengthen the muscles of the legs (muscles of the front and back of the thigh, glutes and muscles of the back of the leg) and the arms, working in the starting position in the "up" way of fighting (flexors of the fingers, flexors and extensor of the wrist, extensors and abductors of the large finger; pronator round, brachioradialis, biceps brachii). In the first week of training, the load was minimal. It was aimed at strengthening the muscles of the legs and arms, working in the starting position in the "up" way of fighting. After a month of training, the load was dosed up to 40% of the maximum.

To test the hypothesis about the effectiveness of the developed method of physical training of students involved in arm wrestling, its experimental approbation was organized.

During the pedagogical experiment, its participants were divided into two groups: the EG (10 people) and the CG (10 people). Classes in the EG for students were held according to the methodology of physical training developed by us, while classes in the CG were conducted according to the methodology used in groups of general physical training according to the curriculum.

Classes with subjects from the EG and CG were held four times a week: Monday, Tuesday, Thursday, Friday. The duration of each training session was 90 minutes.

The results of testing at the beginning of the pedagogical experiment among students from the EG and CG did not reveal statistically significant differences in the indicators of the level of strength fitness ($p>0.05$).

At the beginning of the pedagogical experiment, the students of the EG and CG groups had no statistically significant differences in the indicators of the level of strength fitness ($p>0.05$).

Table 1 – Indicators of the level of physical fitness of arm wrestlers from the EG and CG after the end of the pedagogical experiment

№ p/p	Control exercise	EG (n=10) $\bar{X} \pm m$	KG (n=10) $\bar{X} \pm m$	t, p
1	Rope climbing for time, s	6.88±0.42	6.89±0.43	t=0.25; p>0.05
2	Bench press, kg	101.75±3.56	90.72±3.39	t=2.24; p<0.05
3	Flexion and extension of the arms in an emphasis lying for 10, s	20.10±0.75	16.60±0.73	t=3.33; p<0.01
4	Pull-ups on the bar with an overhand grip, number of times	23.30±0.87	16.60±0.87	t=5.44; p<0.001
5	Hanging on the crossbar on a bent arm (right), with	11.36±0.61	6.10±0.48	t=6.80; p<0.001
6	Hanging on the bar with a bent arm (left) (sec)	9.48±0.50	6.14±0.35	t=5.46; p<0.001
7	Carpal dynamometry (right hand), kg	66.70±2.68	54.40±2.28	t=3.50; p<0.01
8	Carpal dynamometry (left hand), kg	60.90±2.13	50.80±1.72	t=3.69; p<0.01

It follows from Table 1 that at the end of the pedagogical experiment, we recorded significant differences in favor of the EG athletes: bench press (t=2.24; p<0.05), flexion and extension of the arms in the lying position for 10 s (t=3.33; p<0.01), pull-ups on the bar with an overhand grip (t=5.44; p<0.001), hanging on the bar on a bent arm - right (t=6.80; p<0.001) and left (t=5.46; p<0.001), carpal dynamometry - right (t=3.50; p<0.01) and left (t=3.69; p<0.01).

Table 2 – Reliability of the dynamics of indicators of the level of physical fitness of armwrestlers from the EG and CG for the period of the pedagogical experiment

№ p/p	Control exercise	EG		KG	
		Growth, %	Reliability (t, p)	Growth, %	t, p
1	Rope climbing for time, s	4.85	t=0.53; p>0.05	1.42	t=0.15; p>0.05
2	Bench press, kg	8.85	t=1.60; p>0.05	1.34	t=0.25; p>0.05
3	Flexion and extension of the arms in an emphasis lying for 10, s	16.42	t=2.83; p<0.05	2.41	t=0.39; p>0.05
4	Pull-ups on the bar with an overhand grip, number of times	27.04	t=5.12; p<0.001	1.81	t=0.24; p>0.05
5	Hanging on the crossbar on a bent arm (right), with	46.04	t=6.78; p<0.001	1.31	t=0.12; p>0.05
6	Hanging on the bar with a bent arm (left) (sec)	35.13	t=5.41; p<0.001	0.98	t=0.12; p>0.05
7	Carpal dynamometry (right hand), kg	19.34	t=3.57; p<0.01	1.47	t=0.25; p>0.05
8	Carpal dynamometry (left hand), kg	17.41	t=3.87; p<0.01	0.79	t=0.16; p>0.05

Table 2 shows the reliability of the dynamics of indicators of the level of preparedness of armwrestler students over the period of the pedagogical experiment. Thus, the analysis of the results allows us to conclude that the students of the EG groups had a significant advantage in indicators ($p<0.05-0.001$), while the students of the CG groups showed unreliable changes ($p>0.05$) over the period of the pedagogical experiment.

Thus, the results of the analysis of the data of the pedagogical experiment on approbation of the methodology of physical training of students-armwrestlers allow us to conclude that its use in the educational and training process of students involved in armwrestling in the conditions of the university allows to effectively increase the level of their physical fitness and, accordingly, successfully to prepare students-arm wrestlers for competitive activities.

An analysis of the dynamics of the studied indicators over the period of the pedagogical experiment allows us to conclude that there is a significant advantage in the dynamics of indicators among the students of the EG groups ($p<0.05-0.001$), while the students of the CG groups have unreliable differences at the end of the pedagogical experiment ($p>0.05$).

We share the opinion of some authors [4] that the introduction of new methods of teaching the course "physical culture", including elements of power sports, carried out taking into account the physical culture and sports interests, the level of health and physical fitness of students, allows students to form motivation for physical improvement and a healthy lifestyle and will promote their physical development and health promotion.

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METROLOGICALLY AND IDEOLOGICALLY CORRECT RANKING SYSTEM OF ATHLETES IN MODERN PENTATHLON

The article deals with the problem of metrological and ideological correctness of the existing system of ranking athletes in modern pentathlon.

The authors have presented an alternative ranking system for the participants of the competition. The proposed ranking system meets the requirements of the ideology of this sport and is metrologically more correct than the officially operating one. The use of the ranking system developed by the authors provides a more even connection between the places occupied by athletes in the types of the program and the final place in the all-around in comparison with the current system in which such types as fencing and the combined relay are clearly dominant.

At present, modern pentathlon is one of the most intensively developing sports in the Republic of Belarus. Belarusian athletes, as a rule, are among the ten strongest athletes in the world. The greatest success was achieved by the representatives of the women's modern pentathlon.

The modern pentathlon has undergone so many changes over the past century that it has actually become a quadrathlon. Competitions in running and shooting were combined into one combined event. Thus, four types remained: fencing, swimming, horseback riding and a combined type.

However, the ideology of this sport remains the same. The winner must be an athlete who is most comprehensively developed in all pentathlon exercises. In accordance with the testament of the founding father of the modern pentathlon, P. Coubertin, this sport should present the world with an ideal, versatile athlete [1].

However, the ranking system of athletes in this sport is rather confusing and not fully substantiated metrologically. The scoring system is used. Moreover, the athlete is awarded points in each type of program according to different rules, which leads to incomparability and non-equivalence of the results (points) scored in the all-around events. In other words, 300 points in fencing is not equivalent to 300 points in swimming, riding, or combined form. The complexity of