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Theory & Practice of Physical Culture

Athletic training | Sport psychology | Academic physical education | Sport physiology

Sociological research in the construction of the foundations of the national doctrine of the development of sports culture

Currently, there is a need to develop and implement a national doctrine for the development of sports culture as a system of views and positions that establish vectors of development and forms of sportization of the country's social structures, as well as ways to solve a complex of problems at various levels of modern society and create prerequisites for the formation of a civilization of the future.

In the context of building the Doctrine, mastering the values of sports culture is its key position, which determines the possibilities and prerequisites for solving global problems such as demography, ecology, and national security.

The rationale for this provision is based on sociological studies examining the phenomenon of sports culture associated with the concept of sportization, within which the development of human motor and intellectual potential takes place on the basis of sports ideology and worldview in the new realities of the modern world.

The results of sociological research clearly demonstrate that modern trends in Russian culture could not but affect the growth of the priority of using the values of sports in national systems of education and upbringing of a person. In this regard, the role of the phenomenon of sports culture is actualized, taking into account the strategic challenges of the new reality

Goal setting defines the strategic directions of the national doctrine of the development of sports culture. Research shows that increasing the level of physical fitness of the population, ensuring high sports results, developing sports infrastructure, and forming a positive image of Russian sports in the world reflect the essence of the goals of all social institutions related to its development.

Sociological studies show that optimizing motor activity and maintaining a sporty lifestyle creates conditions for reducing morbidity, increasing the duration and improving the quality of life of people, and active longevity. The growth in the number of healthy children and youth provides a solution to the problem of forming the country's labor resources, reducing the demographic burden on the able-bodied population, which is currently an urgent national task.

To determine the strategic goals and mechanisms for the implementation of the Doctrine, it is necessary to take into account the attitude of various socio-demographic groups to new forms of employment, their content, the development of sports infrastructure, and staffing. Conducting specific sociological research reveals the socio-cultural potential of sports, identifies the needs for new forms of training sessions, ways of organizing a sports lifestyle, approaches to improving the personal qualities of those involved. Forecasting trends in the development of the sports industry can be the most important result of large-scale sociological research.

The systematization of the results of sociological research will serve as the basis for identifying innovative mechanisms for the implementation of the Doctrine aimed at improving the regulatory framework in the field of sports, developing a system for training sports personnel, increasing industry funding, expanding sports infrastructure, popularizing sports and a sporty lifestyle.

The willingness to "dress the country in sportswear" is one of the strategic goals of the national doctrine of the development of sports culture, which will allow in the near future to get away from the negative consequences of the development of civilization at the expense of the internal resources of each individual's body, as well as to build a new vector for the formation of a sports civilization of the future.

We invite scientists to publish the results of scientific research aimed at finding and studying the value meanings of physical culture and sports.

Editor-in-Chief of TPPC, Honored Worker of Physical Culture of the Russian Federation
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Theory and Practice of Physical Culture

Contents

Relationship of the structure of coordinational preparation and stability of competitive activity of female rhythmic gymnastics athletes

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Abstract

Objective of the study is to justify the introduction of new formats of cultural and sports events that ensure the growth of sports skills of gymnasts and allow, by taking into account the mechanism of interconnection of the structure of coordination readiness, to increase the stability of the competitive activity of female athletes in rhythmic gymnastics.

Methods and structure of the study. At the first stage, the mechanism of the relationship between the structure of coordination readiness and the stability of competitive activity of female rhythmic gymnastics athletes was identified. At the second stage, new formats of cultural, sports and public events were introduced, ensuring the growth of the sports skills of gymnasts. The study was conducted during 2021-2024. on the basis of the sports complex «Irina Viner-Usmanova Gymnastics Palace». More than 300 athletes of various levels of preparedness were examined.

Results and conclusions. Due to the variety of conditions formed by the specifics of the gala concert, unusual lighting and sound, different from those typical for educational, training and competitive events, athletes during rehearsals and, in fact, performances at the gala concert, had the opportunity to supplement the motor programs of the elements of competitive exercises with sensory ones. corrections that ensure the construction, coding and correction of movements of all limbs of the body relative to each other in the coordinate system of one's own body.

Keywords: *rhythmic gymnastics, structure of coordination readiness, sensory systems.*

Introduction. One of the pressing problems in the theory and practice of sports is the search for ways to determine the structure of training in accordance with the specifics of the sport, contributing to the achievement of athletes' preparedness, necessary and sufficient to ensure the competitiveness of sports teams of the Russian Federation in the international arena [2]. A decrease in the intensity of competitive practice among gymnasts due to restrictions related to COVID-19 in 2020-2021 and the exclusion of Russian gymnasts from participation in competitions under the auspices of the FIG from 2022 required the search for new formats of educational and training events that contribute to the formation of integral preparedness of female athletes, ensuring the growth of sportsmanship.

Objective of the study was to justify the introduction of new formats of cultural, sports and mass events that ensure the growth of sports skills of gymnasts and allow, by taking into account the mechanism of interrelation of the structure of coordination readiness, to increase the stability of the competitive activity of rhythmic gymnastics athletes.

Methods and structure of the study. The research protocol included a theoretical analysis and synthesis of scientific literature and documentary materials (competition protocols), pedagogical observation of the competitive activities of gymnasts, and analysis of video recordings of performances in cultural, sports and public events. At the first stage, the mechanism of the relationship between the structure

of coordination readiness and the stability of competitive activity of female rhythmic gymnastics athletes was identified. The data was obtained by the analyst of the department of scientific and methodological support of the Federal State Budgetary Institution «TsSP» O.A. Dveirina in the course of scientific and methodological support for the Russian national team. At the second stage, new formats of cultural, sports and public events were introduced, ensuring the growth of the sports skills of gymnasts. The study was conducted during 2021-2024. on the basis of the sports complex «Irina Viner-Usmanova Gymnastics Palace». More than 300 athletes of various levels of preparedness were examined.

Results of the study and discussion. Rhythmic gymnastics is a complex coordination (technical-aesthetic) Olympic sport in which female athletes compete in technical skill and expressiveness in performing complex body movements in combination with manipulation of objects (rope, hoop, ball, clubs, ribbon) to music. Everything must be presented in an imaginative artistic form for the audience to perceive the movements. The modern viewer expects complex, exciting, record-breaking and beautiful combinations [1]. Music and lighting have a great influence on the quality of gymnasts motor activity. The results of the analysis of the competitive activity of gymnasts made it possible to identify a decrease in the stability of performance when performing in unusual conditions (another hall, lighting, ceiling size, sound localization, the presence of a large number of spectators, etc.). This is especially noticeable among sports reserve gymnasts, who have the opportunity to compete with the strongest gymnasts in Russia in an international environment.

For the first time, the reasons for the decrease in stability were substantiated as a result of research conducted by employees of the GDOIFC named after. P.F. Lesgaft under the leadership of A.N. Krestovnikov, who confirmed that changes in information coming from the visual and auditory sensory systems affect the level of implementation of the motor program of a competitive exercise [3]. Consequently, it is advisable to look for a resource for increasing the stability of the competitive activity of female rhythmic gymnastics athletes in increasing proprioceptive sensitivity by developing the ability to coordinate muscle efforts, ensuring procedural accuracy in the supporting position, regardless of the information coming from telereceptors.

At the same time, among the means, methods and conditions of educational and training activities of gymnasts, difficulty or exclusion of visual control (an obvious reason for the occurrence of motor errors for practitioners), as well as difficulty or exclusion of auditory and proprioceptive control (as a cause of motor errors), are not widespread.

Based on the fact that at competitions in the sport «rhythmic gymnastics», judges evaluate the system of movements demonstrated by the gymnast, reflecting motor experience and the degree of mastery of elements, and the degree of mastery is the presence in the structures of the cerebral cortex of «motor programs» of elements and their connections, and as well as their number, it was decided to make changes and additions to the motor programs of the elements of competitive compositions, as prepared sets of basic commands and ready-made corrective subprograms that ensure the implementation of movement taking into account the current afferent signals coming from various parts of the central nervous system. For this purpose, a new format was used - gala concerts. The main idea of this format is to connect types of human culture through the integration of physical culture and various types of art into the event - temporary (dance, music, verbal art, poetry, cinema) and spatial (painting, graphics, sculpture, architecture, applied art, design). In accordance with the predominant genre of art used as a medium, the gala concerts were attended by members of the Russian rhythmic gymnastics team, athletes of the potential, immediate and current reserve, as well as representatives of dance sports, breaking, acrobatic rock and roll, acrobatics, aesthetic gymnastics and other sports, as well as stars of world opera, classical and pop music. This decision is based on the principle of complementarity (complementarity) as one of the most important methodological principles of science.

Rhythmic gymnastics is part of a group of sports for which all six forms of manifestation of coordination abilities are in demand and provide competitive activity. However, the leading form of manifestation of coordination abilities is the ability to coordinate muscle efforts in accordance with information coming from telereceptors and reproduced images of objects and phenomena [2].

Due to the various conditions formed by the specifics of the gala concert - unusual lighting and sound, different from those typical for educational, training and competitive events, athletes during rehearsals

and the actual performance at the gala concert had the opportunity to supplement the motor programs of the elements of competitive exercises with sensory corrections, providing construction, encryption and correction of movements of all limbs of the body relative to each other in the coordinate system of one's own body. This contributed to the targeted and preferential development of the ability to coordinate muscle efforts, ensuring procedural accuracy in the support position, regardless of the information coming from telereceptors. At the same time, the leading form of manifestation of coordination abilities remained the ability to coordinate muscle efforts in accordance with information coming from telereceptors and reproduced images of objects and phenomena, since gymnasts were required to accompany their performance with the music that sounded in the gala concert and reflect its semantic component.

To identify the degree of influence of the conditions formed by the specifics of the gala concert on the stability of the competitive activity of rhythmic gymnastics athletes, an analysis of the results of pedagogical observations of all-Russian level competitions for the period from 2021 to 2024 was carried out. The subject of observation was the implementation of motor programs of competitive exercises according to the following parameters: artistic value of the exercise; technical performance, difficulty of the subject; body difficulty. An analysis of the stability of the performances of leading gymnasts was also carried out. The trend is typical for the majority of athletes who took part in gala concerts during this period.

Conclusions. It has been established that the proposed format of gala concerts, which contributes to the addition of motor programs of elements of competitive exercises with sensory corrections that ensure the construction, coding and correction of movements of all limbs of the body relative to each other in the coordinate system of one's own body, has a positive effect on increasing the level of stability and performance skills of gymnasts, and compensates decrease in the intensity of competitive practice of gymnasts due to restrictions related to COVID-19 in 2020-2021. and the suspension of Russian gymnasts from participation in competitions under the auspices of the FIG from 2022.

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Comprehensive training of highly qualified athletes in beach volleyball

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Abstract

Objective of the study was to identify the features of complex training of highly qualified athletes in beach volleyball.

Methods and structure of the study. The scientific work was carried out from November 2022 to March 2023 with the participation of 24 beach volleyball players (control group - 12 people, experimental group - 12 people). For participants in the control group, the process of sports training was carried out traditionally, and for participants in the experimental group - using elements of the scientific and technological concept of complex training of athletes-players, promoting an increase in the power and intensity of the training process of beach volleyball players, an increase by 10% in the partial contribution of training exercises from the means of the fourth and the fifth training zones (heart rate during execution - 172 beats/min and above) in the total volume of training means.

Results and conclusions. The results of determining the level of physical fitness of athletes and the quality of their competitive activity are presented, the average group values of which can be used as a model for those players who want to gain a foothold in leading positions in domestic and foreign beach volleyball of the highest achievements.

Keywords: *beach volleyball, highly qualified athletes, comprehensive training.*

Introduction. One of the ways to increase the level of sportsmanship of highly qualified players in modern beach volleyball is the use of complex training means for athletes, the scientific and technological concept of which was developed by a group of teachers from the Kuban State University of Physical Culture, Sports and Tourism under the guidance of a candidate of pedagogical sciences, associate professor, dean of the faculty advanced training and retraining of personnel Kostyukova O.N. and is successfully used in sports games - basketball, volleyball, handball, table tennis [1, 2].

Objective of the study was to identify the features of complex training of highly qualified athletes in beach volleyball.

Methods and structure of the study. The study was conducted from November 2022 to March 2023 with the participation of 24 beach volleyball players (control group - 12 people, experimental group - 12 people), whose teams then entered the play-off stage of the finals of the Russian Beach Volleyball Championship 2023, where they became winners and winners, as well as participants in the 1/8 and 1/4 finals. 16 of the 24 athletes surveyed were members of the Russian national beach volleyball teams.

For participants in the control group, the process of sports training was carried out traditionally, for participants in the experimental group - using elements of the scientific and technological concept of complex training of athletes-players, promoting an increase in the power and intensity of the training process of beach volleyball players, an increase by 10% in the partial contribution of training exercises from the means of the fourth and fifth training zones (heart rate during execution – 172 beats/min and above) in the total volume of training means.

The complexity of the process of sports training of the surveyed beach volleyball players consisted in the use of training means of related sports (physical, technical and tactical training), as well as the use of modern technologies for transmitting information, activating and accelerating the processes of formation of the necessary motor skills and professional gaming competencies (theoretical, psychological, integral preparation) among athletes.

The partial contribution of complex training means was 10% of the total time spent on the process of sports training of the surveyed beach volleyball players.

The traditional training program for highly qualified beach volleyball players basically complied with the requirements of the Model Sports Training Program for the sport «Volleyball», the sports disciplines «volleyball» and «beach volleyball», developed by a team of authors under the general editorship of Yu.D. Zheleznyak. V.V. Kostyukova, A.V. Chachina (2016) based on the requirements of the Federal Standard of the Ministry of Sports of Russia (2013), for representatives of beach volleyball of the highest achievements [3].

Innovations in the developed 4,5-month comprehensive training program with a volume of 300 hours concerned the following:

a) the amount of time allocated for general physical training was reduced by 10,0 hours (3,3%);

b) the amount of time allocated for technical training was reduced by 5,0 hours (1,7%);

c) the amount of time allocated for psychological and theoretical training was reduced by 5,0 hours (1,7%);

d) the amount of time allocated for special physical training was increased by 10,0 hours (3,3%);

e) the volume of hours allocated for tactical training was increased by 5,0 hours (1,7%);

f) the volume of hours allocated for integral training was increased by 10 hours (3,3%).

In general, the cumulative changes of 30 hours (10,0% of the total training volume) were aimed at increasing the partial contribution of intensive training activity to the total time of volleyball training, which increased the opportunity to pay more attention to the development of mixed aerobic-anaerobic mechanisms providing energy for the muscle activity of beach volleyball players high sports qualifications necessary to obtain good sports results in this sport.

In the developed 300-hour comprehensive training program, implemented over 4,5 months, the set of changes made should cause a more pronounced developmental response of the systems and functions of the body of highly qualified beach volleyball players assigned to the experimental group.

Results of the study and discussion. The process of sports training of the surveyed beach volleyball players of the experimental (EG) and control (CG) groups had a varied impact on the level of physical fitness of the players (see table), as well as on the efficiency and effectiveness of their competitive activities.

As the study showed, the results of running from a place of 20 m over 4,5 months of training improved in the control group by 0,06 s, and in the experimental group by 0,18 s, which is three times more. The reduction in the time for performing the shuttle run of 45,3 m (the «Envelope» test) in the control group was 0,16 s, and in the experimental group – 0,73 s, which is also several times more in favor of the experimental group. The results of throwing a medicine ball weighing 1 kg from behind the head with both hands while sitting also indicate that in the experimental group the improvements were more pronounced than in the control group - 11 cm and 73 cm, respectively. Changes in the results of jumping tests confirm the previously stated pattern of more the pronounced impact of the developed training program for complex training in beach volleyball compared to the traditional one. Thus, the improvement in the results of standing long jumps in the control group over 300 hours of training was 6 cm, and in the experimental group - 18 cm, in standing high jumps – 1,7 cm and 5,7 cm, respectively. Thus, according to its battery of five physical fitness tests, the improvement in the EG was two to three times greater than in the CG. Moreover, according to two out of five criteria (40%), the differences in the level of physical fitness in the experimental group exceed those in the control group statistically significantly ($t = 2,34\text{-}3,06$; $p < 0,05$), which indicates the feasibility of using a developed, 300-hour training program of comprehensive training in the practice of working with highly qualified beach volleyball players in the preparatory and competitive periods of the annual cycle of sports training.

The experiment proved that regular purposeful training in beach volleyball for four and a half months in the amount of 300 hours according to traditional (control group) and developed (experimental group) programs causes a positive developmental training effect in the examined athletes of high sports qualifications (see table) . Their competitive activity becomes more effective and efficient: for example, the overall efficiency of serving increased by 0,8% in the control group and by 3,7% in the experimental group. At the same time, serve losses decreased from 9,0% to 6,2% among beach volleyball players who trained traditionally and from 9,1% to 5,3% among athletes who trained more intensively (EG). The above-described pattern can also be traced in the dynamics of other studied parameters of the quality of competitive actions of highly qualified beach volleyball players.

In general, if we evaluate the magnitude of improvements in the criteria for the effectiveness and efficiency of performing attacking and defensive game actions demonstrated in competitive conditions, then in the control group they will be one and a half to two and a half times less than in the experimental group.

Efficiency and effectiveness of competitive actions of highly qualified beach volleyball players from the control (CG - 12 people) and experimental (EG - 12 people), recorded during the pedagogical experiment – from November 26, 2022 (initial survey) to March 8, 2023 (final survey)

№ п/п	Groups, surveys, results / Indicators	Control group		Experimental group		$t_{3,4}$	$t_{5,6}$	$t_{3,5}$	$t_{4,6}$	$t_{3,6}$
		Initial survey (m±m)	Final survey (m±m)	Initial survey (m±m)	Final survey (m±m)					
Feed efficiency %										
1	Winning	6,8±0,76	7,3±0,81	6,9±0,92	7,9±1,08	0,45	0,70	0,08	0,44	0,83
2	Loss of feed	9,0±1,14	6,2±0,96	9,1±1,16	5,3±0,87	1,88	2,62	0,06	0,69	2,58
3	General	15,8±2,45	16,6±2,12	15,6±2,41	19,3±2,37	0,25	1,09	0,06	0,85	1,03
Efficiency of receiving the ball from serve %										
4	Positive reception	66,3±4,86	69,8±4,33	67,8±5,61	81,3±5,79	0,54	1,67	0,20	1,59	1,98
5	General	59,0 ±6,28	63,3±6,12	60,5±6,39	70,6±6,91	0,49	1,07	0,17	0,79	1,24
Efficiency of offensive strikes on the return %										
6	Winning	59,9±4,55	61,7±5,06	59,7±4,39	67,4±4,77	0,26	1,19	0,03	0,82	1,14
7	General	62,5±4,04	64,3±3,29	63,3±3,87	71,4±3,93	0,35	1,47	0,14	1,39	1,58
Blocking efficiency (n)										
8	Blocks per game (average)	3,3±0,26	3,6±0,31	3,4±0,40	4,1±0,53	0,74	1,05	0,21	0,81	1,36
9	Blocks per tournament	9,3±0,68	10,7±0,71	9,5±0,73	12,2±0,81	1,42	2,48	0,20	1,39	2,74
Defensive Performance (n)										
10	Balls per game (average)	4,2±0,40	4,7±0,43	4,1±0,39	5,8±0,52	0,85	2,62	0,18	1,63	2,44
11	Balls per tournament	21,4±1,69	23,7±1,80	22,1±1,62	27,8±1,87	0,93	1,58	0,30	2,30	2,54
Efficiency of counterattacks (replays) %										
12	Winning	36,5±10,55	37,7±9,36	36,9±7,88	45,3±8,66	0,09	0,72	0,03	0,60	0,64
13	General	68,8±5,11	70,3±5,26	69,1±5,34	79,0±5,99	0,20	1,23	0,04	1,09	1,30

Note: the values of indicators in shaded cells characterize statistically significant differences.

Among the 13 considered indicators of the quality of competitive actions of highly qualified beach volleyball players, four (30,8%) of the entire digital array) improved statistically significantly in favor of representatives of the experimental group. These include criteria such as service losses (2,58-2,62, $p<0,05$), blocking efficiency per tournament (2,48-2,74, $p<0,05$) and defensive play per tournament (2,30-3,12, $p<0,05$).

It is advisable to use these indicators for pedagogical control of the quality of training sessions in the preparatory and competitive periods of the annual process of sports training of highly qualified beach volleyball players.

Conclusions. The results of the pedagogical experiment made it possible to:

a) justify and experimentally determine the effectiveness of the developed program of comprehensive training for highly qualified beach volleyball players of 300 hours, implemented over four and a half months (from November 26, 2022 to March 8, 2023) and including a 30-hour block of innovations and corrections that increases intensity and effectiveness of training sessions;

b) identify the initial level and nature of the dynamics of the parameters of the physical status of athletes from the control and experimental groups who participated in the pedagogical experiment;

c) determine the nature of changes in the quality of attacking and defensive competitive actions of highly qualified beach volleyball players of the experimental and control groups in the preparatory and competitive periods of year-long training;

d) recommend the studied criteria of preparedness of the surveyed beach volleyball players, according to which statistically significant improvements were found during the pedagogical experiment, for use in monitoring the quality of the process of their sports training.

e) confirm the feasibility of applying the scientific and technological concept of complex training of player athletes in elite beach volleyball.

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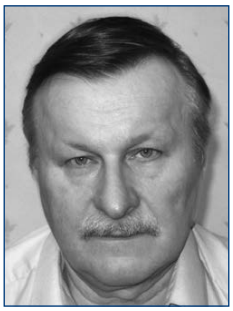
Management of the training process in cross-country orienteering on the basis of typical model characteristics of competitive activity and special preparation of the necessary norms

UDC 796.56



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Abstract

Objective of the study was to experimental justification of the methodical management of the training process of young orienteering athletes based on the use of typical model characteristics of competitive activity and special preparation of proper norms.

Methods and structure of the study. Scientific and methodical literature, reports and planning documents were analyzed in the scientific work. Also, a survey was conducted, in which qualified sportsmen (MS-CMS), specializing in cross-country orienteering, and coaches of various categories took part.

Results and conclusions. Developed and theoretically justified model characteristics for athletes 13-18 years old, specializing in running orienteering. The implementation of the obtained model characteristics in the activities of sports schools allowed to significantly increase the effectiveness of the formation of technical and tactical mastery of orienteering athletes at various stages of the long-term training process.

Keywords: *management of the training process, cross-country types of sports orientation, components of special preparation, model characteristics.*

Introduction. Currently, the priority directions of the state policy of the Russian Federation in the field of physical culture and sports include the preparation of sports reserves [4, 5].

Since the long-term training process in running orienteering has its own specific patterns, in contrast to the "model of the strongest athletes," the dominant factor in the intermediate models of young orienteers is the level of their special physical fitness and technical and tactical skill. Then comes the competitive activity model (CA), which reflects the features of spatial navigation in cross-country orienteering [1, 2, 8].

In accordance with modern concepts, the generalized basic model is divided into parts, which are arranged in order of importance at three levels. The leading place in the model is given to competitive activity, which mainly reflects the characteristic indicators of technical and tactical skill in a particular sport. Then comes the model of the athlete's special preparedness and the model of capabilities [6, 7].

In orienteering, the previously developed theoretical and methodological foundations of training need to be improved, including through innovative approaches to the management system of long-term training. Based on this, it should be noted that in various types of orienteering, the issues of using stage model characteristics of special preparedness are practically not covered, and there are no modern theoretical approaches to their substantiation. The solution to this problem determined the relevance of our research.

Objective of the study was to experimental substantiation of the methodology for managing the training process of young orienteering athletes based on the use of standard model characteristics of competitive activity and proper standards of special preparedness.

Methods and structure of the study. The study was carried out in three stages. At the first stage, scientific and methodological literature, reporting and planning documents were analyzed. A survey was also conducted (n=207), in which qualified athletes (masters of sports, candidates for master of sports), specializing in cross-country orienteering, and coaches of various categories (n=102) took part. The questionnaire contained questions related to assessing the level of influence of special preparedness factors on the effectiveness of competitive activity. At the second stage of the study, the features of competitive activity in running orienteering were studied based on the use of cartography methods, cartometry and visual descriptive analysis of competitive routes. During the testing process, the level of special preparedness of qualified (masters of sports, candidates for master of sports) orienteering athletes (n=140) aged 20-25 years was determined. At the third stage of the study, quantitative model characteristics were calculated for orienteering athletes of various ages.

Results of the study and discussion. Effective modeling is possible only from the standpoint of a systems approach, which, when applied to modeling problems, involves the use of the main components of control theory [3, 7].

Analysis of scientific and methodological literature and advanced practical experience shows that the development of model characteristics is primarily based on data on the influence of individual components of special preparedness on sports results. For this purpose, at the first stage of the study, we conducted a survey and identified the importance of various components of the special preparedness of orienteering athletes. Each of the experts had to answer the question about which of the factors (a total of 36 indicators were proposed for assessment) most influence the result in running orienteering (Table 1).

It has been established that the factors that most influence the effectiveness of competitive activity in cross-country orienteering are the technique of dynamic detailed reading of a sports map, special endurance and the level of mental stability. It should be noted that the opinions of trainers on the importance of special endurance are most uniform (V = 10,5%), and assessments of other leading indicators are more variable (V = 23,3-81,5%) for the reason that they are mainly based on self-assessment of competitive activity, and not on scientific research data.

It is well known that an essential part of the model of the strongest athlete is indicators of physical and intellectual preparedness. Based on this, when developing

Table 1. Information model of an athlete specializing in cross-country orienteering

Factors	Masters of Sports (n=94)			Candidates for Master of Sports (n=113)			Coaches (n=102)		
	M	σ	V,%	M	σ	V,%	M	σ	V, %
Card reading technique	3,2	1,8	56,2	4,1	2,3	56,0	3,4	2,5	73,5
Special Stamina	3,8	3,1	81,5	3,2	2,2	66,7	1,9	0,2	10,5
Mental Stability	3,1	1,4	45,1	5,1	2,3	45,0	7,7	1,8	23,3
Running technique	4,8	2,5	52,0	4,3	2,1	48,8	7,3	2,2	30,1
General Stamina	3,5	1,9	54,2	4,2	2,6	61,9	9,1	4,1	45,0
Operational thinking	5,0	1,9	37,2	5,8	2,5	43,1	5,1	2,2	43,1
Choosing a route between checkpoints	5,1	2,7	52,9	7,1	2,1	29,5	6,9	1,8	26,0
Switching attention	7,0	1,6	22,8	7,1	3,5	49,2	9,3	0,6	6,4
Sustainability of attention	7,1	3,1	43,6	5,8	1,9	32,7	9,0	1,9	21,1
Distribution of attention	8,0	1,7	21,2	6,4	2,3	35,9	9,2	0,7	7,6
Technique of movement in precise azimuth	6,8	2,8	41,1	6,5	2,9	44,6	9,6	0,3	3,1
Speed abilities	8,5	0,8	9,4	5,7	3,3	57,8	10,8	0,8	7,4
RAM	6,3	4,1	65,0	7,6	2,3	30,2	10,0	1,7	17,0
Visual-figurative memory	5,2	2,9	55,7	6,1	2,5	40,9	7,9	2,3	29,1
Speed-strength abilities	10,6	1,7	16,1	9,1	3,9	43,1	9,2	2,0	22,2
Coordination	11,5	1,1	10,3	9,8	2,7	27,8	11,4	0,3	2,9
Strength abilities	12,0	0,8	6,6	9,4	3,0	32,6	12,4	0,3	2,7

Table 2. Model indicators of special preparedness of qualified athletes specializing in running orienteering

Control exercises	Men (n=140)		Women (n=86)	
	MS	I category	MS	I category
Running 5000/3000 m, min, s	15:30	18:00	11:05	13:10
200 m uphill run, s	31.50	33.30	35.00	39.85
200 m downhill run, s	25.00	27.30	26.30	29.50
Cross 5000 m, min, s	17:00	21:00	18:30	23:30
Running 30 m on the move, s	3.48	3.81	3.66	4.21
5x standing long jump, cm	1290	1220	1080	1020
Complex strength exercise, number of times	52	50	45	40
Visual-figurative memory, points	14	11	14	11
Visual-figurative thinking, points	10	8	10	8
Operational thinking, points	9	6	8	5
Distribution of attention, s	76	82	73	80
Switching attention, points	58	51	64	60
Attention span, points	33	27	36	27
Sustainability of attention, with	104	126	100	106
Motor coordination, points	260	240	260	240

age model characteristics, at the second stage of the study, we studied the level of development of these indicators in highly qualified athletes aged 20-25 years, specializing in cross-country orienteering (Table 2).

Over the course of a number of years, indicators characterizing the patterns of competitive activity at the World, European and Russian Championships have also been studied and analyzed. For each of the studied indicators, representative samples of 30-35 people were obtained. Based on the characteristics of competitive activity in running orienteering, the most significant criteria influencing the achievement of high sports results have been identified. These model characteristics include: running speed at the level of the anaerobic threshold (5,4-5,2 m/s); distance extension coefficient (1,2-1,3); number of technical stops along the distance (2-3 per 1 km); duration of technical stop (3-4 s); marking speed at the checkpoint (2-3 s); accuracy of movement in azimuth (error 5-7%).

We used the criterion of basic values to calculate the proper standards. With this approach, the results of the preparedness of orienteers at the MS level are compared with the base value and expressed in relative values. Since in orienteering the time to cover a dis-

Table 3. Comparative data on the physical fitness of athletes of various qualifications specializing in running orienteering

Control exercises	Masters of Sports			Children's and Youth Sports School graduates (I sports category)		
	Result	m/s	CR	Result	m/s	CR
Cross 5 km, min, s (basic value)	17:22	**4.79**	1,000	21:11	**3.93**	1,000
Uphill run 200 m, s	31.78	6.29	1,313	37.19	5.40	1,374
Downhill run 200 m, s	25.30	7.90	1,649	29.51	6.77	1,722
Running 30 m on the move, s	3.52	8.52	1,778	3.91	7.67	1,951
5000 m run, min, s	16:09	5.15	1,075	20:09	4.13	1,050

Table 4. Model characteristics of physical fitness of athletes aged 17-18 years, specializing in running orienteering

Control exercises	Indicators	
	Boys	Girls
Cross 5000 m, min, s	20:00-20:30	23:30-24:00
Uphill run 200 m, s	35.90-37.33	39.44-41.64
Downhill run 200 m, s	28.61-29.75	29.96-33.76
Running 30 m on the move, s	3.78-4.12	4.43-4.65
Run 5/3 km, min, s	19:33-18:50	13:39-13:30
5x standing long jump, cm	1252-1464	1000-1200
Complex strength exercise, number of times	51-59	35-36

tance reflects the success of competitive activity only at a single start (i.e. there is no target indicator), the result of the test that has the highest connection (r = 0,896) with competitive activity was taken as a basis - this is the result of cross-country 5000 m race (Table 3).

The next step is to determine quantitative model characteristics. The calculation of the model standard for each exercise is carried out separately. In this case, the base value is multiplied by the coefficient of correlation (CR) and the model value is determined. The described approach was used to develop model characteristics of orienteers of various ages, for example, for athletes 17-18 years old (Table 4).

Thus, the method of mathematical modeling made it possible to determine the development trend of the leading parameters of the special preparedness of young orienteering athletes and to substantiate the main approaches to increasing the effectiveness of the training process.

Conclusions. n the practical application of model characteristics in the control system, the most productive approach is when, after a certain period of preparation, the degree of compliance of the orienteer with the class of leaders is determined. At each stage of long-term training, in accordance with the results of stage-by-stage control, it is analyzed whether the characteristics of sportsmanship belong to a certain range of values, if they fall into which the orienteer can become a leader. If they do not belong, then the athlete's chances of showing good results in the future are small.

The construction of the «leader-outsider» algorithm allows us to move from normative model characteristics of special preparedness to identifying qualitatively new relationships between the training process and sports results. In this regard, the system of comprehensive pedagogical control in running orienteering must strictly comply with the model characteristics both in content and testing methods.

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Optimization of the structure of special strength training in qualified athletes doing crossfitt

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Abstract

Objective of the study was to optimization of the structure of special strength preparedness among qualified athletes involved in crossfit.

Methods and structure of the study. Results of test tasks for special strength preparedness (barbell clean, barbell snatch, barbell bench press, barbell squat, shot throw with two hands back, 200 m run with a 30 kg load, standing triple jump, standing long jump, upward jump standing, pull-ups on the bar) in qualified athletes were determined using standard methods. 41 young men of the second and first sports categories, CMS Sports School of Moscow, took part in the research.

Results and conclusions. With the growth of sports skills, the levels of strength preparedness of those involved significantly increased, and the coefficients of variation decreased, the number of reliable relationships between indicators of special strength readiness decreased, and the specificity of the relationship structure also appeared. The work calculated the correlation coefficients of indicators of special strength readiness of those involved in various sports qualifications, and checked their suitability in the process of sports training. The importance of the optimal structure of special strength preparedness among qualified athletes involved in crossfit is traced.

Keywords: *crossfit, qualified athletes, special strength preparedness, structure and relationship of indicators, proportionality of characteristics.*

Introduction. Currently, qualified athletes involved in CrossFit exhibit mainly unbalanced development of indicators of special strength readiness [1, 2] due to the lack of productive training methods at the beginning of their sports career in this sport [3, 4]. Therefore, the development of a rational structure of special strength training for qualified athletes is relevant.

Objective of the study was to optimization of the structure of special strength preparedness among qualified athletes involved in crossfit.

Methods and structure of the study. Results of test tasks for special strength preparedness (barbell clean, bench press, barbell snatch, barbell squat, shot throw with two hands back, 200 m run with a 30 kg load, standing triple jump, standing long jump, upward jump standing, pull-ups on the bar) in qualified athletes were determined using standard methods. 41 young men of the second and first sports categories, CMS SDUSSHOR of Moscow, took part in the research.

Results of the study and discussion. According to our data, first-class athletes involved in CrossFit were significantly superior to second-class athletes in the following exercises: barbell clean (22,2%, $p<0,01$), bench press (20,2%, $p<0,01$) , shot throw with two hands back (17,0%, $p<0,05$), squats with a barbell (15,1%, $p<0,05$), 200 m run with a load of 30 kg (12,0%, $p<0,05$). In other tests characterizing strength abilities, an unreliable advantage was revealed for category I athletes.

Athletes who met the CCM standards had a significant advantage (compared with first-class athletes) in five (out of nine possible) indicators. At a one percent significance level, their differences were manifested in the results of bench press (18,3%), squats with a barbell (14,8%), and at a five percent significance level - in terms of barbell clean (17,6%), shot throw two

hands back over the head (16,8%), jumping up from a place (6,9%).

Thus, as the sports skills of those involved increased, the level of their special strength preparedness increased significantly and differences were noted in adjacent classification groups.

Analysis of the coefficients of variation showed that most of the characteristics of special strength preparedness among these athletes are homogeneous (does not exceed the 10% significance level). Only certain indicators (barbell squats, barbell snatch) among athletes of the second and first sports categories are variable. As athletic skill increased, the coefficients of variation decreased, indicating greater homogeneity of indicators among more trained athletes.

In athletes of the second sports category, six reliable relationships were identified between the characteristics of special strength readiness, and the significance of the complex strength indicator was clearly expressed. Among first-class athletes, five significant relationships have been identified between the characteristics of special strength readiness, and among men who have the sports qualification of Master of Sports, the indicators of special strength readiness are interrelated even more specifically, with a total of three relationships.

For second-class athletes, the results of competitive activity are interconnected with the indicators of the barbell snatch (r=-0,704), standing triple jump (r=-0,652), bench press (r=-0,648), for first-class athletes - with the barbell snatch indicators (r=-0,760), bench press (r=-0,680), among athletes who have fulfilled the standards of a candidate master of sports, these results are interrelated only with the barbell clean indicators (r=-0,796). Consequently, with the growth of sports skills of those involved, the number of reliable relationships between the results of competitive activity and the characteristics of special strength readiness decreased.

Based on the magnitude of the coefficients of proportionality of indicators, the characteristics of the proportionality of the special strength preparedness of athletes with a level of sports qualification from the second category to the CMS were determined. Using correlation coefficients, the proper standards for control exercises of strength readiness of athletes involved in crossfit were calculated.

Let's illustrate this with an example. The coach planned for the athlete to perform the first category, which can be achieved with a barbell press equal to 92,6 kg, a barbell squat – 144,3 kg, a barbell snatch – 75,4 kg, a standing long jump – 287 cm, a pull-up on the bar – 17,6 times.

We checked the objectivity of the developed indicators of the correlation between the indicators of special strength preparedness of those involved. For this purpose, we formed two groups of athletes (control and experimental) of the second sports category. For each young man in the experimental group, the proper levels of development of special strength qualities were determined.

In the initial examination, athletes (control group – 40,4%, experimental group – 42,2%) completed less than half of the special strength training standards we developed. Only those in the experimental group were tasked with increasing the number of completed commensurate normative indicators of special strength preparedness.

At the final examination (six months later) in this group, we identified positive changes in the structure of special strength preparedness (87,1% of the results were proportionate). In the final examination, this indicator did not change among athletes in the control group, although certain characteristics of special strength preparedness improved significantly.

The results of our study indicated that only those in the experimental group showed a significant increase (9,9%, $p<0,05$) in sports results in CrossFit; in the control group, these characteristics changed insignificantly (5,6%, $p>0,05$).

Conclusions. The proportionality of indicators of special strength readiness among qualified athletes involved in crossfit is an important condition for increasing further sportsmanship.

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Artificial intelligence in providing the first and second signal systems with polysensory information for precise coordination of volleyball players actions

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Abstract

Objective of the study was to justify the use of artificial intelligence in managing the process of precise coordination of the actions of volleyball players.

Methods and structure of the study. The scientific work used the technology of planning and monitoring the dynamics of development of the accuracy of coordination of the components of the first and second signal systems, the success of technical and tactical actions of volleyball players in training and competition conditions.

Results and conclusions. It was established that the use of artificial intelligence as a technology for managing the educational process in volleyball made it possible to create conditions for variability and increase the coordination of functional and motor systems; develop coordination abilities in leading sensory systems; stimulate the development of cognitive and intellectual qualities, accompanying the actions with objective and urgent information of the second signaling system; ensure an effective increase in the accuracy of technical and tactical actions and competitive game tension.

Keywords: *artificial intelligence, first and second signaling systems, sensory information, coordination accuracy, useful result.*

Introduction. Perception and reflection of the world, storage of important information, its analysis and control of actions are carried out by the coordination apparatus of sensory systems and the memory function. A feature of sensory systems is the high sensitivity of receptors. Excitation acts on sensory elements, the sensitivity of receptors increases, conditions are created for obtaining information about the accuracy of spatial, temporal and force parameters of actions and their implementation to achieve an important result. Processes in the body are information, and images are elementary, sensory-perceptual, secondary - these are spatio-temporal signals, particular forms of codes. Therefore, human activity is guided by images of special environmental influences. This is the basis for the mechanisms of training sensory systems to environmental influences [1, 2, 4, 6, 9, 11, 12].

To study human activity, it is necessary to understand how information flows in systems, what is the result, how to evaluate behavior that satisfies needs and reflects the mutual influence of the organism and the environment. On this, a model of behavior is built, the leading one for which is the non-change of the sensory system, and the significance of the function in achieving the result of the action, which the body compares with the model of the result and its code is formed, that is, the brain, reflects the output activity of the whole organism, and not individual systems [1, 5 , 7, 8, 10].

It is known that the perception of signals that do not have semantic restrictions depends on the capacity of the learner and on familiarity with the signals. To perform an action, the signal must carry information from the sensory systems, with the mechanisms of their sensitivity and interconnection, and then in verbal form. The level of coordination is determined by: the objectivity of information, the adequacy of its analysis according to the situation, the formation of speech

codes of the second signal system, the timeliness of the implementation of actions, taking into account corrections [1, 3, 5, 6, 7, 10].

Information analysis is the process of comprehending it and incorporating it into the system of knowledge and experience in solving problems. Action coordination training, together with the capabilities of the first and second signal systems, leads to an increase in the accuracy of the result and determines the effectiveness of technical and tactical training. This is the process of formation of knowledge, motor abilities, skills and a hierarchical control system, where each level ensures the implementation of an action of a certain complexity. In this regard, mechanisms of reverse afferentation with the participation of the first signaling system are identified as the basis for reflecting the world in sensory images - visual, auditory, vestibular, muscular, motor, with anticipation of corrections recorded by the human brain [1, 3, 5, 6, 7, 10].

The visual sensory system is a function of activity that provides orientation and behavior of a person in the environment. Its motor components carry the basis of the load in coordinating actions in space, perceiving in a range of speeds, sizes, and relationships. When analyzing the vision system, signals are isolated that lead from the encoding of pulse sequence information to a spatial (typological) code. Describing a signal with a set of features reduces information and facilitates the assessment of the parameters of motor landmarks in space and response actions. This suggests that vision in the coordination of actions leads to the following functions: signaling (environment, target position), direct communication; control (action execution) feedback. The final result of visual perception is a subjective image of a real object [1, 2, 5].

The vestibular sensory system is an organ of balance, plays a role in taking basic postures, positioning the head and body, participates in the formation of the fund of movements, ensures coordination in space, and configures other systems to perform a motor task. This gives the vestibular system a leading role in behavior and in the development of sportsmanship [1, 5, 7].

The auditory sensory system is a meter of movements in time - rhythm, tempo of actions and the «individual minute». Hearing evaluates the accuracy of coordination of actions over time, reducing errors. An effective method for developing a sense of time is to count by ear using precise time references. The athlete plans the technique and tactics of actions, rearranges them, anticipating time points [5, 6, 7].

The musculoskeletal system plays a role in sensory formations that transmit information about movement - joint position, muscle length and tension. The accuracy of muscle efforts is associated with the optimal tone of the nerve centers and the functioning of the motor analyzer. For the central nervous system, the ratio between sensory input and motor output is on average 10:1. Therefore, when managing actions, it is important to use means and methods of reducing the number of effector parameters and simplifying information analysis [1, 10, 12].

The second signaling system is words and speech that replace conditioned stimuli, a means of human self-government. It was formed thanks to the word, as a tool for orientation and general reflection of the world in concepts, symbols, and images. Words are distinguished from the first signals by sound, visual image, and semantic meaning. It is this meaning of the word that refers to the second signal system, which reflects the properties of objects and phenomena. Speech is the ability of a person to communicate using words with their meanings, sounds and signs, based on vocal, auditory, visual and manual skills. The function of external speech is expressed in its translation into internal mental speech that regulates behavior. Perception acquired the qualities of objectivity and meaningfulness; attention has become voluntary; logical memory; thinking verbally and abstractly. Signals are received by the senses and then translated into virtual copies of real objects and phenomena in the mind. The word, being a signal of the first signals, constituted the second system of reality signals. It, as the basis of consciousness and verbal-logical thinking, forms knowledge through words, connecting fragments of information into a whole and regulating human behavior. Training is important when a person thinks about the movement, mentally performs it, tells himself correctly, which helps to comprehend the movement in general and in detail, and master it [6, 8].

The first and second signaling systems are involved in controlling the temporal, spatial and power parameters of actions, and accuracy depends on the perception and specificity of the signals. Systems model objects in the process of perception and reflection, where the word is the name of the object. If we carry out an element-by-element projection of the first system, we get the second, where the image of the object of the first corresponds to the name in the second. The brain reflects the world, creating models, imposing a mastered pattern on the first image, introducing additional information - brief, understandable,

semantic. This creates conditions for solving problems of world perception, where the second model, which is more variable, transforms into the first with a rigid model [1, 2, 3, 6, 7, 8, 10, 12].

Human speech is the brain's reflection of objects and activities in the environment, which is considered as a system of signals in development: the stage of sound, semantic and gestural signals; the stage of forming signs as a means of displaying and understanding the environment.

It is known that signal codes include speech phonemes, realizing their perception and recognition. Words and speech, reflecting the world, form a system that plays a signaling and triggering role, biological and social functions - cognition through actions and regulation of influence on the world. This showed that oral speech is not a collection of words, but a tool of thinking and signals of subject content [1, 2, 3, 6, 7, 8, 10, 12].

The organization of control, in the form of comparison of objective information and subjective assessment of activity, is included in the training of coordination of sensory systems.

Objective of the study was to justify the use of artificial intelligence in managing the process of precise coordination of the actions of volleyball players.

Methods and structure of the study. The scientific work used the technology of planning and monitoring the dynamics of development of the accuracy of coordination of the components of the first and second signal systems, the success of technical and tactical actions of volleyball players in training and competition conditions.

The spatiotemporal environment was designed to be multifunctional, to influence sensory systems, and variable, to ensure coordination of actions. A large database on volleyball has been created (certificate No. 2023616017). During the classes, coordination exercises were performed on types of training at three levels of complexity, accompanied by drawings, videos, audio materials and verbal codes, in the format of visual and auditory signals using simulators with feedback. This provided the sensory systems and the second signal system of volleyball players with important information.

The technology has been introduced into teaching students at the State University named after. HM. Berbekov of the Kabardino-Balkarian Republic. For the work, an experiment was conducted with the participation of 629 1st-3rd year students (251 boys, 378 girls). The effect in preparation was achieved thanks to adequate perception of information and its prompt analysis by sensory systems, which were successfully measured, formulated and presented in conditional codes of the second signaling system, allowing their understanding, comparison and implementation. The work used methods of literature analysis, computer planning and monitoring, feedback simulators, and mathematical statistics.

Results of the study and discussion. Artificial intelligence technology was studied by the reaction of the first and second signaling systems to the developing information space-time environment, by the accuracy of coordination of actions, by the success of mastering techniques and tactics, competitive tension, and by mastering the conceptual apparatus. By controlling the development of the first and second signaling systems, it was possible to mobilize potential capabilities, improve the accuracy of coordination of volleyball players actions by 8,7% at $p<0,05$, and understanding of verbal and speech support by 36,5% at $p<0,001$ (Table 1).

Such stable coordination of the functioning of systems cumulatively increased the indicators of technical and tactical actions of volleyball players by 14,5% ($p<0,05$) and competitive intensity by 11,5% ($p<0,05$) (Table 2).

Table 1. Accuracy of functioning of the leading sensory systems of volleyball players

Contingent / Systems	Students, % (m = 629)						Credibility
	1st course (m=183)		2nd year (m=208)		3rd year (m=238)		
	$M_1 \pm m_1$	$M_2 \pm m_2$	$M_1 \pm m_1$	$M_2 \pm m_2$	$M_1 \pm m_1$	$M_2 \pm m_2$	p1
Visual, 8 parameters	59,3±2,2	67,2±2,3	60,2±2,2	69,3±2,3	62,5±2,2	72,1±2,4	<0,05
Vestibular, 2 parameters	73,3±2,1	81,3±2,1	75,4±2,2	83,6±2,2	77,4±1,6	85,5±1,7	<0,05
Auditory, 2 parameters	76,8±1,7	85,2±1,8	77,4±1,7	87,1±1,8	79,6±1,4	89,0±1,5	<0,05
Muscular, 3 parameters	62,9±2,0	70,9±2,5	63,4±2,1	72,1±2,7	66,6±2,1	75,3±2,5	<0,05
Second signal, 90 terms	31,4±1,2	57,6±1,3	35,9±1,3	66,1±1,6	38,6±1,4	81,8±1,5	<0,001

Table 2. Accuracy of technical and tactical actions and competitive intensity of volleyball players

Contingent /Systems	Students, % (m = 629)						Credibility
	1st course (m=183)		2nd year (m=208)		3rd year (m=238)		
	$M_1 \pm m_1$	$M_2 \pm m_2$	$M_1 \pm m_1$	$M_2 \pm m_2$	$M_1 \pm m_1$	$M_2 \pm m_2$	p1
Technical and tactical	32,1±2,7	43,1±3,3	33,6±2,2	45,3±2,3	34,3±3,1	46,6±3,2	<0,05
Competitive tension	51,4 ± 2,1	58,9 ± 2,2	52,6±2,2	59,3±2,3	54,3 ± 1,6	62,9 ± 1,9	<0,05

Data from the coordination of sensory systems, technical and tactical training and competitive game tension showed a direct connection and a high level of correlation - R = 0,534 < 0,749, which indicates the benefits of artificial intelligence in the pedagogical process of managing volleyball classes.

C**onclusions.** It has been established that the use of artificial intelligence as a technology for managing the educational process in volleyball has made it possible to create conditions for variability and increase the coordination of functional and motor systems; develop coordination abilities in leading sensory systems; stimulate the development of cognitive and intellectual qualities, accompanying actions with objective and urgent information of the second signaling system; ensure an effective increase in the accuracy of technical and tactical actions and competitive game tension.

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IPsychophysiological characteristics of teenage athletes in cyclic sports

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Abstract

Objective of the study is to identify the psychophysiological status of teenage athletes involved in cyclic sports.

Methods and structure of the study. The work assessed the psychophysiological characteristics of 85 teenage athletes in cyclic sports: biathlon, speed skating and swimming using the psychophysiological testing device UPFT-1/30 – «Psychophysiologist». The level of reactive and personal anxiety was also determined.

Results and conclusions. The results of the study made it possible to obtain a psychophysiological portrait of teenage athletes involved in cyclic sports. We showed that biathletes had better work efficiency, strength and endurance of nervous processes. In swimmers, inhibition processes prevailed over excitation processes and were characterized by greater mobility. The number of accurate reactions among the athletes we studied turned out to be below the age norm, which is associated with the low dynamics of the competitive situation in these sports. Thus, the data obtained can be used in the training process and in preparing teenage athletes of cyclic sports for competitions.

Keywords: *psychophysiological characteristics, teenage athletes, cyclic sports.*

Methods and structure of the study. The scientific work was carried out in the 2022-2023 academic year, and involved teenage athletes aged 11-14 years who were involved in biathlon (26 boys), speed skating (30 boys) and swimming (29 boys) in sports schools in Kirov. The work was carried out at the resource base at the Federal State Budgetary Educational Institution of Higher Education «Vyatka State University» in the morning, with the consent of parents and the coach, in compliance with the principles of uniformity of requirements and confidentiality.

The assessment of the psychophysiological status of teenage athletes was carried out using the psychophysiological testing device UPFT-1/30 and included an assessment of a number of psychomotor indicators: A) assessment of the strength of nervous processes by measuring the dynamics of the tempo of movements of the subject's hand, which was carried out using the express method " Tapping test"; B) assessment of the functional state of the central nervous system according to the parameters of a simple visual-motor reaction (SVMR), which characterizes the level of activation of the central nervous system; C) assessment of the athlete's ability to adequately perceive changes in spatio-temporal events, as well as individual characteristics of the organization of the nervous system in terms of speed and accuracy of response to a moving object, namely the balance of the nervous system in terms of the degree of balance of excitation and inhibition processes, which were carried out according to the parameters of the reaction to a moving object (RDO). In addition, the athletes were assessed for reactive (situational) and personal anxiety using the Spielberger-Hanin scale.

Results of the study and discussion. One of the informative indicators used to assess the properties of the nervous system of athletes is the tapping test [6].

In our study, the tapping test was performed for 30 seconds first with the right hand and then with the left. Based on data on the duration of time intervals between impacts and the number of impacts for each 5-second interval, the following indices were

calculated: nervous system efficiency (NS), nervous system strength (NS), and nervous system endurance (NS) [5]. We have shown that biathletes had the greatest work efficiency, their frequency of impacts in 5 s was 6,11±***0***,029 times, and the lowest efficiency was among speed skaters (5,63±0,051 times, p≤0,05) (Table 1). Based on the results obtained, biathletes had the greatest strength of the nervous system (1,02±0,004), while speed skaters and swimmers had significantly lower values of this indicator (1,00±0,006 and 0,99±0,004, respectively), i.e. It was easier for biathletes to endure intense and long-term competitive and training loads, and they also needed less time to recover after such loads (Table 1). The nervous systems of biathletes (0,92±***0***,005) and speed skaters (0,91±0,005) had the greatest endurance, while in swimmers this indicator was significantly lower (0,88±0,004, p≤0,05, Table 1). Thus, the biathletes we studied had better work efficiency, strength and endurance of nervous processes, which gives them a greater opportunity to successfully perform in competitions and effectively carry out the training process.

The results of a simple visual-motor reaction indicate that the average reaction time and its standard deviation are significantly less in swimmers, and this indicates greater mobility of nervous processes and better development of the motor quality of speed. Whereas, the lowest mobility was noted among speed skaters (Table 2).

According to V.D. Nebylitsina (1996) the maturation of the visual sensory system ends by the age of 12-13, which contributes to improved orientation in space and coordination of movements [3]. Our PVMR data are consistent with similar results from L.A. Girenko et al. (2012), obtained for cross-country skiers of pubertal age and amounting to 227±5,1 ms [1].

To assess the individual characteristics of the organization of the athlete's nervous system, the reaction to a moving object test was used. Based on the obtained results of such indicators as: the percentage of advances, the sum of times of advances and the balance coefficient for the swimmers we studied, the processes of inhibition prevailed over the processes of excitation. Whereas, among biathletes and speed skaters, excitation processes predominated, this indicates that biathlon and speed skating develop an anticipatory strategy in young athletes. The contingent we studied did not differ significantly in the number of accurate reactions, which turned out to be below the age norm (4-6 accurate hits are normal), which is due to the specifics of cyclic sports, in particular, the low dynamics of the competitive situation (Table 3).

Studying the level of anxiety of athletes is an important component of their pre-competition preparation. The presence of anxiety in athletes is not a negative personality trait or a factor in failure in competition. According to the results of our study, the level of situational anxiety, which is responsible for the mental state of the athlete at a given point in time, corresponded to optimal values for the entire study population (Table 4).

Table 1 *– Indicators characterizing the properties of the nervous system according to the tapping test in adolescent athletes involved in cyclic sports, M±m*

Kinds of sports	Average beat frequency (number):		Sum of blows (number)		Efficiency index	Strength index	Endurance index
	right	left	right	left			
B n=26	6,1±0,03	5,4±0,04	183,3±0,85	162,4±1,06	6,11±0,029	1,02±0,004	0,92±0,005
SS n=30	5,5±0,001	5,2±0,09	178.3±2,01	157,6±2,79	5,63±0,051	1,00±0,006	0,91±0,005
S n=29	6,0±0,04	5,1±0,07	178,9±1,17	152,9±2,04	5,97±0,039	0,99±0,004	0,88±0,004
p<0,05	SS – B, S	B – SS, S	B – SS, S	B – S	B – SS, S; S – SS	B – SS, S	S – B, SS

Note: the differences between sports are significant: B – biathlon, SS – speed skaters, S – swimmers.

Table 2 – Indicators of simple visual-motor reaction in adolescent athletes involved in cyclic sports, M±m

Kinds of sports	ART (ms)	RMSD RT (ms)	Me (ms)	Mo (ms)	AMo (%)	min RT (ms)	max RT (ms)
B n=26	238,0±3,98	65,9±4,38	218,9±2,82	70,3±2,44	28,4±0,37	172,3±2,48	590,3±38,43
SS n=30	248,8±3,15	73,2±3,23	232,5±2,92	72,1±2,46	23,4±0,49	167,4±1,37	613,0±29,66
S n=29	223,5±2,00	49,9±2,71	212,8±1,56	66,1±1,75	30,8±0,64	160,5±0,79	474,9±24,52
p<0,05	B – SS, S; SS – S	S – B, SS	SS – B, S	–	B – SS, S; SS – S	S – B, SS	S – B, SS

Note: ART is the average reaction time, RMSD VR is the standard deviation of the reaction time, Me is the median, Mo is the mode, AMo is the amplitude of the mode, min RT is the minimum reaction time, max RT is the maximum reaction time. The differences between sports are significant: B – biathlon, SS – speed skaters, S – swimmers.

Table 3 *– Indicators of reaction to a moving object in teenage athletes involved in cyclic sports, M±m*

Kinds of sports	Number of exact reactions (number)	Lead percentage (%)	Sum of advance times (ms)	RMS deviation from ideal VR (ms)	Reaction coefficient to a moving object	Balance coefficient
B n=26	0,3±0,06	44,4±1,52	837,1±49,82	79,2±2,70	0,9±0,07	0,8±0,07
SS n=30	0,2±0,04	48,6±1,21	951,3±47,38	87,1±3,00	0,6±0,04	0,7±0,04
S n=29	0,4±0,07	38,3±1,09	736,2±24,81	78,0±2,07	1,2±0,06	1,4±0,05
p<0,05	SS – S	B – SS, S; SS – B, S, SS – S	SS – S	SS – S	B – SS, S; SS – S	S – B, SS

Note: The standard deviation from the ideal RT is the standard deviation from the ideal reaction time. The differences between sports are significant: B – biathlon, SS – speed skaters, S – swimmers.

Table 4 *– Indicators characterizing reactive and personal anxiety in teenage athletes involved in cyclic sports, M±m*

Kinds of sports	RA (point)	Above normal (%)	PA (point)	Above normal (%)
Biathlon (n=26)	33,1±0,59	none	37,1±0,66	38,5±9,54
Speed skaters (n=30)	34,0±0,78		40,3±0,87	50,0±9,13
Swimmers (n=29)	32,8±0,51		36,6±0,48	20,7±7,52
p<0,05	–		–	SS – S

Note: RA – reactive anxiety, PA – personal anxiety. The differences between sports are significant: B – biathlon, SS – speed skaters, S – swimmers.

However, the level of personal anxiety, which characterizes an individual's greater exposure to stress factors, was significantly higher among speed skaters.

Conclusions. The results of the study made it possible to obtain a psychophysiological portrait of teenage athletes involved in cyclic sports. Biathletes had better performance, strength and endurance of nervous processes. In swimmers, inhibition processes prevailed over excitation processes and were characterized by greater mobility. The number of accurate reactions among the athletes we studied turned out to be below the age norm, which is associated with the low dynamics of the competitive situation in these sports. Thus, the data obtained can be used in the training process and in preparing teenage athletes of cyclic sports for competitions.

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Sport as compensation for infantile traits in young people

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Abstract

Objective of the study was to identify the relationship between sports activity and infantilism traits using the example of sports youth.

Methods and structure of the study. The scientific work was carried out in Yekaterinburg, in the fall of 2023. The target group of the study is students of the Institute of Physical Culture, Sports and Youth Policy of UrFU, bachelors and masters, n=42, age from 19 to 23 years. A formative experiment was conducted in which non-athlete students attended mindfulness training sessions that included a unit on motivation to play sports, and they actively attended various sections, kept a diary, and reported. At the end of the experiment, infantile traits were measured in the group of «non-athletes» in December 2023.

Results and conclusions. As the study showed, medium and high levels of infantilism are associated with protective mechanisms of denial, regression and compensation, and low subjective control. In the group of athletes studied, infantile traits are less pronounced and are associated with intellectualization, reactive formations and projection. The influence of sports activity on the control group of «non-athletes» led to a decrease in infantilization.

It can be stated that infantile traits in young people are a spontaneous adaptation mechanism that is controlled through sport as a special activity that can act as a factor in the compensation of infantile traits, including the mechanism of infantilism on an unconscious level, making it irrelevant.

Keywords: *sports, youth, psychological protection of the individual, character defects, infantilism, social security of youth.*

Introduction. The activity that prevails in a particular person affects his personality, forms personal constructs, predetermines the appearance of specific traits, even deformations, or, conversely, affects the basic settings, correcting their negative manifestations. In the age of information technology, communication is deformed, and young people spend time on gadgets, smartphones, the «tactility effect» disappears, the visual analyzer «dehydrates»; difficulties are ignored, resilience is not trained, values are eroded and growing up is difficult. The psyche of a young man is labile and plastic, his personality is just being formed, and there are features that determine the high mental tone, flexibility, susceptibility to influence, and easy switchability of a young man [2]. However, the maturation of a young person in a modern social situation of instability has a special path: it is distorted, slowed down, provided by replacement mechanisms, social deformations are formed as an option for adaptation to the conditions of growing up. This forms compensatory personal constructs that interfere with a harmonious, normal life. One such construct is infantilism, which provides mental protection but makes it difficult to effectively grow up.

The definition of «infantilism» does not have a single meaning and is generally interpreted as a child's model of behavior in social, psychological, and mental aspects. Infantilism in the psychological sense as personal immaturity (infantility) is manifested in the lack of formation of the emotional-volitional sphere of the personality at a level sufficient for a particular age [4]. The infantilization of the youth psyche is followed by social deviations, addictions and other deviations, which is why it is dangerous. Researchers state that infantilism is inherent in students of the 21st century [1, 5]. The structure of infantilism among students is

a low level of volitional activity, immature psychological defenses, refusal to assume responsibility, insufficient level of self-organization, self-awareness, and self-development [6].

The dominant social environment in everyday life creates the basis for the inclusion of congruent psychological defense mechanisms that can ensure the functional state of mental activity and eliminate deviations. If such an environment ensures awareness of oneself and one's choices, trains willpower and discipline, maintains activity (including physical activity), we assume that such activity will be able to compensate for personality traits of immaturity, and this activity can be sport.The actualization of sports activities creates the opportunity to demonstrate qualities that help cope with stress and the characteristics of age. In sports activities, subjects accumulate the effects of experiencing unfavorable functional states, pump up resilience and vitality, which allows them to be functional, effective and produce high results. Sport provides the opportunity for «effective sublimation», which allows you to strengthen authority and influence among young people, helps in the fight against difficulties, and effectively resets cortisol, the stress hormone that turns out to be a provocateur of health problems; regular exercise develops concentration, allows you to unite the group, and generally ensures the processes of adequate maturation. People who play sports develop endurance, patience, strength, agility, speed, reaction, coordination; sports allow them to become more stress-resistant to negative environmental phenomena, develop responsibility and reduce infantilism [3].

Objective of the study was to identify the relationship between sports activity and infantilism traits using the example of sports youth.

Methods and structure of the study. A study of sport as a way to compensate for infantile traits was conducted in Yekaterinburg in the fall of 2023. The target group of the study is students of the Institute of Physical Culture, Sports and Youth Policy of UrFU, bachelors and masters, n=42, age from 19 to 23 years. The study was carried out during school hours, but not simultaneously: the first measurement of infantilism traits was carried out in September in two groups of subjects: student-athletes (n=22) and students of the same institute, but not involved in sports (Department of Organization of Work with Youth, n=20). Next, a formative experiment was conducted during which non-athlete students attended mindfulness training sessions, which included a unit on motivation to play sports, and they actively attended various sections, kept a diary and reported. The infantile traits were then measured in a group of non-athletes in December 2023.

In testing infantile traits, we used 1) the «Level of Infantilism» Questionnaire (A.A. Seregina); 2) the Life Style Index (LSI) technique, it allows you to diagnose psychological defense mechanisms and identify their degree of maturity; 3) Rotter's method for diagnosing the level of subjective control (adapted by E.F. Bazhin, S.A. Golynkina, A.M. Etkind).

Results of the study and discussion. Both groups were tested on the «Level of Infantilism». The questionnaire allows you to obtain information on eight indicators: the emotional-volitional sphere, work motivation, value orientations, entertainment/hedonism, reflection, position of dependency/dependence/irresponsibility, disordered/chaotic behavior, overcoming behavior. The results obtained are as follows:

Groups	Low level of infantilism	Average level of infantilism	High level of infantilism
Student athletes	43%	49%	8%
Non-athlete students	13%	57%	30%

Very high levels were not found in any group of students; both groups presented different levels of infantilism - from low to high. The difference is also obvious: 93% of athletes have a low and medium level of infantilism, which means that this is their ability to control emotions, there is an understanding of the prospects associated with sports, pleasures are controlled, reflection allows you to regulate behavior, a desire for order and rationality is expressed, a willingness to overcome is expressed difficulties and own weaknesses. Non-athlete respondents showed the opposite tendency, which indirectly indicates the importance of sports in matters of personal maturity and overcoming infantilism.

According to the Life Style Index method, a group of non-athletes shows defense mechanisms: denial – 79,60%; suppression – 46,56%; regression – 77,73%; compensation – 78,52%; projection – 49,04%; replacement – 56,47%; intellectualization – 52,65%; reactive formations – 49,82%.

We focus on the high importance of denial, regression, compensation as defense mechanisms; these mechanisms are primary, immature and also indicate a tendency towards infantilism in non-athletes. The second group is dominated by defenses such as projection, intellectualization and reactive formations. Let us as-

sume that it is sport that forces subjects to project their own processes and emotions outward, to rationalize, to «convert» accumulated tension into reactive formations.

According to the «Level of Subjective Control» test, statistically significant differences were revealed between the two groups. In the group of athletes with the scale of general internality, the majority (97%) had a high level of subjective control, i.e. These young people believe that most events in life are the result of their own actions, that they must control them, feel responsible for these events, want to control them, are nervous when they fail, blame themselves if control is unsuccessful, and are dissatisfied with themselves. It seems to us that these athletes have blocked mechanisms for «dumping» negative emotions and weakly expressed positive ones, in general, satisfaction with life.

Students in the non-athlete group do not demonstrate such uniformity: the majority of subjects (67%) have average values, i.e. they do not have any claims to control, responsibility for all life events, do not worry about this and do not feel guilty if this fails, i.e. «not loading». There is no unified direction of the entire group to achieve high social goals.

Thus, we can state the presence of infantile personality traits in both groups of students, however, among «non-athletes» their severity is higher. Next, an attempt was made to reduce the detected traits of infantilism. «Rewiring» compensation mechanisms takes a certain time, and therefore the study turned out to be longitudinal and its formative part lasted the entire fall semester. At this time, students in psychology courses attended a series of classes on mindfulness, where a significant part was devoted to motivation to play sports, and regular physical activity was a condition for inclusion in the control sample.

Four months later, in December 2023, the traits of infantilism in «non-athletes» were re-measured. A repeated study using the «Level of Infantilism» method showed an increase in indicators of low levels of infantilism from 13% to 33%; the average level of infantilism decreased but only slightly; the high level of infantilism also remained, but at 8% (versus 30% previously). The results of the Life Style Index methodology show a redistribution of defense mechanisms: regression and compensation are also manifested, but in a smaller percentage, but denial is practically not detected and intellectualization has increased, which was previously identified in a group of athletes.

Calculation of the Spearman correlation coefficient showed that the ρ criterion is equal to 1.000. The connection between the studied characteristics is direct, the closeness (strength) of the connection on the Chaddock scale is functional. The number of degrees of freedom (f) is 6; the critical value of Spearman's criterion for a given number of degrees of freedom is 0,738; $\rho obs > \rho crit$, the dependence of the signs is statistically significant ($p<0,05$).

Conclusions. Adaptation of young people growing up to modern conditions as a process is burdened with infantilism. Infantilism as a psychological defense mechanism has a structure: in our study, medium and high levels of infantilism are associated with the protective mechanisms of denial, regression and compensation, and low subjective control. At the same time, in a group of athletes, infantile traits are less pronounced and are associated with intellectualization, reactive formations and projection. The influence of sports activity on the control group of «non-athletes» led to a decrease in infantilization.

With some confidence, we state that infantile traits in young people are a spontaneous adaptation mechanism that is controlled through sport as a special activity that can act as a factor in the compensation of infantile traits, including the mechanism of infantilism on an unconscious level, making it irrelevant.

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Relationship of the level of self-esteem and injuries in young sambists

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Abstract

Objective of the study was to assess the relationship between the level of self-esteem and other psychological factors with the severity and frequency of injuries among sambo wrestlers aged 18-25 years.

Methods and structure of the study. To obtain empirical data, the following methods were used: Rosenberg self-esteem scale; emotional burnout questionnaire T.D. Radecke, and A.L. Smith (ABQ, 2001); Situational Motivation Scale (SIMS); self-assessment of an individuals readiness for a fight using 7 indicators; assessment of the effectiveness of athletes competitive activities (competition statistics); assessment of the frequency of injuries to athletes (statistics of injuries during the training, competitive process and in everyday life). The study was conducted at sports universities in Russia and China.

Results and conclusions. Russian sambo wrestlers have a lower number of injuries, and performance and satisfaction with the result increases with: high, but differentiated self-esteem, including low self-esteem of readiness to use new, not fully mastered techniques and fight with an opponent who offers strong resistance, as well as one's ability to accept time of a duel of deliberate decisions, autonomous identity (high identification regulation, low external regulation, high internal motivation for sports activities).

The combination of high levels of identification and external regulation under more complex conditions (combination of educational and sports activities by Chinese sambo wrestlers training in Russia) leads to the suppression of fear of an opponent, victim behavior, and an increase in the number of severe injuries (spine).

For Chinese sambo wrestlers training in China, the combination of youth, high levels of undifferentiated self-esteem, identification and external regulation with high training and competitive loads, a large number of prizes, increases the level of emotional burnout, and contributes to the rapid devaluation of achievements.

Keywords: *self-esteem, emotional burnout, identification regulation, external regulation, internal motivation, devaluation of achievements.*

Introduction. Important psychological factors that increase the risk of injury in sambo athletes can be: the need to maintain a high level of self-esteem with poor preparation for a fight, high training and competitive loads with a low level of internal motivation and a high level of external regulation, emotional burnout, underestimation of the opponent and a number of others.

Objective of the study was to assess the relationship between the level of self-esteem and other psychological factors with the severity and frequency of injuries among sambo wrestlers aged 18-25 years.

Methods and structure of the study. To obtain empirical data, the following methods were used: Rosenberg self-esteem scale; Burnout Questionnaire Radecke, T.D., & Smith, A.L., (ABQ, 2001); Situational Motivation Scale (SIMS); self-assessment of an individual's readiness for a fight using 7 indicators; assessment of the effectiveness of athletes' competitive activities (competition statistics); assessment of the frequency of injuries to athletes (statistics of injuries during the training, competitive process and in everyday life). The study was conducted at sports universities in Russia and China.

The main differences between these three groups: Russian sambo wrestlers (group 1, n=10); Chinese sambo wrestlers training in Russia (group 2, n=7) and Chinese sambo wrestlers training in China (group 3, n=11) according to the Mann–Whitney U test

Methods	Indicators	1 group		2 group		1 group with 2 group		3 group		1 group with 3 group		2 group with 3 group	
		$\bar{X}$	σ	$\bar{X}$	σ	Uemp	p	$\bar{X}$	σ	Uemp	p	Uemp	p
Sambo training experience		7,9	4,04	**4,3**	1,25	16,0	*0,064*	**2,0**	1,18	3,0	0,000	6,5	0,004
Number of workouts per week		**5,5**	1,58	2,7	1,25	6,5	0,005	5,3	3,72	40,0	0,291	22,0	0,135
Training intensity*		**7,8**	1,03	**6,7**	0,95	14,5	0,045	**8,0**	1,18	49,0	0,673	16,0	0,042
Number of competitions last year		4,6	2,76	**4,1**	1,86	30,0	0,626	**2,1**	2,17	25,5	0,038	14,5	0,030
Severity of the most serious injury received in normal life**		**2,5**	0,97	1,3	0,49	11,0	0,019	1,5	0,69	22,5	0,022	34,5	0,717
Number of injuries to the elbow joint		0,7	0,82	**2,3**	2,06	18,0	0,097	**0,5**	0,52	47,5	0,597	16,0	0,042
Burnout Questionnaire (ABQ)	Emotional/physical exhaustion	10,4	5,04	**15,4**	1,62	13,0	0,032	15,9	4,01	20,5	0,015	31,0	0,497
	Depreciation (devaluation) of achievements	10,7	5,50	**14,4**	2,07	12,0	0,025	16,9	6,20	21,0	0,017	32,0	0,556

*Notes: *Training intensity, where 5 points is 50% of maximum heart rate, 10 points is 100%*

*** Injury severity was graded on a scale of 1 to 5, where 1 was minor injury, 2 was moderate injury, 3 was severe non-life-threatening injury, 4 was severe life-threatening injury, and 5 was critical injury with questionable survival.*

Results of the study and discussion. The main differences found between the performance of subjects from all three groups: Russian sambo wrestlers (group 1, n=10); Chinese sambo wrestlers training in Russia (group 2, n=7) and Chinese sambo wrestlers training in China (group 3, n=11) are presented in the table.

With less training (2,4 times) for Chinese sambo wrestlers training in Russia compared to Chinese sambo wrestlers training in China, they participate in the same number of competitions as Russian sambo wrestlers. This is twice as many as the number of competitions in which Chinese sambo wrestlers training in China participate. In terms of the number of prize places taken during the season, no significant differences were found between the subjects of the three groups.

Chinese sambo wrestlers (both those training in Russia and those training in China), compared to Russian ones, have significantly more pronounced symptoms of emotional burnout.

According to the most popular cognitive-affective model of burnout, R.E. Smith (Smith R.E., 1986) burnout is the avoidance of an activity that a person was passionate about due to the disproportion of the effort expended, the physiological and psychological "price" and the effect obtained personally for oneself. In accordance with this model, the presence of burnout symptoms among Chinese sambo wrestlers indicates that they do not consider the result obtained during sports activities to be consistent with the efforts expended to obtain it.

Conclusions. A comparative analysis of the performance of Russian and Chinese sambo wrestlers showed that Russian sambo wrestlers have more training experience and a higher sports rank in sambo, longer training sessions, weaker symptoms of emotional burnout, and a lower level of depreciation (devaluation) of achievements. Russian sambo wrestlers, unlike Chinese ones, believe that the result they get is worth the effort. Chinese sambo wrestlers training in Russia over the past year received 3,3 times more injuries to the elbow joint in training and competitions relative to Russian sambo wrestlers and 4,6 times more than Chinese sambo wrestlers training in China.

Unlike Chinese sambo wrestlers (both those training in Russia and those training in China), Russian sambo wrestlers receive significantly more severe injuries in everyday life, which is due to the vivid experience of success (the tendency to experience a sense of achievement).

Correlation and factor analyzes of the obtained data showed that:

a) Russian sambo wrestlers who train a lot experience more positive emotions from sports (fewer symptoms of burnout). During training and competitions, injuries occur less frequently and less

frequently (fewer injuries occur, including the elbow and knee joints, shoulders, ankles, fingers, ribs, etc.), because:

• have high, but differentiated self-esteem, are capable of self-criticism without loss of self-confidence (they rate their ability to make thoughtful decisions during a fight lower, they are careful;

• rely on identification regulation, but have a higher level of internal motivation and evaluate the level of external regulation lower (autonomous identity);

• older, previously successfully engaged in a type of martial arts that is very different from sambo, but due to greater experience in sambo they already have a higher sports rank and in sambo they perform more often and more effectively in competitions;

b) Chinese sambo wrestlers who participated in more competitions over the past year, training in Russia, were successful in the previous form of martial arts, but are now experiencing a depreciation of their previous achievements (emotional burnout) as a result of meetings with better trained Russian sambo wrestlers. The resulting fear helps to avoid using new, not fully mastered techniques and fighting an opponent who offers strong resistance. This reduces the number of injuries to the elbow, face, wrist, neck and other injuries (fingers, ribs, etc.). The effectiveness of competitive activity (number of prizes over the past year) is higher when the former sport is similar to sambo.

Chinese sambo wrestlers in Russia, who rarely attend training and train less intensively, have a high level of external and identification regulation, have participated in larger competitions. In an effort to confirm their identity in many areas, to gain approval and in academic activities, they leave less time for sports, which, combined with suppressing fear of competitors to maintain high self-esteem, the identity of an experienced athlete and participation in higher-level competitions, increases the number of severe injuries (spinal injuries).

c) successful Chinese athletes training in China are young, brave, train a lot, often perform, but at low-level competitions, taking many prizes, are rarely injured, have a low sports category and a high level of emotional burnout, high self-esteem, rely on identification and external regulation.

With high differentiated self-esteem, autonomous identity (high identification regulation, low external regulation), high internal motivation for sports activities, self-critical assessment of one's abilities to make thoughtful decisions during a fight, caution, avoidance of using new, not fully mastered techniques, the incidence of injury is reduced, the level of sports qualifications, performance and satisfaction of sambo wrestlers with the achieved result increases.

Determining priority activities (sports, educational or professional) by Chinese sambo wrestlers training in Russia, developing their autonomous identity and internal motivation, and increasing the number of training sessions for athletes participating in major competitions will reduce the number and severity of injuries received by athletes.

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Prospects for financial support for physical culture and sports in the sverdlovsk region

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Abstract

Objective of the study was to justify the development of theoretical and methodological aspects of regional financing of physical culture and sports, taking into account trends in the budgetary provision of these expenses in the Russian Federation.

Methods and structure of the study. System-structural, functional, factorial and comparative methods of analysis were used with the construction of analytical models based on the synthesis of modern scientific methods of cognition of economic and social phenomena.

Results and conclusions. The article discusses the reasons for the growth, subsequent decline and prospects for the development of physical culture and sports in the Sverdlovsk region in the coming years. It is noted that sustainable economic development in this area is impossible without attracting more extra-budgetary sources, which currently does not meet the target. This issue becomes especially acute in anticipation of the sequestration of regional budget expenditures on physical culture and sports in 2023-2025, which confirms the relevance of the study.

Keywords: *physical education, sports, financing of government programs, financial support.*

Introduction. Physical culture and sports are the most important areas of social policy of the Russian Federation for the preservation of the population, its health and the well-being of citizens. To restore and improve the health of the nation, overcome the negative consequences of social transformation and reform the foundations of the state as a whole, our country needs a single effective financial mechanism to ensure the functioning of physical culture and sports. Of course, it is necessary to preserve the system of state provision of physical culture and sports, but at the same time it is necessary to strive to create new sources of financing expenses in this direction, focusing on the use of private property.

Objective of the study was to justify the development of theoretical and methodological aspects of regional financing of physical culture and sports, taking into account trends in the budgetary provision of these expenses in the Russian Federation.

Methods and structure of the study. System-structural, functional, factorial and comparative methods of analysis were used with the construction of analytical models based on the synthesis of modern scientific methods of cognition of economic and social phenomena.

Results and conclusions. One of the strategic goals of the nation's development is to support physical culture and sports, which is enshrined in the relevant state programs of the Russian Federation [3]. To determine the prospects for the development of physical culture and sports at the regional level, it is necessary to consider the financial support that has been provided over the past 5 years, as well as the planned amounts of funding in 2023-2025. The Sverdlovsk region became the object of the study, since it is here that the largest number of people in the Ural Federal District (hereinafter referred to as the Ural Federal District) live, who go in for sports, which can be seen in the table.

The number of citizens involved in sports aged 3 to 79 years in the Urals Federal District in 2022

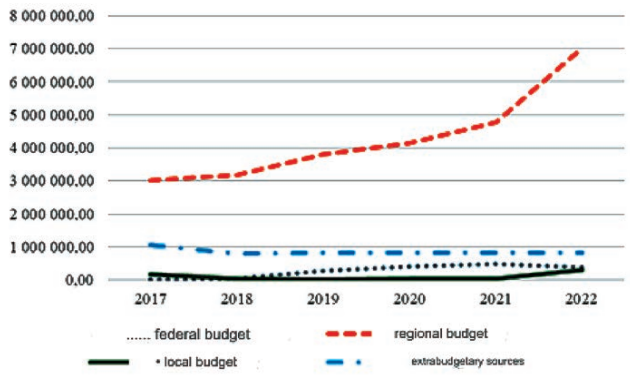
Subjects of the Ural Federal District	Population, people	Proportion of the population living in the constituent entity of the Ural Federal District, %	Number of citizens involved in sports aged 3-79 years, people.	Proportion of the subject's population involved in sports, %	Amount of funding from extra-budgetary sources, thousand rubles.
Sverdlovsk region	4 239 311	34,6	2 102 975	54,0	4 597 800,3
Chelyabinsk region	3 406 371	27,8	1 616 063	51,9	1 893 543,9
Khanty-Mansi Autonomous Okrug	1 729 472	14,1	868 634	54,0	435 871,4
Tyumen region	1 607 274	13,1	847 371	60,0	1 119 934,1
Kurgan region	761 546	6,2	395 544	55,5	151 118,9
Yamalo-Nenets Autonomous Okrug	511 874	4,2	289 414	55,2	1 384 519,1

As can be seen from the table, in the Sverdlovsk region the share of the population involved in sports aged 3 to 79 years is 54,0%, which is lower than in other regions, with the exception of the Chelyabinsk region. In general, the share of people involved in sports is higher in those regions where the population is lower. The authors of the study believe that this is due to the presence of great opportunities and incentives in large cities: accessibility of sports facilities, infrastructure, sports sections, qualified coaching staff, decent wages and prizes.

Volumes of financing of physical culture and sports by subjects, for which leaders and outsiders can be identified in terms of allocation of funds: Sverdlovsk and Chelyabinsk regions - they receive more funding from extra-budgetary sources than other subjects. However, disproportionality in the financing of the Yamalo-Nenets and Khanty-Mansi Autonomous Okrug and the Kurgan Region is also visible. On the territory of the Sverdlovsk region there are many sports facilities [4]: an Olympic reserve school, 25 autonomous sports institutions, the financing of which is carried out by providing a subsidy for the financial support of the state task. The organization of sporting events is also actively underway, for example, 33 physical education and health events were planned for 2022, the participation of teams in 759 official sporting events is ensured, training camps and events are held as part of the GTO. In other regions of the Urals Federal District, the number of infrastructure facilities is much smaller.

In the Sverdlovsk region, the state program «Development of physical culture, sports and youth policy in the Sverdlovsk region until 2024» is being effectively implemented; the program was later extended until 2027.

Let's consider the sources of financing of the state program (federal, regional, local budgets and extra-budgetary sources) for 2017-2022 based on actual expenses based on reports on the implementation of state program activities [2].



Dynamics of expenditures of the state program "Development of physical culture, sports and youth policy in the Sverdlovsk region until 2024", highlighting sources for 2017-2022, thousand rubles. (Compiled by the author from: [2])

The key expenses of physical culture and sports at the expense of the regional budget were events with funding of over 500 million rubles in year:

state support of the Fund for the Support of High Achievement Sports in the Sverdlovsk Region in the range of RUB 1,001.90 million. (2017) up to RUB 1,360.00 million (2022);

preparation of state sports facilities for the XXXII World Summer Universiade 2023 in the city of Yekaterinburg RUB 1,014.81 million (2022);

organization of provision of sports training services in the range of 824.91 million rubles (2019) to 981.34 (2022);

subsidy to the autonomous non-profit organization «Executive Directorate of Universiade 2023» for the re-

payment of obligations under a loan agreement concluded in order to ensure payment for the right to host the XXXII World Summer Universiade 2023 in the city of Yekaterinburg RUB 600.00 million (2022);

organization of provision of services (performance of work) in the field of physical culture and sports in the range of 524.40 million rubles (2017) to 852.97 million rubles (2022).

Expenditures from other sources during this period are significantly lower. According to the reporting indicators on the implementation of state program activities for 2017-2022, funds from extra-budgetary sources were mainly allocated to support organizations registered in the Sverdlovsk region, ensuring the participation of sports teams and athletes in competitions at the all-Russian and international levels in a constant amount of 809.05 million rub. over the past 5 years. Another event that received funding from extra-budgetary sources was support for socially oriented non-profit organizations, which ranged from 3,600.0 thousand rubles in 2019 to 8,748.6 thousand rubles in 2022 [1].

The increase in funding in 2019-2022 can be explained by preparations for the International University Sports Festival, including with the participation of the BRICS, SCO and CIS countries, which was held on August 19-31, 2023 in Yekaterinburg. The Sverdlovsk region prepared for this event through new construction, reconstruction and major repairs of sports infrastructure facilities. In addition to this significant event, one can also note the commissioning of the Ice Arena in Yekaterinburg (2019), the organization of honoring and rewarding athletes and coaches of the XIX Deaflympic Winter Games in Italy (2020), the construction of the Ural Football Academy sports football center (2021), construction of the Center for Rhythmic and Aesthetic Gymnastics, the multifunctional complex of the Judo Palace, the Aquatic Sports Palace (2022), carrying out activities for the phased introduction and implementation of the All-Russian physical culture and sports complex «Ready for Labor and Defense» (GTO) (2022) [1, 4].

In connection with the completion of these activities and the commissioning of facilities, the large-scale increase in spending on physical culture and sports decreased, and when planning the budget for the next 2024-2025. No significant expenditures on sporting events are expected. The effectiveness of the expenses incurred is their long-term effect of operation: the residential buildings erected for the participants of the event were transferred to the Ural Federal University under the «Campus» program. Sports facilities and educational buildings are used by the Institute of Physical Culture, Sports and Youth Policy of the Ural Federal University, which allows saving funds from the regional budget for other programs and projects.

Thus, all major events recorded in subprogram 1 of the state program, which ranges from 62,81% in 2017 to 93,07% in 2022 of expenses in the state program, are financed from the regional budget, from 70,35% in 2017 to 82,40% in 2022.

Conclusions. To maintain the position of the Sverdlovsk region as a leader in the share of the population systematically involved in physical culture and sports, it is necessary to involve citizens in ongoing mass sports events, strengthen propaganda on maintaining a healthy lifestyle, paying special attention to people with disabilities, low-income groups and individuals left without parental care.

Due to the sequestration of regional budget expenditures for the development of physical culture and holding sporting events in 2023-2025 it is necessary to compensate for underfunded activities from other sources. To achieve such a structure of financing of physical culture and sports, specified in the targets of the Strategy [8] for 2025, where 13% of funds come from extra-budgetary sources, it is necessary to actively work to attract them. Such sources include income from physical culture and sports organizations from commercial activities, income from a variety of extra-budgetary funds promoting the development of physical culture and sports, funding from sponsors, income from sports lotteries, as well as other income that does not contradict the law.

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Effective use of management resources in the implementation of the project «Sport is the norm of life»

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Abstract

Objective of the study is to reveal the potential of a rationally oriented management strategy for the federal project «Sport is the norm of life», increasing the efficiency of its practical implementation in the federal city of St. Petersburg.

Methods and structure of the study. The object-subject segment of the study is the analysis of cause-and-effect relationships of the implementation of the project «Sport is the norm of life» based on achieving resource-functional compatibility of management algorithms.

Results and conclusions. The rational use of management algorithms in the implementation of the project «Sport is the norm of life» ensures the solution of multifunctional problems of preserving human capital and the health of the population of St. Petersburg.

Keywords: *federal project, physical education and sports services, physical activity of the population, development management.*

Introduction. The priority target indicators of the Federal project «Sport is the norm of life» (SNL) are improving the quality of life of citizens in the close relationship of the physical and spiritual principles of the individual through the involvement of all categories and groups of the population in physical activity, sports activities, and health-improving activities of a physical culture orientation [5].

The need for regulating state management of the process of reproduction of intangible (personal) values of physical potential is dictated by the scale of the tasks facing the industry, the originality of cultural, ethnic and physical culture and sports traditions, differences in the equipment of the sports base, the completeness and quality of methodological and personnel support, climatic and geographical features of the regions countries [2]. The introduction of sportization at the level of everyday life of citizens in order to practically solve the problem of studying national health indicators and accumulating the physical potential of society is associated with the concentration of all types of management resources focused on regulating the sports infrastructure [4]. Effective project implementation is associated with strengthening the relationship and synergy of resource provision in the field of project management: planning the stages of deployment of project iterations; training competent human resources; quality control of the provision of physical education and sports services to the population at the municipal level; shifting emphasis in technological processes to the district and municipal levels; timely introduction of management adjustments based on interdisciplinary approaches and alternative proposals [3, 6]. The listed specific components of management potential act as important organizational mechanisms for implementing tasks in achieving the results of the federal Project at the regional level [1].

Objective of the study was to reveal the potential of a rationally oriented strategy for managing the federal project «Sport is the norm of life», increasing the efficiency of its practical implementation in the federal city of St. Petersburg.

Methods and structure of the study. The object-subject segment of the study is the analysis of the cause-and-effect relationships of the implementation of the SLM project in the federal city of St. Petersburg based on achieving resource-functional compatibility of management algorithms.

The instrumental area of research relates to factor analysis of the driving forces and methods of resolving emerging contradictions through the implementation of complex management decisions.

Diagnosis of models for the implementation of the CSF project as an integrated community of quantitative and qualitative elements, indicators and capacities was carried out using expert data assessment methods.

The information basis of the studied project areas was made up of state regulatory and administrative acts in the field of management of physical culture and sports activities, final and current reports and statistical data summarizing the results of the project. The validity of the research results is ensured by the structural systematization of management activities focused on solving project problems.

Results of the study and discussion. Considering the basic prerequisites for the effective implementation of the regional SSF project in St. Petersburg from the point of view of making management decisions and implementing the corresponding control algorithms, we can identify 5 directions for the development and long-term transformation of the components and functional subsystems of the urban physical culture, health and sports environment:

– achieving maximum load on the city's physical culture and sports leisure and sports facilities;

– rapid development of the service functionality of physical education, health and sports programs in accordance with the demands of various categories of the population for a healthy lifestyle and restoration of physical potential while maintaining the overall balance between the availability and quality of services;

– introduction of innovative forms of physical culture and sports events and programs tested at the district level;

– streamlining and improving management aimed at achieving a synergistic effect in the application of project financing methods, development of sports infrastructure, changing the leisure and recreational priorities of the population, creating an inclusive urban environment for a healthy lifestyle;

– integration of all levels of management of the physical education, health and sports sphere, taking into account the economic, socio-demographic and cultural specifics of the region.

The humanistic orientation of the Project's functions is revealed in indicators of involvement in physical education, physical, cultural and social development of St. Petersburg residents (see table).

Among the functions of the development of 18 regional centers of physical culture, sports and health, aimed at ensuring maximum utilization of sports facilities, the tendency to achieve walking accessibility of fitness clusters has been highlighted. Open days held at the beginning of the school year by district sports schools help organize the logistics of the school (working) day for schoolchildren and their parents and act as regulators of interests, taking into account the academic employment of students.

Indicators of the implementation of the project «Sport is the norm of life» in St. Petersburg, 2023

Indicator	Meaning
Number of citizens systematically involved in physical culture and sports, thousand people.	2,9
Number of regional centers for physical culture, sports and health	18
Level of provision of citizens with sports facilities based on one-time capacity, %	65,7
Availability of ice arenas	40
Number of amateur hockey teams	250
Measures taken for the physical education of citizens (at the expense of the city budget) (plan - 162)	175
Availability of multifunctional sports grounds in residential yards	> 700
Badges of the TRP (total in new format / in 2023)	600 тыс. / 119 тыс.

Management algorithms, based on the uniqueness of regional centers of physical culture, sports and health, are built in the context of vertical structuring of the functional use of sites and compliance with the variety of requests of various categories of the population for physical activity. The synergy of tasks solved by regional sports centers is manifested in increasing the flexibility of managing mass sports, physical activity, recreational types of physical culture, training and participation of the older generation of the «silver age» in the All-Russian Spartakiad of pensioners. The sequence of iterative transitions in the daily cycle of use of sites expands the functionality and ensures the integration of regional sports facilities into solving design problems.

Taking into account the climatic and geographical location and the specific sports traditions of St. Petersburg, as the northwestern region of the country, obvious predictors of development are mass testing and the orientation of children to engage in priority sports: hockey, swimming, and athletics. Early and comprehensive testing of predisposition to master certain sports skills acts as a regulator for the inclusion of children in the sports training system that corresponds to the motivation and orientation of young athletes.

The basic condition for the development of St. Petersburg as the hockey capital of Russia is the formation of an extensive model for the operation of ice facilities. The organizational core that increases the value functionality of ice arenas is the priority creation of sports hockey schools (SKA, Dynamo Junior, Silver Lions), which form the sports image of the agglomeration and have continuity of generations, competitiveness of methodological foundations, and achieved sports results. In the evening, the use of the functionality of ice sports facilities meets the consumer demand of citizens for various types of fitness activities: figure skating, mass hockey, mastering skating skills, playing on ice, activities within amateur hockey leagues («St. Petersburg HL», «Night HL»; «Officer's HL»).

Management of the development of physical culture and sports activity is focused on the creation of a courtyard multifunctional sports space, including more than 700 equipped sites and functional components - the functioning of the League of Courtyard Sports with the holding of large-scale sporting events, the St. Petersburg Governor's Cup in courtyard hockey, courtyard football with final games at the stadium «Petrovsky».

Positive trends in the development of management personnel in achieving the current tasks of training managers can be seen in the advanced training of 625 people from among the management, coaching and instructional staff of city and regional institutions of physical education and sports.

Conclusions. The results of the study show that the rational use of management algorithms in the implementation of the federal project "Sport is the norm of life" ensures the solution of multifunctional tasks of preserving human capital and the health of the population of St. Petersburg. The driving regulator of development is the demand of city residents for various types of leisure physical education and sports activities, reflecting the utilitarian and humanistic values of physical culture. The sustainable nature of the identified connections forms a balance of priorities in the development of the urban physical culture and sports environment. Development of the managerial potential of physical culture and sports managers creates favorable conditions for solving the strategic objectives of the Project.

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The influence of the football club brand on the formation of the image of the municipal territory

UDC 796.332

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Abstract

Objective of the study was to assess the possibility of using the achievements of a football club to shape the image of the territory on which the club is based.

Methods and structure of the study. The object of the study is the Sheriff football club. The empirical base was more than 450 publications about the activities of the club.

Results and conclusions. The image of the club is not formed due to one achievement (winning a match), but, on the contrary, a number of different events, especially dramatic ones, emphasize connections with the overall promotion strategy. One of the factors in forming a positive image of Pridnestrovie in the outside world is incoming sports tourism, the flagship of which is the Sheriff football club.

Keywords: *sports journalism, image formation, football club, sports diplomacy.*

Introduction. «Many of the attitudes replicated by the state instantly take the position of national, national ideas that naturally fit into the axiological system of the individual and, more broadly, of society; others require much more time and resources before they find understanding and support from a mass audience. Ideas transmitted by state institutions to the social environment are, in most cases, aimed at modifying the system of socially conditioned identities of the modern individual» [7]. «This study analyzes the phenomenon of states with a deferred foreign policy status as part of the modern geopolitical coordinate system» [3, 5] and the use of sport for the purpose of image formation, which ultimately can lead to recognition of the territory as an independent subject of international relations.

During the Soviet period, this «topic was unattractive for scientific research, apparently due to the fact that «the role assigned to sports publications as a propagandist and agitator of the mass physical education movement, the limited number of publications and their similarity to each other made the study of sports journalism, from a scientific point of view, unattractive» [1]. The modern period practically everything makes politics or is made politics. Therefore, the topic of sports journalism becomes relevant. «In the information era, the volume and level of requirements for the amount of information and management of information flows in all spheres of society and, especially in such areas as culture, including physical culture and sports, have objectively increased» [2]. Some researchers consider football as part of the entertainment industry. «The development of the modern economy is characterized by the active emergence of new industries. One of them was the entertainment industry, within which several directions gradually emerged, including the sports industry» [8].

Objective of the study was to assess the possibility of using the achievements of a football club

to shape the image of the territory on which the club is based.

Methods and structure of the study. This article is a continuation of the collection of the empirical base of the study by E.O. Sizova, who noted that «the tendencies of the so-called pragmatic approach prevailed, according to which the main value of the sports movement is the sport itself and sports records, regardless of what they are used for and what purposes they serve, as well as the commercialization of sports, when sports are not perceived as a cultural phenomenon, but as an ordinary service, a «product», that is, as a business; aspirations for «high performance sports» pushed athletes to use drugs; stimulated doping and corruption. There is an increase in cruelty and rough play at international competitions; violence and inappropriate behavior of spectators at sporting events, and especially at football matches», and the solution to these problems is part of politics.

The object of the study is the Sheriff football club. «A recognized club that is based in an unrecognized country» - this is how today we can call the Sheriff football club, which took 86th place in the list of the best teams in Europe in 2023 according to UEFA. (UEFA. Club coefficients. Available at: https://www.uefa.com/nationalassociations/uefarankings/club/#/yr/2024 (date of access: 19.01.2024)).

The empirical base was more than 450 publications about the activities of the club.

Results of the study and discussion. The club, representing the Republic of Moldova and having a training base in the unrecognized Transnistrian Republic, is a unique example of how politics has not yet influenced the development of football.

The modern flagship of Transnistrian football, FC Sheriff, was founded in Tiraspol on April 4, 1997, just a few years after the end of active hostilities between the two banks of the Dniester. Since then, Pridnestrovie has managed to maintain its own flag, local currency and borders, which, however, are not recognized by any country in the world. Despite this, Pridnestrovie has not pursued an independent policy on the football issue. Already from the first year of its existence, «Sheriff» has been taking part in the championships of Moldova. The stadium of the same name, built in 2002 near Tiraspol, is one of the largest and most modern in Moldova.

Over more than a quarter of a century of its existence, FC Sheriff has become the most successful team in the history of Moldavian football, being a 21-time champion of Moldova, a twelve-time winner of the Moldavian Cup, a seven-time winner of the Moldavian Super Cup, and a two-time winner of the Commonwealth Champions Cup.

The club continues to play in the Moldovan football jurisdiction and has represented the country in European cups for many years. However, for a long time his greatest achievement was reaching the group stage of the Europa League, the second most important competition. For the first time, FC Sheriff received the opportunity to participate in the group stage in 2009.

In August 2021, FC Sheriff qualified for the group stage of the UEFA Champions League, becoming the first Moldovan team to achieve this. Thus, Moldova became the 34th UEFA member country whose clubs have ever played in the main tournament of the Champions League. The previous newcomer to the group stage was Azerbaijan in the 2017-2018 season, when Qarabag FC reached the group stage.

In the second round of the group stage of the UEFA Champions League, already in September, at the Santiago Bernabeu stadium in Madrid, a match took place between Sheriff Tiraspol and Real Madrid, in which the Moldavian club won with a score of 2:1. The main headlines in all the world's sports publications were: «Champions League sensation» (https://tuk.md/novosti/socium/sport/sensacija-v-lige-chempionov-tiraspolskij-sherif-obygral-real-v-madride-video /).

This event aroused great interest not only among rivals in the League, but also among a multi-million audience of football fans who learned about the existence of Pridnestrovie.

The example of FC Sheriff is unique in the post-Soviet space, where several self-proclaimed republics have been formed since the early 1990s.

In all other «unrecognized» territories, football is trying to survive, relegated to a secondary place in national championships. Abkhazia and South Ossetia hold their own championships, but their winners cannot participate in tournaments under the auspices of UEFA. Thus, during the years of «exile», FC «Garabagh» won the Azerbaijani championship eight times and represented its country in European tournaments, but its best result was reaching the group stage of the Europa League.

FC Sheriff is very interested in the development of football among youth. As noted in his work V.A.

Korovin «Playing football affects the development of the personality of adolescents. Teenage football players are distinguished by a higher level of achievement motivation compared to their peers who do not play sports. In this case, motivation simultaneously acts as a source of activity and direction of the individual's behavior» [6].

Not only the football club is interested in this, but also the administration of the Pridnestrovian Moldavian Republic. It should be noted that the Republic of Moldova, using the image of FC Sheriff on the world stage, is interested in developing the image of this football club, and therefore the involvement of young people in sports. The mass media, which can influence behavior and stereotypes through the use of different behavioral models and characters that are perceived as socially attractive and desirable, will solve this problem together with the club.

On August 16, 2003, the Football Academy of FC Sheriff was founded, the purpose of which is to select talented children and train them to the level of professional football players. Currently, more than 400 children from 7 to 17 years old are studying the basics of football at the academy. The Academy holds a number of international youth tournaments in which school football teams from neighboring countries take part. In addition, in 2022, by decree of the Government of Transnistria, changes were approved in the field of physical education of children and youth: the «Football at School» program was developed and introduced for grades 1-4 and the republican football tournament «Leather Ball» was organized among students in grades 5-11 Thus, Pridnestrovie is popularizing football not only as a national sport in the region, but also creating a new recognizable brand on the world stage.

Nowadays, the importance of sport as a diplomatic tool is noticeably increasing. The use of sports diplomacy is increasing as the development of a systematic promotion of a positive image of the country among other states becomes extremely important. However, the main goal of sports diplomacy is to establish certain relationships between the parties, which official diplomacy cannot always achieve.

In the CIS countries, the dominant sport is football (The Most Popular Spectator Sports Worldwide. Available at: https://www.statista.com/chart/10042/the-most-popular-spectator-sports-worldwide/ (date of access: 18.01.2024), and its significant influence on people, public opinion and the prestige of countries and politicians has become an integral tool for solving not only foreign policy, but also domestic political problems, as well as interethnic relations.

Speaking about football diplomacy in relations between Moldova and Transnistria, two main aspects can be put forward: the first is official meetings of high-ranking officials during national or international football championships, and the second is the direct participation of football fans in creating public diplomacy with the aim of uniting people, regardless on their nationality, beliefs and language of communication. At times, this process is accompanied by some incidents.

Some of the official «football meetings» were held in 2010-2011. ex-Prime Minister of Moldova Vlad Filat and ex-President of Transnistria Igor Smirnov, including at the games of FC Sheriff (The Prime Minister of Moldova and the head of Transnistria will meet again at a football match. Available at: https://korrespondent.net/world/1121837-premer-moldovy -i-glava-pridnestrovya-vnov-vstretyatsya-nafutbolnom-matche (date of access: 18.01.2024). Pridnestrovian and Moldovan media closely watched «football diplomacy», since at such informal meetings, in addition to sports, general issues of a bilateral nature were discussed and a number of agreements were even put forward on the Moldovan-Transnistrian settlement, most of which were never implemented [4].

An example of the second hypostasis of «football diplomacy» in Moldova is the incident on June 4, 2013, when during the final match of the Moldova Cup, before the start of the game, a military band was presented on the football field, which was supposed to perform the anthem of the Republic of Moldova. However, fans from the visiting sector began to show defiant behavior, thereby showing disrespect for the anthem ceremony («Football diplomacy» was replaced by a «football war»: the Transnistrian club was fined for «disrespect» for the anthem of Moldova. Available at: https://regnum. ru/news/polit/1667359.html (date of access: 18.01.2024). Thus, the failure in public diplomacy led to the fact that the subsequent place of «football diplomacy» between Chisinau and Tiraspol remained only in history.

OSCE Chairman Audronus Azubaris noted that football fans became the first «diplo-

mats» to establish informal relations on both sides of the Dniester (Audronus Azubalis. «Football Diplomacy» and Transnistria. (https://www.golosameriki.com/a/obse-usa-prednestrovie-2011-02-09-115650684/202863.html (date of access: 18.01.2024). However, the possibilities of public diplomacy are not unlimited, but constant exploitation the possibilities of «sports dialogue» cannot replace official negotiations.

Conclusions. The image of the club is not formed due to one achievement (winning a match), but, on the contrary, a number of different events, especially dramatic ones, emphasize connections with the overall promotion strategy. One of the factors in forming a positive image of Pridnestrovie in the outside world is incoming sports tourism, the flagship of which is the Sheriff football club. By attending world sporting events, tourists can diversify their holiday and get acquainted with local traditions, expanding their horizons.

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Assessment of the cost of material costs of citizens for preparation for implementation of vfsk standards «ready for labor and defense» (based on the example of student youth of Barnaul)

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Abstract

Objective of the study was to assessment of the cost of preparation for compliance with the standards of the All-Russian Sports Society for GTO (using the example of student youth in Barnaul).

Methods and structure of the study. A survey of Barnaul students was conducted, an analysis of the resources of electronic sporting goods stores, as well as statistical data on the level of wages of the population of the Altai Territory in 2023.

Results and conclusions. It was revealed that 62,5% of students prefer to buy sportswear and shoes in the Sportmaster chain stores, 44,9% of students prefer Nike. The cost of such goods is 32-149% (men's range) and 53-136% (women's range) of the average wage of the population of the Altai Territory in November 2023, which amounted to 44 042 rubles per month in November 2023.

To reduce the cost of clothing and footwear in preparation for the implementation of the VFSK GTO, it is necessary to develop such a product under the «GTO» brand, which, in turn, will create a new or expand the existing production of clothing and footwear, increase the number of new jobs, as well as promote and advertising of VFSK GTO. In order to increase the motivation of young people in physical education and sports, it is proposed to more actively implement social order tools for physical education and health services and (or) consider the issue of introducing an additional tool - the «Lesgaft Card».

Keywords: *sportswear and shoes, GTO, costs, students.*

Introduction. In the context of the need to achieve interrelated national goals of the state to achieve a certain level of average life expectancy of the population and the number of people involved in systematic physical education and sports in the territories of the constituent entities of the Russian Federation, an ambiguous situation arises. The state, establishing the recommended amount of physical activity for citizens of a certain age, returned in 2014 the universal institute for assessing the physical fitness of the population. However, practice shows that in the territories of the country, an equal number of the population is not covered by obtaining an assessment of physical fitness [4]. Apparently this explains the almost unchanged positions of the constituent entities of the Russian Federation among the leaders and outsiders in the quarterly ratings of the VFSK «Ready for Labor and Defense» (VFSK GTO). At first glance, the leadership and scientific community declare that the population lacks a well-formed need, motivation or incentive for systematic physical education and sports and assessment of physical fitness. However, the authors, based on other beliefs, propose to consider the issue of activating the population of the VFSK GTO from a different angle, where the success of the inclusion of the most active part of society (students) in systematic physical education and sports depends on the level of their financial situation or the cost of preparation for meeting standards VFSK GTO.

Objective of the study was to assessment of the cost of material costs for citizens to prepare for the implementation of the standards of the All-Russian Sports Society for GTO (using the example of student youth in Barnaul).

Methods and structure of the study. A survey of Barnaul students was conducted, in which 254 students (77 boys, 177 girls) aged 17-23 took part.

The survey questions were open-ended. Below are their contents:

1. Which sports store would you choose to buy sportswear and shoes?

2. Do you use online stores to buy sportswear and shoes? If your answer is «yes», then indicate which online stores you use.

3. Which brand of sportswear and shoes do you prefer for physical education and sports?

Along with the survey, an analysis of the resources of electronic sporting goods stores was carried out, as well as statistical data on the level of wages of the population of the Altai Territory in 2023.

Results of the study and discussion. As the survey results showed, 62,5% of students prefer to buy sportswear and shoes in the Sportmaster store (Figure 1). This store has 8 large branches within the city of Barnaul and are conveniently located in shopping centers. Therefore, it is quite predictable that more students know this store and shop there. Other stores in the city (Trial-sport, TVOE, etc.) are visited by 25,3% of respondents and 12,3% of students found it difficult to answer.

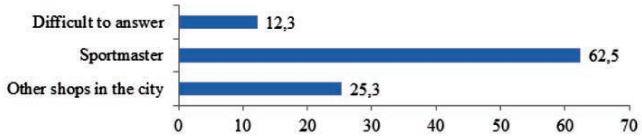

Figure 1. Students choice of stores for purchasing sportswear and shoes (%)

To the question «Do students use online stores to buy sportswear and shoes (%)?», the majority of respondents (57,5%) answered negatively, which was an unexpected answer (Figure 2). It is known that young people prefer to order and purchase goods in electronic stores. In addition to this question, there was a clarification: «If your answer is «yes», then indicate which online stores you use. Some students who answered positively indicated from 1 to 3 online stores. The largest number of students indicated the following online stores: Wildberries – 18,1%, OZON – 8,7%, Lamoda – 5,1%, Sportmaster – 4,3%. 11% of students indicated other online stores.

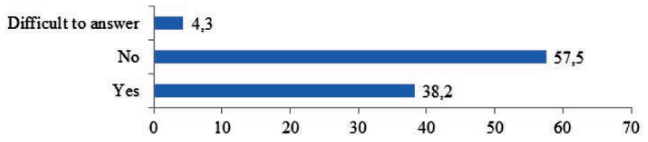

Figure 2. Do students use online stores to buy sportswear and shoes (%)

From the answers received to the previous question, it turned out that 62,5% of students prefer to buy sportswear and shoes in the Sportmaster chain stores. The results obtained indicate the popularity of this trade brand, the variety of assortment, and the affordability of prices for goods.

To the question «Which company of sportswear and shoes do students prefer for physical education and sports (%)» it should be noted that many students indicated the number from 1 to 5 companies. From Figure 3, you can see that a larger number of students prefer Nike – 44,9%. Also, among popular sports brands, students pointed to such brands as Reebok, Columbia, Demix, Asics, Fila, Kappa, Termit.

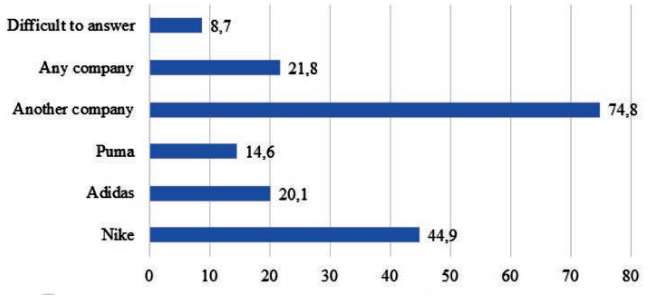

Figure 3. Which brand of sportswear and shoes do students prefer for physical education and sports (%)

Sports goods (including discounted goods), Sportmaster store (Barnaul) as of 25.12.2023, Nike brand [5]

№	Наименование товара	For men		For women	
		Cost min (RUB)	Cost max (RUB)	Cost min (RUB)	Cost max (RUB)
1	Sports suit	5 499,00	19 999,00	13 499,00	13 499,00
2	T-shirt	1 099,00	7 699,00	1 849,00	8 499,00
3	Socks (3 pairs)	909,00	3 499,00	1 539,00	3 499,00
4	Running shoes	6 579,00	34 499,00	6 499,00	34 499,00
Total:		14 086,00	65 696,00	23 386,00	59 996,00

Next, we analyzed the cost of sportswear and shoes that meet the requirements for participation in the tests of the GTO Complex [1]. The cost of a set of sportswear and shoes is presented in the table.

The table shows that the price range ranges from 14 086 rubles to 65 696 rubles, and the cost of a set of these types of goods fluctuates throughout 2023.

We analyzed wage statistics in the region. According to official sources, for January-November 2023, the monthly average salary of residents of the Altai Territory was 40 048-44 042 rubles [2].

An assessment of the material costs for preparing for the implementation of the standards of the All-Russian Federal Sports Complex GTO revealed that their volume is 32-149% (men's assortment) and 53-136% (women's assortment) of the average wage of the population of the Altai Territory in November 2023.

Since students study full-time and do not have the opportunity to work on a permanent basis, their parents are responsible for their financial support. In this regard, we identified temporary work opportunities for students. It has been determined that for 1 hour of work, young people can receive a remuneration from 243,5 to 267,86 rubles (average wage). However, in order to prepare for the implementation of the standards of the All-Russian Sports Complex GTO for stages VI-VIII, the Ministry of Sports recommends training for 300 minutes (5 hours) per week [3]. Accordingly, a student in his free time from studying, not counting travel costs, can receive from 1217,5 to 1339,34 rubles. Travel costs average 240 minutes (4 hours) - an average of 1 hour of time to get to the place of study and 1 hour to get back to the place of residence. The cost of lost income ranges from 974 to 1071,44 rubles. Thus, the total costs of students in preparing them to comply with the standards of the All-Russian Federal Sports Complex GTO can range from 2191,5 to 2410,78 rubles in Week.

Conclusions. The conducted research allows us to conclude that the costs of citizens to prepare for the implementation of the VFSK GTO test standards for students of the Altai Territory is a rather expensive task.

To reduce the cost of purchasing sportswear and footwear, it is necessary to develop special clothing and footwear, for example, under the GTO brand, with an affordable price and not inferior in quality and comfort to products of other brands. Such a decision will make it possible to create a new or expand existing production of clothing and footwear, increase the number of jobs, as well as promote and advertise the All-Russian Sports and Technical Society.

In order to increase the interest of young people in physical education and sports, increasing their number with the proper level of physical fitness, it is proposed to more actively implement social order tools for physical education and health services and (or) consider the issue of introducing an additional tool - the «Lesgaft Card», an analogue of the «Pushkin Card». This decision will help increase attendance and workload of physical education and sports institutions for youth. Every Russian citizen aged 6 to 24 years (inclusive) receives a special bank card. With this card you can pay for equipment, equipment, visits to fitness clubs and other organizations providing services in the field of physical education and sports throughout the country. The value of the «Lesgaft Card» must be differentiated and depend on the level of difficulty (insignia) completed at the previous stage, except for stage I.

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Dynamics of changes in the biomechanical characteristics of the snatch technique with increase in the weight of the projectile under competition conditions

UDC 796.88

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Abstract

Objective of the study is to assessment and comparison of spatio-temporal and kinematic characteristics of the barbell jerk performed with various weights.

Methods and structure of the study. To achieve this goal, the approaches of 13 athletes of the Russian national team were analyzed in competition conditions using high-speed video filming as part of a survey of competitive activity by a comprehensive scientific group in weightlifting. The results obtained were assessed in order to detect reliably significant differences between the spatio-temporal and kinematic characteristics between the approaches.

Results and conclusions. The results obtained indicate that with an increase in the weight of the projectile, the speed characteristics of the snatch technique significantly decrease, which corresponds to Hill's law, and this, as a consequence, affects the decrease in the height of the approach of the bar at the end of the final acceleration, at the end of the unsupported phase and the maximum height of the approach of the bar, as well as at the time of reaching maximum speed. As the weight of the projectile increases, athletes need to exert greater forces to maintain kinematic and spatiotemporal characteristics. An important conclusion is the need to use 95–100% of the weights in order for the spatio-temporal and kinematic characteristics to reach the required values as a result of training.

Keywords: *weightlifting, biomechanical analysis, spatio-temporal characteristics, kinematic characteristics of equipment, high-speed video filming.*

Introduction. Currently, the dynamics of changes in biomechanical characteristics during the performance of three approaches to the barbell snatch under competition conditions have not been sufficiently studied. Studying this issue will make it possible to determine which characteristics and how they change with increasing weight of the projectile, and will also allow us to answer the question of what changes in weight will lead to significant differences in biomechanical characteristics. The relationship between changes in barbell weight and changes in biomechanical characteristics can be used in a training load planning strategy.

Objective of the study was to determination of spatio-temporal and kinematic characteristics, which have significant changes with increasing load intensity.

Methods and structure of the study. Registration of successful and unsuccessful approaches was carried out at the 2023 Russian Weightlifting Cup using high-speed video recording (250 frames/sec) as part of a survey of competitive activity by a comprehensive scientific weightlifting group. 13 athletes from the Russian weightlifting team took part in the study. The weight of the projectile in the third approach is on average higher than in the second by 2,3% and higher than in the first approach by 6,6%. The weight of the projectile in the second approach is higher than in the first by an average of 3,5%.

The work used the concept of the classic snatch technique, developed at the NIIT MGAFC (Khasin L.A.) [1]. During the study, the duration of the classical jerk phases was determined (preliminary acceleration, de-

preciation, final acceleration, first support dip, unsupported phase), the maximum height of the approach of the bar, the height of the approach of the bar at the end of the final acceleration, the height of the approach of the bar at the end of the unsupported phase, the maximum speed, time of movement from MOSH (moment of lifting off the rod) to reaching maximum speed, speed at the phase boundaries. To determine the height of the barbell approach, the Tracker program was used, with the help of which the trajectory of a point at the end of the barbell was marked and scaled. For scaling, the vertical dimension of the rod disk was used. The trajectory of the end of the barbell has been digitized. The height of the approach of the rod in the indicated phases is the difference between the height of the approach of the rod and the height of the rod in the starting position. To calculate the speed of movement of the end of the bar, a computer program was used [2].

Results of the study and discussion. During the study, the snatch technique of 13 female athletes was analyzed in order to identify differences between approaches. The results are presented in table 1, 2 and 3.

When the weight of the projectile changes by 3,5% (comparing the biomechanical characteristics of approaches 1 and 2), the maximum height of approach of the bar decreases by 1,9% (p = 0,005), the height of approach of the bar at the end of the unsupported phase decreases by 1,8% (p = 0,004), the speed at the boundary of the «preliminary acceleration» - «depreciation» phases by 3,6% (p = 0,004), the speed at the boundary of the final acceleration phase and the first support squat by 3,1% (p = 0,003), with the speed at the boundary the first support squat and non-support phase by 4,4% (p = 0,038), maximum speed by 1,7% (p = 0,015). There is also a tendency towards an increase in the duration of the depreciation phase by 3,9% (p = 0,062), the time to reach maximum speed by 1% (p = 0,099), a decrease in the height of the approach of the bar at the end of the final acceleration by 1% (p = 0,094) and speed at the border of the unsupported phase and the second support drop by 9% (p = 0,069).

When the weight of the projectile changes by 2,2% (comparing the biomechanical characteristics of approaches 2 and 3), the maximum height of approach of the bar decreases by 1,7% (p = 0,004), the height of approach of the bar at the end of the unsupported phase decreases by 1.5% (p = 0,004), speed at the phase boundary «preliminary acceleration» - «depreciation» by 2,9% (p = 0,007), speed at the phase boundary «depreciation» – «final acceleration» by

Table 1. Spatio-temporal and kinematic characteristics of the snatch technique in 1 and 2 successful approaches (n = 13)

Parameter	First approach	Second approach	Significance of differences, p
	μ ± σ	μ ± σ	
Duration of the «preliminary acceleration» phase, s	0,512±0,059	0,521±0,052	0,118
Duration of the «depreciation» phase, s	0,144±0,027	0,150±0,028	0,062
Duration of the «final acceleration» phase, s	0,165±0,008	0,166±0,011	0,457
Duration of the «first support squat» phase, s	0,083±0,016	0,085±0,017	0,256
Duration of the unsupported phase, s	0,108±0,028	0,105±0,028	0,266
Maximum boom height, mm	1117±59	1096±63	0,005
Boom approach height at the end of the «final acceleration» phase, mm	831±50	823±41	0,094
Height of approach of the rod at the end of the unsupported phase, mm	1096±49	1077±48	0,004
Speed at the phase boundary «preliminary acceleration» - «depreciation», m/s	1,209±0,101	1,165±0,102	0,004
Speed at the boundary of the «depreciation» – «final acceleration» phases, m/s	1,300±0,250	1,280±0,265	0,207
Speed at the border between the final acceleration phase and the unsupported phase, m/s	2,102±0,112	2,037±0,140	0,003
Speed at the border of the first support squat and the first support squat, m/s	1,541±0,161	1,479±0,173	0,038
Speed at the border of the unsupported phase and the second support drop, m/s	0,552±0,322	0,502±0,376	0,069
Time to reach maximum speed, s	0,799±0,073	0,807±0,063	0,099
Maximum speed, m/s	2,146±0,109	2,110±0,123	0,015

Table 2. Spatiotemporal and kinematic characteristics of the snatch technique in successful approaches 2 and 3 (n = 11)

Parameter	First approach	Second approach	Significance of differences, p
	μ ± σ	μ ± σ	
Duration of the «preliminary acceleration» phase, s	0,515±0,059	0,533±0,063	0,051
Duration of the «depreciation» phase, s	0,145±0,023	0,141±0,018	0,199
Duration of the «final acceleration» phase, s	0,164±0,011	0,168±0,013	0,135
Duration of the «first support squat» phase, s	0,086±0,019	0,085±0,112	0,435
Duration of the unsupported phase, s	0,105±0,027	0,100±0,027	0,087
Maximum boom height, mm	1108±54	1065±40	0,004
Boom approach height at the end of the «final acceleration» phase, mm	826±32	820±38	0,081
Height of approach of the rod at the end of the unsupported phase, mm	1082±43	1065±40	0,004
Speed at the phase boundary «preliminary acceleration» - «depreciation», m/s	1,223±0,095	1,188±0,110	0,007
Speed at the boundary of the «depreciation» – «final acceleration» phases, m/s	1,320±0,265	1,270±0,256	0,003
Speed at the border between the final acceleration phase and the unsupported phase, m/s	2,063±0,132	2,010±0,140	0,003
Speed at the border of the first support squat and the first support squat, m/s	1,531±0,161	1,459±0,479	0,014
Speed at the border of the unsupported phase and the second support drop, m/s	0,620±0,383	0,580±0,389	0,157
Time to reach maximum speed, s	0,805±0,066	0,819±0,077	0,09
Maximum speed, m/s	2,125±0,105	2,071±0,125	0,0009

Table 3. Spatio-temporal and kinematic characteristics of the snatch technique in 1 and 3 successful approaches (n = 10)

Parameter	First approach	Second approach	Significance of differences, p
	μ ± σ	μ ± σ	
Duration of the «preliminary acceleration» phase, s	0,518±0,064	0,528±0,069	0,156
Duration of the «depreciation» phase, s	0,140±0,027	0,146±0,025	0,116
Duration of the «final acceleration» phase, s	0,162±0,012	0,168±0,017	0,045
Duration of the «first support squat» phase, s	0,081±0,013	0,084±0,068	0,282
Duration of the unsupported phase, s	0,118±0,041	0,109±0,039	0,034
Maximum boom height, mm	1128±52	1092±55	0,002
Boom approach height at the end of the «final acceleration» phase, mm	838±45	822±39	0,038
Height of approach of the rod at the end of the unsupported phase, mm	1107±43	1063±36	0,0005
Speed at the phase boundary «preliminary acceleration» - «depreciation», m/s	1,246±0,094	1,169±0,096	0,0008
Speed at the boundary of the «depreciation» – «final acceleration» phases, m/s	1,334±0,270	1,272±0,282	0,053
Speed at the border between the final acceleration phase and the first support drop, m/s	2,122±0,105	2,026±0,139	0,002
Speed at the border of the first support drop and the unsupported phase, m/s	1,590±0,126	1,473±0,510	0,005
Speed at the border of the unsupported phase and the second support drop, m/s	0,576±0,328	0,555±0,398	0,327
Time to reach maximum speed, s	0,800±0,079	0,824±0,078	0,014
Maximum speed, m/s	2,168±0,091	2,091±0,118	0,008

3,8% (p = 0,003), speed at the border between the phase of final acceleration and the first support squat by 2,6% (p = 0,008), the speed at the border of the first support squat and the unsupported phase by 4,7% (p = 0,014), the maximum speed by 2,6% (p = 0,0009). There is a tendency to increase the duration of preliminary acceleration by 3,5% (p = 0,051), the time to reach maximum speed by 1,7% (p = 0,09), decrease the duration of the unsupported phase by 5% (p = 0,087), and the approach altitude bar at the end of the final acceleration by 0,7% (p = 0,081).

When the weight of the projectile changes by 6,6% (comparing the biomechanical characteristics of approaches 1 and 3), the duration of the final acceleration increases by 3,5% (p = 0,045) and the time to reach maximum speed by 3% (p = 0,014), and the duration of the unsupported phase decreases by 7% (p = 0,034), the height of the approach of the bar at the end of the final acceleration by 1,9% (p = 0,038), the maximum height of the approach of the bar by 3,2% (p = 0,002), the height of the approach of the bar at the end of the unsupported phase by 3,4% (p = 0,0005), speed at the boundary of the «preliminary acceleration» - «depreciation» phases by 6,1% (p = 0,0008), speed at the boundary of the final acceleration phase and the unsupported phase by 4,5 % (p = 0,002), with the speed at the border of the first support squat and the non-support phase by 7,4% (p = 0,005), the maximum speed by 3,5% (p = 0,008). There is a tendency towards a decrease in speed at the boundary of the «depreciation» - «final acceleration» phases by 4,7% (p = 0,053).

Conclusions. As the intensity of the load increases, the speed characteristics of the snatch technique significantly decrease, which corresponds to Hill's law; this, as a consequence, affects the decrease in the height of the approach of the bar at the end of the final acceleration, at the end of the unsupported phase and the maximum height of the approach of the bar, as well as the time to reach maximum speed. With an increase in load intensity by 6,6%, a significant change in the duration of the final acceleration and unsupported phases was recorded. As the weight of the projectile increases, more effort must be made to maintain kinematic and spatiotemporal characteristics. When planning the training process, it is necessary to take this into account and select the number of lifts with a weight of 95-100% in the training process. Determining the number of lifts with a barbell weight of 95-100% of the maximum requires more in-depth study and additional research.

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Rationalization of running techniques based on coordinated movements of all link of the flying leg

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Abstract

Objective of the study was to formulate and practically justify the concept of running technique, taking into account the interaction of coordinated movements of all parts of the fly leg when performing a running step.

Methods and structure of the study. The pedagogical experiment was carried out during the summer training camp with highly qualified athletes in athletics (age 23,5 ± 0,7 years), who were divided into 8 people into two comparison groups: experimental and control. In the course of the work, the basic principles of the concept of running technique were formulated and two sets of exercises were developed that have an effective impact on the running step technique in the running disciplines of multi-athletes.

Results and conclusions. According to the provisions of the concept of running technique, taking into account the interaction of coordinated movements of all parts of the swing leg when performing a running step and the developed sets of exercises, the results of the pedagogical experiment recorded positive dynamics: when running 100 m, the results improved by 10,7%; at a distance of 200 m – by 10,5%; times at distances of 600 and 400 m became higher by more than 10%. As a result of the work, it was established that the lack of the vertical component of the ground reaction force impulse is an external factor limiting running speed; when running along a distance, the resulting direction of take-off is close to vertical; forward acceleration of all links of the swing leg throughout the entire period of support allows you to increase the moment of force of moving the free leg forward.

Keywords: *coordinated movements, swing leg, running step, running technique concept, vertical component, repulsion.*

Introduction. All-around includes numerous and multidirectional types of loads, differing in the structure of movement, the nature of the loads, and energy supply. A multi-athlete must have all the physical qualities that are inherent in a sprinter, jumper, thrower and middle athlete. The variety of types of exercises also determines the requirements for the athletes physical fitness. Along with a high level of development of speed and speed-strength qualities, technical readiness is also important for a multi-athlete.

In our country, the concept of biomechanics of sports running based on the reaction of the support of two clearly defined pushes: front and back has become widespread. Experts propose to reduce the braking influence of the front push, if possible, to give a shock-absorbing character to the force process in the first phase of the support period, to absorb the energy of the body's downward movement with inferior muscle work in the depreciation phase, to soften the placement of the foot on the track, to place the foot closer to the projection of the general center of body mass (OCMT), reduce the duration of the depreciation phase, do not rush to push off when landing, go through the middle part of the support period by inertia with some rest. However, many authors have a negative attitude towards the use of the concept of «advanced push» in the description of the biomechanics of running and try not to mention it, and the first phase of the support period began to be called the «depreciation phase», the semantic content of which aims to reduce the energy of the force interaction of the runner with the track in this phase .

Increasing the important role of the «back push» has become the main feature of the concept of sports running biomechanics that has emerged in our country, in which the ability to concentrate the greatest push-off

forces in the final moments of the support period, the ability to more energetically perform the «back push» (with a soft shock-absorbing placement of the foot on the track) is considered the most important element of running technique. The main idea of this concept is the leading role of the «back push» for the forward movement of the runner's body. This biomechanical concept is conventionally called posterior push, since the «back push» and the energetic final straightening of the supporting leg are given the leading importance for moving the body forward.

Adjusting the training process involves a targeted change in methodological approaches and resource functionality under the influence of external and internal factors that determine the direction, nature and depth of the impact of training technologies [1, p. 32]. In this regard, it is necessary to analyze the technical characteristics of athletes and correct the technique of running locomotion based on specialized means related to the biomechanics of running.

Objective of the study was to practically substantiate the concept of running technique, taking into account the interaction of coordinated movements of all parts of the swing leg when performing a running step.

Methods and structure of the study. In the course of the work, a meta-analysis of a vast amount of information in the field of research on running techniques at different distances was used in order to justify the need to study axioms in the training of multi-athletes.

The pedagogical experiment was carried out during the summer training camp with highly qualified athletes in athletics (age 23,5 ± 0,7 years), who were divided into 8 people into two comparison groups: experimental and control (EG, CG). The pedagogical research included: pedagogical observation, testing of physical fitness, as well as testing of running at different distances. At the first stage, we analyzed the level of physical and technical preparedness of each athlete.

The second stage of the study consisted of conducting the experiment itself. The training process in the experimental group was carried out according to the methodology we developed, based on special exercises using simulators: a foot activator and a shoe system. Athletes in the control group trained according to the generally accepted method.

Testing of physical fitness and speed abilities in distance running among all-around athletes before and after the experiment was carried out using tests based on the correlation between all-around types: 30 m - under the run-up of athletes in the long jump, high jump and pole vault; 100 m – under the 100 m sprint/110 m hurdles; 600+400 m – under 400 m run/1500 m run. Test measurements were carried out using the OMEGA Chronos-Timer electronic equipment.

The third stage of the study consisted of statistical processing of the experiment results using Student's t-test and interpretation of the research results.

Results of the study and discussion. Analysis of studies on this issue revealed:

- exaggeration in the posterior push concept of the role of the final straightening of the supporting leg to move the body forward;
- underestimation of the energetic acceleration of the foot and lower leg of the free leg forward during the support period;
- insignificance of vertical repulsion from the beginning of the support period [2].

In the course of their work, the authors formulated the main provisions of an alternative concept (Figure 1).

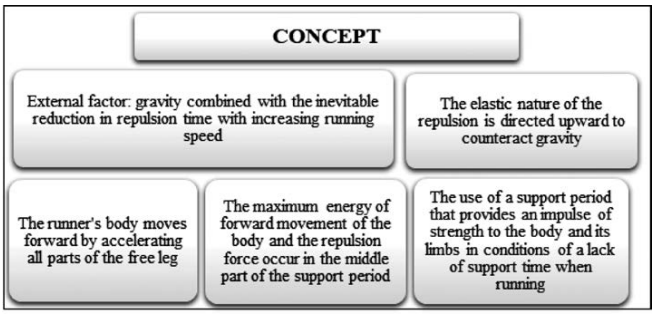

Figure 1. The concept of improving running technique

The basis of the new concept is the quality of the repulsion, which is determined by its elasticity to counteract gravity, and not by the power of the final repulsion. Elastic take-off does not provide for the accentuated energy of the «back push», while the landing becomes elastic rather than shock-absorbing. Fundamental to the new concept is the verticality of repulsion, and the forward movement is based on the swing movements of all links of the free leg. When performing a good acceleration of all links of the free leg forward, naturally, in the unsupported period, there is a forward movement forward due to the inertia of the shin in front of the leg, unless the runner specifically slows it down. This is the most important provision of the new biomechanical concept.

Comparing the new biomechanical concept with the «wheel» mechanism of moving the body forward, it is worth noting that the main provisions of the latter are also used in the concept proposed by the authors. However, the new concept reveals the features of the

external factor, the verticality of the direction of repulsion at a steady speed when running, the essence of elastic repulsion. When running along a distance, the resulting direction of take-off is close to vertical. In this case, there is a balance of impulses of external forces, and the impulse of the support reaction force does not have a braking component

To implement our concept and improve the results in the running disciplines of multi-athletes, two sets of exercises were developed and experimentally tested, which have an effective effect on the running step technique (Figure 2).

COMPLEXES	
Set of exercises 1 focuses on moving the swing leg forward: 1) jumps with forward movement; 2) running on straight legs; 3) multi-jumps with maximum forward movement, constantly reducing the number of multi-jumps on a set segment of the distance; 4) running along a distance using a "foot activator"; 5) running in a simulator with a block load system "X-trend Run Rocket".	**Set of exercises 2 is aimed at training elastic repulsion:** 1) jumping up on one/two legs; 2) jumping from an elevation and rebounding upward; 3) multi-jumps up; 4) bounces on two legs; 5) jumping in separate steps with changing legs.

Figure 2. Options for special exercise sets

To confirm the effectiveness of the proposed sets of special exercises for rationalizing running technique based on coordinated movements of all parts of the swing leg and improving results, athletes were tested before and after the experiment.

Analysis of intergroup differences in test results demonstrated that the level of physical fitness of young men in the EG and in the CG at the initial stage of the study was almost at the same level.

When repeated testing, the athletes results after the experiment, with the exception of the 30 m run, significantly improved ($p<0,05$). Thanks to the use of special exercises, positive dynamics were recorded in the EG: when running 100 m, the results improved by 10,7%; at a distance of 200 m – by 10,5%; times at distances of 600 and 400 m became higher by more than 10%. Therefore, we can conclude with high certainty that performing jumps with a sharply short elastic nature of repulsions is more economical than with a soft one. This is explained by the fact that with a sharply short landing, the kinetic energy of the falling body is better (more fully) converted into the energy of elastic tension of the muscles and ligaments of the legs, as a result of which in the phase of straightening the legs, the athlete spends less of his own energy resources. Thanks to the use of the swing movement, the recovered energy and power of the extensor muscles of the pushing leg during the push-off process, exercises using simulators - a foot activator and a simulator with a block system, the increase in physical fitness and improvement of results in all-around running events has been practically confirmed.

Conclusions. The obtained results of the pedagogical experiment prove the effectiveness of the proposed concept for improving the running technique of multi-athletes over a distance. As a result of the work it was established:

- the lack of the vertical component of the ground reaction force impulse is an external factor limiting running speed;

- when running along a distance, the resulting direction of take-off is close to vertical. In this case, there is a balance of impulses of external forces, and the impulse of the support reaction force does not have a braking component;

- forward acceleration of all links of the swing leg throughout the entire period of support allows you to increase the moment of force of moving the free leg forward, determines the active “rowing” movement of the supporting leg back in the middle part of the support period and promotes the movement of the body forward;

- to reduce energy consumption to maintain running speed, the repulsion energy in the final phase should be as little as possible than the repulsion energy in the initial phase, which improves the elasticity of repulsion;

- an experimental method for teaching running technique has been developed, which includes a well-founded theory of running biomechanics, new methodological techniques for teaching the elasticity of repulsion and moving the body forward, special exercises aimed at elastic repulsion and acceleration of all parts of the fly leg and a method for monitoring running technique over a distance using the method of expert assessment.

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Features of the implementation of the all-union physical culture and sports complex GTO at the regional level

UDC 613.7

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Abstract

Objective of the study was to based on statistical reporting, is to analyze the organizational and managerial conditions for the implementation of the VFSK GTO in the constituent entities of the Russian Federation for 2022 and to identify the level of physical fitness of the countrys population.

Methods and structure of the study. The following methods were used: sociological (questioning, content analysis), study and analysis of federal statistical reporting of 85 regions of the Russian Federation, observation, comparison, mathematical and statistical processing of the results obtained. The research was carried out on the basis of the Federal State Budgetary Institution «Federal Scientific Center for Physical Culture and Sports» and the scientific and methodological center for the implementation of the VFSK «Ready for Labor and Defense» of the Federal State Budgetary Educational Institution of Higher Education «Smolensk State University of Sports», which, as part of the scientific and methodological support of the industry, have been established since 2017. annually monitor the implementation of the WFSK GTO in the Russian Federation.

Results and conclusions. Multi-level monitoring made it possible to systematically and objectively evaluate management decisions within the framework of the implementation of this complex in the country, and annual statistical information to monitor the target indicators of the Strategy for the Development of Physical Culture and Sports in the Russian Federation, to identify problematic areas and development prospects, to assess the results of physical culture, sports and recreational activities, training and work of personnel, as well as determine indicators of physical fitness of various population groups.

Keywords: *GTO complex, physical preparedness, federal district, insignia, testing, tests.*

Introduction. Effective use of the opportunities of physical culture and sports in promoting health, education and introduction to a healthy lifestyle of children, adolescents, youth and adults of the country is considered a priority task of the Government of the Russian Federation, which, as part of measures to implement the Strategy for the Development of Physical Culture and Sports in the Russian Federation for the period until 2030, initiated a number of measures aimed at improving health and well-being, as well as raising the standard of living of the country's population through physical education and sports. The revival of the All-Russian physical culture and sports complex «Ready for Labor and Defense» VFSK (hereinafter referred to as VFSK GTO) and its integration into the domestic system of physical education created an urgent social order for a new comprehensive study of the physical fitness of the Russian population [6]. The complex, as a socio-cultural phenomenon during the period of introduction and implementation, has become the most important part of the physical culture of the individual and society and acts as a factor that unites and stimulates the interests of all age categories of citizens of the Russian Federation.

The modern vector of development of the physical activity of the population involves the formation of knowledge that generalizes physiological, biomechanical, pedagogical and socio-psychological approaches to the development of state requirements of the All-Russian Sports and Physical Culture GTO [1, 3, 4, 5]. The normatively approved frequency of optimization of state requirements of the complex involves improvement every four years and all changes are determined by: modernization of state policy in the field of physical culture and sports; changing level of physical fitness of the population; an accumulated array of scientific data on the ranges of physical activity and the level of physical fitness [1, 2, 3].

Objective of the study was to based on statistical reporting, conduct an analysis of the organizational and managerial conditions for the implementation of the All-Russian Sports Sports Complex GTO in the constituent entities of the Russian Federation for 2022 and identify the level of physical fitness of the country's population.

Methods and structure of the study. The following methods were used: sociological (questioning, content analysis), study and analysis of federal statistical reporting of 85 regions of the Russian Federation, observation, comparison, mathematical and statistical processing of the results obtained. The research was carried out on the basis of the Federal State Budgetary Institution «Federal Scientific Center for Physical Culture and Sports» and the scientific and methodological center for the implementation of the VFSK «Ready for Labor and Defense» of the Federal State Budgetary Educational Institution of Higher Education «Smolensk State University of Sports», which, as part of the scientific and methodological support of the industry, have been established since 2017. annually monitor the implementation of the WFSK GTO in the Russian Federation.

Results of the study and discussion. Personnel support for activities to prepare the country's population to meet the standards (tests) of the GTO complex in 2022 was carried out by attracting 111 056 specialists, with 27% of the total number being specialists in rural areas. The largest number of specialists involved in preparing the population to comply with the GTO standards, relative to the number of people living in the federal district, are involved in the Central, Ural and Northwestern Federal Districts, the lowest percentage was recorded in the Siberian, Southern and North Caucasian Federal Districts. At the same time, as a percentage of the number of residents in the Federal District, things are better in rural areas with the involvement of specialists in the Volga, Central and Ural Federal Districts, and worse in the Far Eastern, North Caucasus and Northwestern Federal Districts. If we consider the number of specialists involved in testing in each federal district relative to the population living in it, we can note that the most such specialists are in the Ural, Volga and Northwestern Federal Districts, and the least in the Central, Far Eastern and North Caucasian Federal Districts.

Monitoring of the number of subjects who took part in testing and the effectiveness of meeting the standards of the requirements of the GTO complex for insignia by the population of the Russian Federation from the I to the XI stages was carried out on the ba-

Physical fitness of the population of the Russian Federation according to the results of the VFSK GTO tests from stages I to XI in 2022.

Federal District	Number of people who took part in the tests VFSK GTO	Number of people who completed the VFSK GTO tests	The number of people who completed the VFSK GTO tests for a specific insignia		
			Gold	Silver	Bronze
Far Eastern	70 624	38 161	13 701	13 586	10 874
Privolzhsky	661 960	348 029	11 6470	111 377	120 182
Northwestern	259 717	177 544	69 961	52 405	55 178
North Caucasian	57 294	34 824	15 078	10 390	9 356
Siberian	316 289	186 623	74 997	62 491	49 135
Ural	318 222	205 133	65 940	70 078	69 115
Central	813 604	470 899	174 953	164 125	131 821
Southern	660 880	292 258	92 613	97 905	101 740
Total	**3 158 590**	**1 753 471**	**623 713**	**582 357**	**547 401**
% of the number of participants	-	**55,5**	**19,8**	**18,4**	**17,3**
% of those who completed the tests	-	**-**	**35,6**	**33,2**	**31,2**

sis of processing materials from the implementation of the VFSK GTO events in all constituent entities of the Russian Federation in 2022, presented in the form of federal statistical observation 2-GTO [7]. The number of the population of the Russian Federation who took part in the tests of the All-Russian Federal Sports Complex GTO in 2022 was 3 158 590 people, and 55,5% were able to fulfill the requirements for insignia (see table). The largest number of people from the total population living in the federal district took part in the Southern Federal District (4,0%), slightly lower figures in the Ural (2,5%) and Volga (2,3%) Federal Districts, and the lowest values in the Northwestern (1,9%), Far Eastern (0,9%) and North Caucasian (0,6%) Federal District.

From the figures presented in the table, we can conclude that the work on testing the VFSK GTO complex for various insignia in the reporting year is best carried out in the Central Federal District, where 470 899 people completed the tests, and the worst situation is in the North Caucasus Federal District, in which only 34 824 people were able to cope with such tests.

At the same time, the analysis shows that, relative to the number of people living in a particular federal district, the percentage of those who completed the VFSK GTO tests for one or another insignia is greatest in the Southern Federal District (1.8%), in second place is the Ural Federal District (1,7 %), and third here are representatives of the North-Western Federal District (1,3%). The lowest percentage of the number of people who completed the tests compared to the number of residents in the federal district was recorded in the Siberian (1,1%), Far Eastern (0,5%) and North Caucasus (0,3%) Federal Districts.

A qualitative parameter - the ratio of the absolute number of people who took part in the VFSK GTO tests to the number who completed such tests shows that here the leaders are representatives of the North-Western Federal District (68,4%), followed by the Ural (64,5%) and North-Western Federal District. Caucasian (60,8%) Federal District. The results are below the national average (55,5%) in the Far Eastern (54,0%), Volga (52,6%) and Southern (44,2%) Federal Districts. That is, in general, it can be stated that every second resident of our country who took part in the tests of the VFSK GTO completed such tests for one or another insignia.

The regulatory requirements of the GTO complex for the gold insignia in 2022 in the Russian Federation were fulfilled by 35,6%, for the silver – 33,2% and for the bronze – 31,2% of people. If we take into account the number of all those who took part in the tests, then these figures are lower – 19,8, 18.4 and 17,3 percent, respectively. A uniform distribution of those who completed tests of the complex across the three stages (as well as throughout the country) is observed in the Southern, Volga and Ural Federal Districts, and the greatest variability in this indicator is in the North Caucasus, Siberian, Northwestern and Central Federal Districts.

The best, in terms of the number of people who completed the VFSK GTO tests for a golden insignia, is the North Caucasus Federal District (43,3%). This is followed by the Siberian (40,2%) and Northwestern (39,4%) Federal Districts. The percentage of those who completed tests for the gold badge is lowest in the Volga (33,5%), Ural (32,1%) and Southern (31,7%) Federal Districts. Most of all received a silver badge in the Far Eastern (35,6%), Central (34,9%) and Ural (34,2%) Federal Districts, and the least number of tests for such a distinction were able to complete tests in the Volga (32,0%), North Caucasus (29,8%) and Northwestern (29,5%) Federal District. The largest number of subjects who received a bronze badge was recorded in the Southern (34,8%) Federal District, slightly less in the Volga (34,5%) and Ural (33,7%) Federal Districts.

For greater clarity, we calculated the percentage of people who completed the VFSK GTO tests from stages I to V (6-17 years old), which includes schoolchildren of various ages, from stages VI-IX (18-59 years old), which includes the most able-bodied population of the country and X-XI (60 years and older) stages, where older people are located. In general, in the Russian Federation, a clear preponderance (74,3%) is observed in the younger - first group (6-17 years old), followed by representatives of mature age (18-59 years old), whose percentage was 24,3% of all those who completed the tests VFSK GTO for one or another insignia in 2022. The contribution of the oldest group - the third group (60 years and older) to the number of those who completed the tests in 2022 was only 1,4%.

The largest number of schoolchildren (grades I–V) completed the VFSK GTO tests in the North Caucasus Federal District (87,3%), followed by representatives of the Siberian (83,0%) and Central (79,8%) Federal District. The figures are slightly lower in the Ural (79,7%) and Far Eastern (78,4%) Federal Districts. The percentage of people who completed the tests in this age group of the total number of people who

passed the tests of the complex in their federal district is lowest in the Volga (77,9%), Northwestern (65,4%) and Southern (55,0%) FO.

In the second group (VI-IX stages) the leaders were representatives of the Southern (42,5%), Northwestern (33,2%) and Far Eastern (20,8%) Federal Districts, and the least in this group were those who completed the VFSK GTO tests of the total number of those who received the distinction in the reporting year in the federal district, was recorded in the Central (18,9%), Siberian (16,0%) and North Caucasus (12,3%) Federal Districts.

In the oldest group - the third group, which was represented by residents of our country, whose age was 60 years and older, the largest percentage of those who were able to complete the tests of the complex was also in the Southern (2,5%) and Northwestern (1,4%) FO. Residents of the Volga Federal District were somewhat behind them (1,3%).

C**onclusions.** Multi-level monitoring made it possible to systematically and objectively evaluate management decisions within the framework of the implementation of the All-Russian Physical Culture and Sports GTO in the country, and annual statistical information makes it possible to monitor the target indicators of the Strategy for the Development of Physical Culture and Sports in the Russian Federation, identify problem areas and development prospects, assess the results of physical education, sports and recreation activities, training and work of physical education personnel, the use of sports facilities, as well as to determine the indicators of physical fitness of various population groups, the development of the field of physical culture in organizations and educational institutions.

The attractiveness of the GTO complex will be increased by the implementation of measures that came into force on April 1, 2023, to improve its regulatory testing part, which include bringing age levels into line with the reality of the development of human physical qualities and the transition from 11 to 18 age levels of the complex, with the establishment time intervals for students and youth are no more than 2 years, for adults - no more than 5 years within each level [6].

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Features of organizing strength health programs for women of the second mature age based on a psychophysical approach

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Abstract

Objective of the study is to improve the psychophysical state of women of the second mature age based on the assessment of various components of adaptation in the process of strength training in a gym.

Methods and structure of the study. The experiment was conducted at the Impulse Sports Palace in Protvino (November 2023 – February 2024). The study involved 27 women aged 35-55 years (average age 47,2), 12 people in the experimental group and 15 in the control group. All participants had various health conditions. To assess heart rate variability, the Psychotest software was used. The assessment of women's physical fitness included: pull-ups from a hanging position while lying on a low bar, push-ups from the knees, lifting the body from a supine position, bending forward from a standing position.

Students included in the experimental group were offered a health route that expands adaptation reserves, forming a stable set of defensive reactions that allow them to resist negative influences and maintain health. It is characterized by the use of power loads with a tonic effect, making maximum use of the entire range of stress factors. A distinctive feature was also the presence of cyclicity and staging of loads.

Results and conclusions. The inclusion of coordination and psychophysical components in strength training, identification of stress factors and their timely correction made it possible, without increasing the power of strength work, not only to contribute to the improvement of physical conditions comparable to the control group, but also to significantly and reliably increase the indicators of the neuropsychic and regulatory components of adaptation.

Keywords: *women of the second mature age, strength training, health route, psychophysical approach, adaptive reactions.*

Introduction. Modern living conditions lead to significant psychologization of all aspects of life, which is expressed in a consistent increase in pathological adaptation reactions: first, the neuropsychic level of adaptation, and then the regulatory one. The constant signs of a working woman are: anxiety, fatigue, headaches, apathy... Physical exercise has a high health potential, as noted in the Strategy for the Development of Physical Culture and Sports until 2030. Unlike large cities, in small settlements there is a gym the gym is one of the most popular forms of exercise, along with aerobic programs for women aged 35-55 or more. Strength programs for women of the second mature age are mainly based on the basic principles of bodybuilding and do not take into account the peculiarities of the course of adaptation processes and existing deviations in health [2, 3].

Among women of the 2nd mature age who have health problems, the increase in pathological adaptive reactions is quite widespread. By assessing the adaptive capabilities of the body based on indicators of heart rate variability and the neuropsychic link of adaptation, it is possible to identify their correlation dependence. Moreover, adaptive changes in the neuropsychic link always precede changes in the immune-endocrine response and disturbances in heart rate variability [1, 4].

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To assess heart rate variability, we used the Psychotest software. The assessment of women's physical fitness included: pull-ups from a hanging position while lying on a low bar, push-ups from the knees, lifting the body from a supine position, bending forward from a standing position.

Methodology of conducting classes. In the control group, warm-up, cool-down, and exercises to develop flexibility are performed by the trainees independently after training by a trainer and with additional consultations throughout the entire training period. In this group, there was a lack of cyclicity and periodization of loads, typical of fitness programs. The training session itself is aimed at obtaining the maximum possible functional shift in order to achieve the maximum effect of supercompensation.

Students included in the experimental group were offered a health route that expands adaptation reserves, forming a stable set of defensive reactions that allow them to resist negative influences and maintain health. It is characterized by the use of power loads with a tonic effect, making maximum use of the entire range of stress factors (hypoxia, psychotraining, coordination exercises...). A distinctive feature was also the presence of cyclicity and staging of loads (adaptation, conditioning, coordination, psychophysical and recovery stages).

The adaptation stage is characterized by the use of power loads of a trophic nature (a small number of repetitions, 2-4 approaches with a degree of effort of no more than 50% of max), to increase the overall anabolic background. At this stage, non-standard techniques are mastered and adapted to a specific student, and relaxation influences are also applied aimed at mitigating stressful conditions, if any were identified as a result of functional testing.

The conditioning stage is characterized by the use of expanding the volume and nature of power loads in a tonic mode, and hypoxic training.

At the coordination stage - strength training using suspension training and using an unstable support. In the warm-up and cool-down, in addition to stretching, there are wave gymnastics complexes.

The psychophysical stage is characterized by the creation of conditions for associated psychophysical influence (in conditions of time shortage, space limitations, in conditions of gaming and competitive activity; inclusion of creative activities).

During shock microcycles, it is recommended to conduct classes using the method of functional training, including switching from speed to power, to coordination, etc.)

Classes were conducted over a 6-month period from September 2023 to March 2024. On average, all women studied 2-3 times a week. Attendance was 2,71 in the control group and 2,57 in the experimental group.

Results of the study and discussion. Comparing the final test indicators (see table), we can conclude that the parameters of strength qualities changed approximately equally in both the control and experimental groups. The most significant differences

Dynamics of the psychophysical state of women during training

Name	Control (n=15)		Experimental (n=12)	
	Before	After	Before	After
Fitness level				
Push-up	13,3±2,28	19,1±2,01	14,4±2,18	19,5±2,20
Raising the torso	16,2±1,2	21,1±1,94*	16,0±1,84	21,7±1,23*
Pull-up	8,3±2,28	13,9±1,09*	8,0±1,13	12,5±0,96*
Forward lean	-3,9±1,93	-0,5±1,47	-4,2±2,02	1,9±1,29*
Adaptation state				
Indicator of activity of regulatory systems (PARS)	6,4±0,69	5,9±0,75	6,2±0,74	4,1±0,35*
Neuropsychic (according to I.N. Gurvich)	26,2±2,03	23,2±1,82*	24,6±2,29	16,8±1,34*

* $p < 0,05$

were identified in the results of the «forward bend» test, which can be explained by the experimental group's more advanced ability to relax.

It was found that in the dynamics of motor qualities, there were no significant differences between the control and experimental groups. It is characteristic that the differences in adaptation indicators were significant. The changes recorded in the indicators of the experimental group not only register reliable progress, as in the control group, they indicate the transition of the body to a higher and more economical level of functioning. Such changes lead to increased activity and mood of women in everyday life, improving its quality.

Conclusions. The experimental methodology, which was based on taking into account the nature of adaptive reactions, constructed using a psychophysical approach, showed that health-improving strength training for women of the second mature age should focus not on the maximum increase in strength indicators, but on improving intermuscular and intramuscular coordination. Timely identification and correction of stress factors in the process of health-improving training can significantly expand the adaptive potential of those involved.

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Civilization approach in sportsology

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Abstract

Objective of the study of sportology through a civilizational approach based on the analysis of the effective practices of outstanding coaches such as Dmitry Petrovich Korkin.

Methods and structure of the study. The main content of the study is the indigenous methodology of Indigenous Methodology, according to which athletes are assigned additional moral responsibilities to preserve the spiritual freedom, ethical ideals and spiritual values of their people, absorbed from birth and embodied in the cultural codes of socialization.

Results and conclusions. The civilizational approach, in contrast to the universalism of the formational method, introduces methodological aspects of the institutionalization of sports into sportology: national characteristics of physical culture and ethnic sports, international trends in civilizational and country dimensions, the impact of global climate change on the interaction of civilizations in the South-North direction, equality of peoples and civilizations , an appeal to the sporting potential of Eurasia.

Keywords: *civilization, sportology, indigenous methodology, ethnosport.*

Introduction. Sport is traditionally considered a symbol of peace, goodness and celebration. According to M.E. Nikolaev, «Sport is a model of the world!» [7]. The axiological potential of modern sport can be divided into two levels: social values (intellectual, intentional, mobilization, valeological) and the values of personal ability to live - personal vitality.

Personal values determine a person's resilience, his ability to live, and his social and communication skills. The first President of the Republic of Sakha (Yakutia), Mikhail Efimovich Nikolaev, who in his student youth was actively and successfully involved in kettlebell lifting and weightlifting, wrote the book "Without overcoming, life loses its meaning. Northern lifestyle" [1]. In it, he states that human health is an absolute value and reveals personal values: «Friendliness, nobility, breadth and openness of soul are naturally demonstrated by truly strong and healthy people» [1]. He established the northern sporting lifestyle.

Modern sportology is in dire need of scientific understanding of the emerging crisis of Olympism values and is looking for new methodological paradigms in the study of effective practices in sports and physical culture. As noted by L.I. Lubysheva, the defining social function of physical culture should be a human-creative function, the leading side of which is the spiritual, realized in a unique form through human motor activity [5]. The value is the relationship that develops between a coach and an athlete, between an athlete and a sports team. The value potential of sports culture is complemented by the possibility of self-affirmation in society. Based on the possibilities of such a wide value potential, it is necessary to create a system of sports education. And this system should not only be based on social forms of education, but also purposefully be included in the pedagogical process [5].

Objective of the study of sportology through a civilizational approach based on the analysis of the effective practices of outstanding coaches such as Dmitry Petrovich Korkin.

Methods and structure of the study. The main content of the study is the indigenous methodology of Indigenous Methodology, according to which athletes are assigned additional moral responsibilities to preserve the spiritual freedom, ethical ideals and spiritual values of their people, absorbed from birth and em-

bodied in the cultural codes of socialization.

Results of the study and discussion. Based on the current agenda, we propose the introduction of two methodological approaches into sportsology. The first is the new transformative paradigm of Indigenous Methodology.

As rightly noted by A.K. Mamedov, new criteria of capital have emerged: intelligence, creativity and brightness of personality for indigenous peoples, this means reliance on a kind of «internal property» (i.e. Indigenous Methodology), manifestation of personal creative interest in the intellectual heritage and worldview of their ancestors, accumulation and «packaging» them into a modern scientific and educational paradigm, vocational education programs, and into the system of spiritual values of an integral civilization [6].

The primary task of indigenous peoples is to create conditions for the formation of the ability to become adequate to the major civilizational changes that are manifested in modern trends in physical culture and sports, and the introduction of ethnic sports into the international sports movement. Indigenous peoples attach special importance to issues of education and the use of Indigenous Methodology as a scientific educational paradigm [2].

The intellectual property of the autochthonous population in ethnosports is based on the values of the epistemology of indigenous peoples, who perceive the world in the integrity and unity of man with the spirits of his ancestors, natural phenomena, flora and fauna.

The ethno-pedagogical education of the indigenous peoples of the Republic of Sakha (Yakutia) has been studied and scientifically substantiated by scientists, they reveal the uniqueness, originality, originality of the folk pedagogy of Yakutia regarding traditional folk physical education.

Harsh climatic conditions require constant physical activity (N.K. Shamaev, 1996; V.P. Kochnev, 1998; M.I. Lytkin, 2008). Therefore, as noted by V.P. Kochnev, the indigenous peoples of the Republic of Sakha (Yakutia) - in the process of their historical development, due to extreme climatic, difficult socio-economic conditions of existence, heavy physical labor (cattle breeding, horse breeding, farming, hunting) invented their own physical exercises, games, competitions, significantly different from those in other regions of Russia. With the passage of time, these physical exercises, games and competitions created by the people moved into a coherent system of physical education, the main task of which was the struggle for survival, physical development of the ethnic group, health improvement, preparation for work, respect for the traditions, customs of the people and nature [4] .

Thus, ethnosport as a cultural heritage and as a manifestation of living physical culture and professional sports of indigenous peoples becomes the subject of indigenous methodology. This approach involves studying the subject of research «from the inside», from the perspective of the people themselves, their values and awareness of their unique identity.

The pedagogical and coaching style of Teacher Dmitry Petrovich Korkin is an example of a Teacher in the field of ethnosport, primarily because he is distinguished by his intelligence. It teaches an athlete to think, reflect, develop spiritually, measure their goals, successes and defeats in a public multicultural and multinational space as a representative of their ethnic group. And the athlete's victory becomes not his personal victory, but a piggy bank to affirm the dignity of his people through sports. This approach completely deprives the development of a sense of superiority and love of money and strengthens hard work, diligence and patience as the basis of the sports profession [9].

Hard work as one of the main ethno-pedagogical requirements in personality education was used by D.P. Korkin not only as a method of physical exercise, but also an intellectual method of self-observation of one's physical condition during work operations in everyday life. Those who are accustomed to work will be successful in life and in various areas of professional activity. Students of D.P. Korkina became the human capital of Yakutia.

Indigenous methodology reveals the peculiarities of the sense of aesthetics and ethics characteristic of an ethnic community and in the types of physical culture and sports created by them. In traditional sports, the affirmation of the beauty of the human body, its endurance, fortitude to overcome risks, love for native culture, adaptive abilities to the challenges of the ecosystem and communities is the essence of sports games. The beauty of national sports combines the spirit and body of man as a creation of the Higher Powers, in the Yakut worldview as Ayyykikhite - the bearer of physical and spiritual talents. Teacher D.P. Korkin instructed his students to follow the rituals and customs of traditional spiritual culture when preparing and conducting sports competitions and events [1].

Dmitry Petrovich Korkin, as a Sakha Teacher, preached the values of his people as an additional means of educating athletes aimed at achieving the highest skills and Olympic victories. At the same time, he refuted the vanity of the victories achieved. The winning athlete was one of the friendly sports team of the school, he was not elevated by any special honors, but they cultivated a sense of belonging to the victory of the sports school. D.P. Korkin formulated his credo as a Teacher as follows: "Noruotumtuhugarsurekhtaberintukhary, surakhbaatynan, suhuohuyarynanuleliirgebelemmin" (Literally: I am ready to work for my people while my heart is beating and my joints are holding). An athlete bears additional moral responsibility for spiritual freedom, ethical ideals and spiritual values of his people, nurtured by mother's milk in the hearts and cultural codes of socialization [12].

The second is a civilizational approach. He proceeds from the fact that humanity has created different types of civilizations, differing, first of all, in their leading values.

The civilizational research method allows us to go beyond the historically established stereotypes of sportology, based primarily on the dominance of geopolitical, ethnocultural and religious factors in Europe.

In sports, as in some kind of sociocultural focus, the main lines of modern civilization converged and accumulated [10]. It marks a continuous desire for innovation, for the highest achievements. At the same time, the semantic field of modern sport contains a largely archaic (mythical) status, which makes it possible to go beyond the spirit of competition and the financial measurement of the results of competitions. The civilizational approach opens up the possibility of introducing cultural types of local civilizations into sportology. Sport becomes, in the modern technogenic, rationalized world, a social lacuna in the existence of traditional culture and its values. He strives to create a technology for transforming the physical resource and moral values of an athlete.

The civilizational approach, in contrast to the universalism of the formational method, introduces the following methodological aspects of the institutionalization of sport into sportology:

– To identify the origin of national characteristics of physical culture and ethnic sports under the influence of geocultural values of local civilizations, anthropological features of adaptation to the surrounding landscapes of the habitat.

– To identify international trends in the civilizational and country dimensions created by the world's oceans, without giving preference only to sports created around the Mediterranean. Currently, the Arctic Ocean has become the new Mediterranean, as the Arctic states and indigenous peoples have become subjects of modern history, and therefore of sports science.

– Identify the impact of global climate change on the interaction of civilizations in the South-North direction. If earlier population migration took place along the meridian route, now we note the civilizational shifts of humanity along parallel lines; southern countries are becoming active actors in sports in the established tradition since the time of Pierre de Coubertin's "Nordic Games". Asian, Arab, and Eurasian games attract the interest of athletes and sports scientists. Such games introduce the values of an organizing civilization into sportsology.

– Recognize the equality of peoples and civilizations, their cultural diversity and uniqueness, including in relation to the culture of health and sports games, competitions characteristic of local civilizations. Each culture is unique and contributes to the global sports process.

– Affirms the equality of civilizations. Currently, the competitiveness of sports and Olympism is based on the values of Western technogenic civilization, which emasculates the values of HomoLudens.

– Frees the European civilization from the established priority of Olympism and opens up the sporting opportunities of other continents and types of human ecumene. In this regard, turning to the sports potential of Eurasia becomes especially relevant.

The geographical division of the Eurasian continent into Europe and Asia is very arbitrary and conventional. The creator of the concept of geosophy in the school of Eurasianism P.N. Savitsky singled out Eurasia as a special middle continent with cultural and historical originality [11].

We need to look for a sustainable foundation of shared values. In the northern hemisphere, this could be the Great Steppe with the common values of nomadic civilizations, the worship of the Eternal Blue Sky, with ecosophical values and the exaltation of the spiritual values of Life. The peoples of the Great Steppe have a common cultural core. This is a commitment to a culture of peace, non-violence, a focus on human life, the common roots of the identity of ethnic groups in historical continuity.

Conclusions. The answer to the «challenge of harsh lands», according to A. Toynbee, is to preserve the «principle of Nomandism» - the law of conservation of movement, for only in movement does life develop. Continuous nomadism led to the development of vast spaces of the Great Steppe and its influence on other landscapes, the consolidation of historical memory, experience of interaction and mutual influence along the South-North and East-West axis. Our Yakut experience in organizing international children's games "Children of Asia" showed the promise of this idea.

Currently, recognition, recognition, restoration, preservation and revival of the unity of the cultural origins of the peoples of the Great Steppe is becoming an urgent civilizational humanitarian task of good neighborliness and cooperation in the world sports movement.

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Historical approach to the substantiation of the philosophical theory of Olympism

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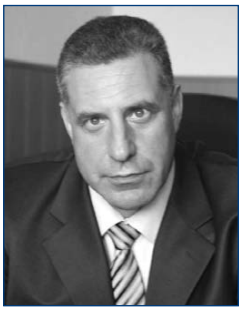

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Abstract

Objective of the study is to based on a historical approach, substantiate the philosophical theory of Olympism.

Methods and structure of the study. Scientific work is organized using the method of analyzing extensive factual information and formal logical methods, operations and modes used in constructing «proof by converse».

Results and conclusions. It is shown that the values and ideals of Olympism were initially and still remain at the level of mythologemes and ideologemes; there is no thousand-year break in the holding of the Olympic Games, but, on the contrary, there is a continuity of various and original forms of Olympism; the presence and ideological character of these historical forms of Olympism prove the impossibility of the existence of the philosophy of Olympism.

Keywords: *Olympic philosophy, mythologems of Olympism, modern practice and ideology of the International Olympic Committee.*

Introduction. The relevance of the presented research is based on the fact that in domestic and foreign specialized literature there is a point of view according to which the centuries-old tradition of the development of sports has not been able to develop its own philosophy, immanent in the sports competitive process itself and capable of serving as a reliable ideological and methodological basis for sports science. And what is mistakenly taken for the philosophy of sports is actually the philosophy of Olympism [1, 3, 8, 13].

Indeed, this attempt to replace the philosophy of sports with the philosophy of Olympism is being practiced, but it does not fundamentally change anything, because the philosophy of Olympism as such also does not exist.

Objective of the study is to based on a historical approach, substantiate the philosophical theory of Olympism.

Methods and structure of the study. Scientific work is organized using the method of analyzing extensive factual information and formal logical methods, operations and modes used in constructing “proof by converse”. With this type of evidence, a hypothesis is put forward that presupposes or asserts the existence of a scientific-philosophical or simply philosophical theory of Olympism, reliably reflecting the historical tradition of the formation of ancient and modern culture of Olympic agons or competitive games.

Results of the study and discussion. Much of the available information about the ancient and modern history of the formation and development of agonal culture, in particular the Olympic agon, is either not taken into account, or is incorrectly interpreted, or is not at all consistent with real historical facts and patterns [1, 4-13]. Here are three main arguments:

• ancient authors (Pindar, Aristotle, Timaeus from Tauromenia, Pausanias), who left us information about the Olympic Games, lived much later than the era when the Olympic games-competitions arose and initially developed. Accordingly, they themselves, to one degree or another, most likely drew information not from documentary written sources, but from orally transmitted myths and legends;

• Baron de Coubertin and his closest associates, modeling modern Olympism, made a total mistake by confusing the ancient Greek cultural model of Olympism with the Phoenician-pirate and Roman-imperial civilizational agonal models in the same place;

• Hans Lenk, one of the most famous modern philosophers of sports, in his works devoted to the problems of social exclusion in sports and its modern mythologization, states the following:

– in modern sports all the main forms of social exclusion occur. However, they do not reflect the essence of the sports process, but exist as isolated deviations from the norm and private corruption and bureaucratic abuses;

– the new philosophical anthropology of sports is called upon to effectively combat such negativity, which, in essence, is a modern sports Olympic mythology, created in the image and likeness of the myths about Hercules;

– athletes brought up on such a mythology will serve as an example for the general public, and the combined efforts of Olympians and their fans will create a public opinion intolerant of social exclusion in sports [3, 8, 9].

Unfortunately, the figure of Hans Lenk crowns an entire direction of modern Western philosophy of sports, represented by many famous names. For example, the thesis about sport as a new myth:

– develops in the works of Magnane and Barth;

– is consistent with Paul Weiss interpretation of professional sport as the embodiment of an individual striving for personal distinction and isolation, but which is undoubtedly based on the values of European culture (Weiss P., 1969);

– sounds in the statements of Vander Zwaag (or Zwaag), who, along with Gebauer, believes that «the significance of sport for the individual, as well as for the spectators, is derived from the (mythological - author) interpretation and projections of social processes» (Vander Zwaag H.J., 1972);

– considered by Herbert Gebauer in the aspect of a market economy. Gebauer «sees in sport a mechanism for creating myths on an industrial scale, «a whole myth industry», where heroism, the hero is a means of «bringing the nation and the individual consumer to agreement» (Gebauer G, 1996);

– builds in the works of Hans Lenk a whole concept that, according to Lenk, is capable of explaining all the phenomena of sport, based on the interpretation of sport as a modern staging of some kind of «secularized myth» [3, 8, 14].

Numerous facts of the mythological formation of ancient and more modern forms of Olympism actualize the problem of significant correction of a number of the most important ideas about its history. Let's name just a few of them:

• ethno-national origin of Olympism;

• time and reasons for the emergence of Olympism;

• the real social essence, functions and historical significance of Olympism;

• historical forms and periodization of Olympism;

• reasons for the temporary disappearance of Olympism from the historical arena [4-13].

It should be recognized that the modern Olympic movement has already taken root in the field of sports, organically merged into the structure of sports, that is, it has finally and irrevocably become sportified, mythologizing the «values and ideals of Olympism» in order to remove the obvious contradiction between what should be and what is [4-14]. This is proven by many fragments of scientific research on the modern history of physical culture and sports, for example, related:

– with the fraudulent takeover of the international women's sports movement and the Scandinavian Nordic Games in the 30s of the 20th century;

– with the hypocritically declared and repeatedly violated principles of refusal to professionalize and commercialize the Olympic Games, non-interference in the foreign and domestic policies of countries by the IOC;

– with the actual implementation through the provisions of the IOC Code of Ethics of the program of its economic and political power, turning the IOC into an unsupervised monopolist in the field of international elite sports [4, 8].

Conclusions. The values and ideals of Olympism were initially and still remain at the level of mythologies and ideologies that hide the true social

essence and the real social (economic and political, secular and religious, cultural and civilizational) nature of the activities, the purpose and role of the International Olympic Committee, which many authors quite deservedly called «Olympic imperialism».

In our opinion, there is no thousand-year break in the holding of the Olympic Games, but, on the contrary, there is a continuity of various and unique forms of Olympism. At the same time, the question arises about the reasons and grounds for the historical priority of precisely Coubertin's, Western European version of Olympism;

The presence and ideological nature of these historical forms of Olympism prove the impossibility of the existence of the philosophy of Olympism for several reasons:

– the defining type of worldview for Olympism at all times was not philosophy, but mythology;

– ancient Olympism (like other agons, as well as Roman sports) existed as a religious-ritual complex, which in ancient times categorically excluded the possibility of philosophical reflection relating only to the spheres of secular knowledge and activity;

- medieval Olympism was based on Christian ideology and the Christian philosophy of thinkers such as John Chrysostom, who considered Christians as successors to the work of Olympians, but who no longer performed a physical, but a spiritual feat;

– Olympism of subsequent eras was also based not on its own, but on Christian religious-humanistic, and then also on educational philosophy with a dominant emphasis on mythology;

– in the process of their sportization, the modern Olympic Games have undergone a full cycle of social changes, essentially abandoning their own basic original principles, but retaining most of them purely declaratively and thereby turning today into a flexible instrument of massive political influence, in which member states The IOC are effectively deprived of their rights and become passive and silent partners.

Thus, modern practice and ideology of Olympism are based on mythological and political types of worldview, which completely exclude even the minimal possibility of the emergence of Olympic philosophy.

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Level of mastery of spiking technique among male university students in physical education classes incorporating volleyball elements

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Keywords: *volleyball, spike.*

Abstract. This article presents the results of assessing the level of mastery of the spiking technique by students learning the fundamentals of volleyball in university physical education classes.

Introduction. The technique of volleyball play involves complex coordinated movements. At the university, students are taught the basics of volleyball techniques during physical education classes, which are held once a week. Given the limited frequency of these initial training sessions, data on the level of mastery of the spiking technique by students in these classes are of scientific interest.

Research Objective. To determine the level of mastery of the spiking technique among male students in physical education classes with elements of volleyball at the university.

Research Methodology and Organization. The study was conducted at the National University of Oil and Gas «Gubkin University» with students participating in the "Sports Games" section of physical education during the spring semester of the 2023-2024 academic year (n=102). The physical education classes included the implementation of a lesson plan for mastering the spiking technique, consisting of 12 sessions, developed based on an analysis of scientific and methodological literature on the theory and methodology of volleyball [1, 2]. The classes were conducted according to the academic schedule. Assessment of the students' mastery of the spiking technique in physical education classes included two tests: "Throwing a tennis ball over the net while jumping with a two-step approach from zone 4" (conducted during the 6th session) and "Spike with a two-step approach from zone 4 on a ball set up from below with both hands" (conducted during the 12th session).

Research Results and Discussion: The control drill "Throwing a tennis ball over the net while jumping with a two-step approach from zone 4" was rated "excellent" by 34% of the students, "good" by 34%, "satisfactory" by 23%, and 4% of the students failed the task. The second test, "Spike with a two-step approach from zone 4 on a ball set up from below with both hands," was completed with an "excellent" rating by 24% of the students, "good" by 32%, "satisfactory" by 17%, and 27% failed the task. The results of the control tests on the spiking technique indicate that 96% of the students successfully mastered the jump with a two-step approach for the spike, while 73% mastered the spike with a two-step approach.

Conclusion. At the university, during physical education classes, male students are capable of demonstrating a high level of mastery of the spiking technique after completing 12 thematic sessions aimed at teaching this volleyball technique.

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