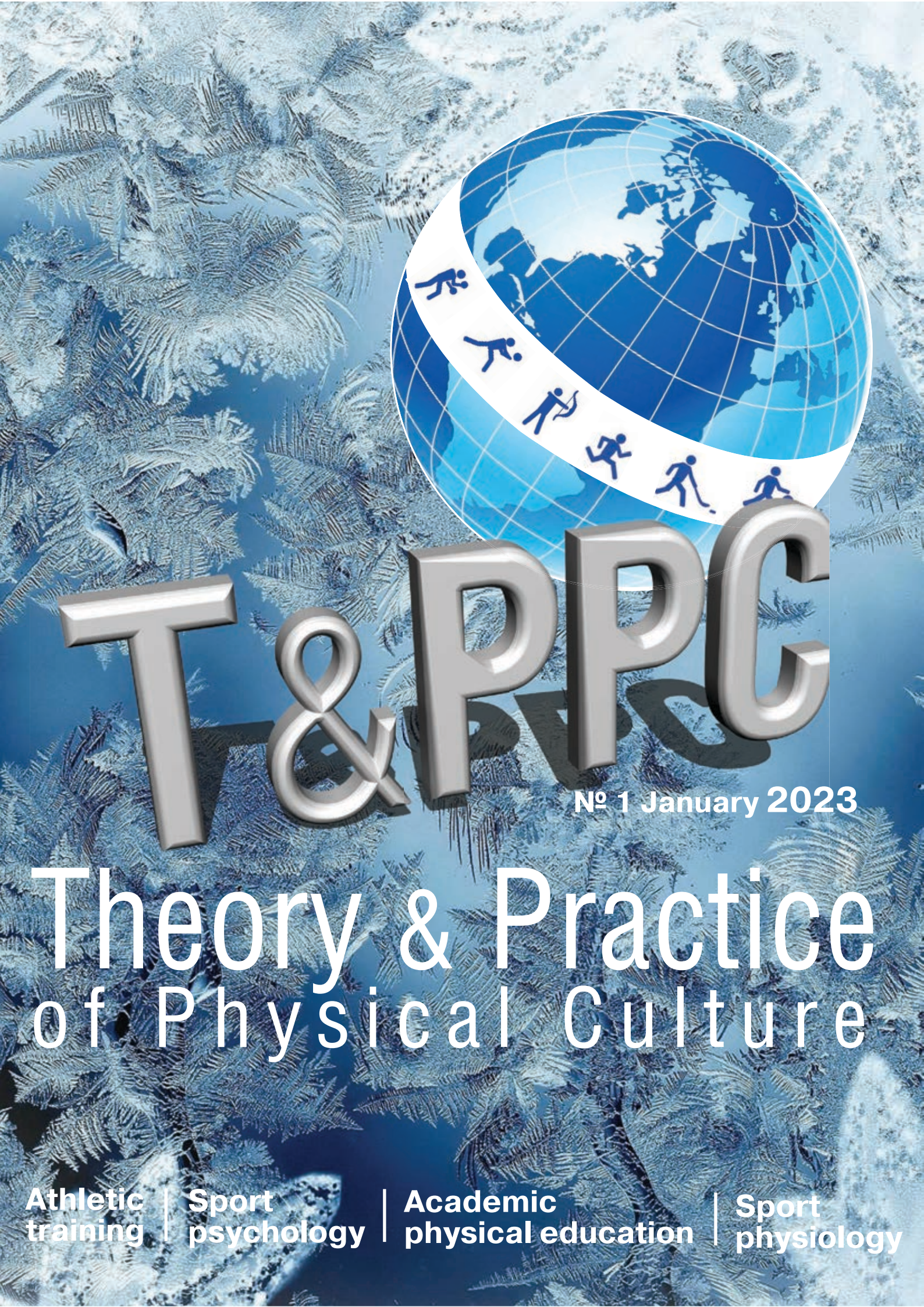
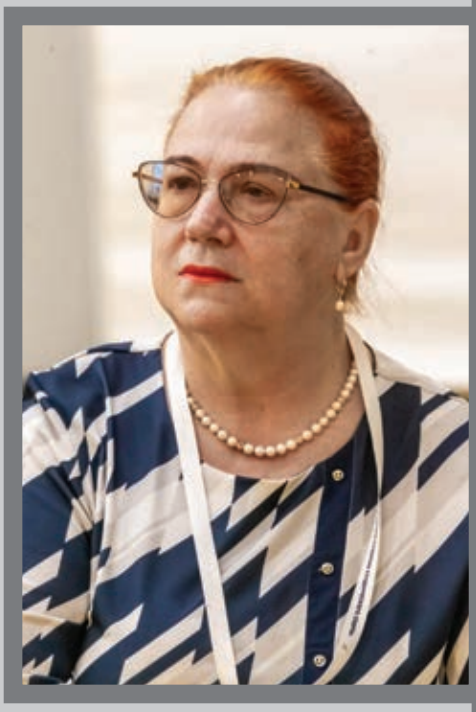


№ 1 January 2023

Theory & Practice of Physical Culture

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

The phenomenon of «cohesion» from the standpoint of sociological knowledge



The social challenges of modern society actualize the problem of understanding the phenomenon of «cohesion» of small groups and professional teams. Sociological science explains this phenomenon from the standpoint of the social space in which the group is only a structure that performs its functions in accordance with the target orientation of the organization in which it operates.

In the development of sociological ideas about the cohesion of a group, there is a tendency towards a comprehensive study of this concept, including it in the range of psychological and social problems of small groups. In this case, *the orientation of scientific views on the construction of a model of a group as a community in the context of a social environment is proposed.*

For a broad understanding and consideration of the problems of the «cohesion» phenomenon, an effective way to study them is *specific sociological research* based on the survey method, the main advantage of which lies in the possibility of knowing various areas of social practice.

A demonstration of the successful application of sociological tools in the study of the problem of team cohesion was the study presented in this issue of the journal, conducted by a group of authors led by A.N. Melentiev. Scientific work The subject of the research was the identification of the attitude of teachers of the Department of Physical Culture and Sports to professional activities in the conditions of teamwork. The results of the survey showed that respondents are in favor of a collegial management style that is typical for a team. At the same time, an important aspect of professional activity is the establishment of friendly and constructive business relations between members of the cathedral team. Thus, a specific sociological study allows us to expand the presentation of the socio-psychological characteristics of the «cohesion» phenomenon.

In conclusion, I would like to emphasize that the use of sociological tools in the study of various aspects of «cohesion» implements the interdisciplinarity of methodological approaches in the study of this scientific category

We invite scientists to publish the results of scientific research aimed at developing sociological tools related to the study of social problems in the field of physical culture and sports.

Editor-in-Chief of TPPC,
Honored Worker of Physical Culture of the Russian Federation
Dr. Hab., Professor L.I. Lubysheva

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Contents

Kinematic analysis of swimming technique based on synchronous video recording of linear motion

UDC 797.2

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Abstract

Objective of the study was to evaluate and select swimming technique models that are most adequate to the swimmer's individual motor predisposition based on the measurement of hydrodynamic parameters and synchronous video recording of linear movement.

Methods and structure of the study. The application of methods for fixing the kinematic and dynamic structures of the swimmer's movements is considered on the example of the swimming technique of the test swimmer-master of sports, specializing in freestyle swimming for medium distances. The registration of variables was carried out by means of synchronous video recording of the swimmer's underwater movements during linear swimming.

Results and conclusions. As a result of comparison of various technical variants of arm stroke in front crawl swimming, the possibility of using methods of fixing the kinematic and dynamic structures of stroke movements for an individual choice of a swimming technique model, the most adequate individual motor predisposition of the swimmer, has been established. As a personal effective technical option for swimming, an extended arm stroke along an S-shaped trajectory to the hips with the following statistical indicators is proposed: positive inertia force - 275 N; force of negative inertia - 146 N; average speed - 1.64 m/s; standard deviation - 0.12; coefficient of variation - 6.6%; efficiency of swimming technique - 75.4%.

Keywords: *swimming technique, synchronous video recording of swimmer's movements.*

Introduction. When organizing a modern swimmer's training, the technical movements of the body, the features of the work of the arms and legs under water are not available for obvious visualization. For this reason, coaches and athletes do not objectively evaluate the efforts developed by a swimmer to overcome water resistance and achieve the required speed [1, 4].

The stability of speed and power is considered an objective criterion of the reference swimming technique [2, 5]. The more stable the variations in the speed and power of the swimmer's efforts (hands, feet, in coordination) during each stroke, the more perfect his technique [6]. Water resistance depends on speed and acceleration, and the inertia force depends on the power of stroke movements [3, 7].

In this regard, research and fixation of the kinematic and dynamic structures of the swimmer's movements seem to be extremely relevant.

Objective of the study was to evaluate and select models of swimming technique that are most adequate to the swimmer's individual motor predisposition based on the measurement of hydrodynamic parameters and synchronous video recording of linear movement.

Methods and structure of the study. The application of methods for fixing the kinematic and dynamic structure of the swimmer's movements is considered on the example of the swimming technique of the test swimmer - a master of sports specializing in freestyle swimming for medium distances.

The registration of variables was carried out by means of synchronous video recording of the swimmer's underwater movements during linear swimming.

Based on the records of speed and acceleration at a 25-meter distance, the parameters of those swimming segments were printed, in which the speed and acceleration of the swimmer did not depend on the in-

crease in speed after repulsion from the pool wall. The survey protocol contained the necessary swimming parameters of an athlete - average speed, standard deviation, coefficient of variation, swimming technique efficiency coefficient (%), variance, achieved percentage of personal maximum speed.

The test subject sought to develop the highest possible average speed for each measurement (swimming with one arm, one leg, in full coordination), so that it was close to or exceeded their competitive speed.

The *standard deviation (m/s)* characterizes the deviation from uniform velocity; it should be as small as possible.

The *coefficient of variation* (%) is the ratio of the average speed to the standard deviation, expressed as a percentage. Due to the large range in each stroke and swimming element, this is a very sensitive indicator of swimming technique. The coefficient of variation should be as small as possible.

Dispersion (m/s). The variation reports the amount of energy required to maintain a constant speed. The higher the dispersion, the more energy the swimmer needs to apply to maintain average speed. This data is especially important for long distance swimmers and should be kept to a minimum.

The effectiveness of swimming technique (%) was calculated based on the work done during swimming. This is the amount of work at constant speed divided by the actual amount of work corresponding to the measured actual variable speed. In each measured element of swimming technique, it should be as close as possible to 100%.

A selected portion of the speed records was printed. This was followed by a synchronous graphic recording of the acceleration, obtained using the velocity correlation. Recording the acceleration provided an opportunity to evaluate the effectiveness of the swimming technique; a smaller spread in terms of acceleration indicated a better swimming technique. The calculation of the positive or negative inertial force, obtained by multiplying the acceleration value at the selected recording point by the swimmer's mass, gives the inertial force value in newtons (N).

A record of a video recording of the athlete's measured swimming technique at the moment of fixing his lowest speed (the most serious mistake in swimming technique) was compiled.

Results of the study and their discussion. The swimmer used various hand stroke techniques in front crawl swimming. The trajectory and length of the stroke by hand were different. In the first variant, the arm stroked in a perpendicular position under the midline of the body; in the second version, the limb moved along the bend closer to the hips; in the third version, the rowing link moved along a shortened trajectory with a powerful stroke at a high frequency of movements. The swimmer used the first version of the stroke technique, starting from the basic training stage. The second and third options were considered to identify the optimal swimming technique, taking into account the athlete's motor predisposition.

Statistical indicators based on a graphical recording of the swimming technique for the assessed section of the freestyle stroke with a perpendicular trajectory under the midline of the body: over a period of 9.16 s; performed 10 stroke cycles by hand; positive acceleration increased six times to 2.8 m/s ; the magnitude of the positive inertia force was 184 N; the magnitude of the force of negative inertia was 186 N; average speed - 1.68 m / s; standard deviation - 0.05; coefficient of variation - 4.7%; efficiency of swimming technique - 78.6%.

Statistical indicators based on a graphical recording of the swimming technique for the assessed section of the stroke with hands along an S-shaped trajectory to the hips: for a period of time 9.16 s; performed 10 stroke cycles by hand; positive acceleration increased seven times to a value of 3.6 m/s ; the magnitude of the positive inertia force was 275 N; the magnitude of the force of negative inertia was 146 N; average speed - 1.64 m / s; standard deviation - 0.12; coefficient of variation - 6.6%; efficiency of swimming technique - 75.4%.

Statistical indicators based on a graphical recording of the swimming technique for the estimated section of stroke with hands along a shortened trajectory with a powerful effort at a high frequency of movements: for a period of time 9.16 s; performed 14 rowing cycles by hand; positive acceleration increased seven times to a value of 3.6 m/s; the magnitude of the positive inertia force was 234 N; the magnitude of the force of negative inertia was 217 N; average speed - 1.56 m / s; standard deviation - 0.20; coefficient of variation - 6.9%; efficiency of swimming technique - 72.3%.

The decrease in speed in the second measured section highlights the fact that the swimmer has not mastered the third stroke. The undesirable increase in the third standard deviation confirms that the new version of the freestyle armstroke is not stable and is

worse than in the first two versions of the technique. The coefficient of variation reliably confirms the unstable control of the short stroke technique. The 6.2% decrease in the efficiency of swimming technique in the second attempt is too large. This also confirms that the new stroke technique in the crawl method has not been mastered. Analysis of the video recording shows that the swimmer unevenly changes the length of arm movements.

It can be assumed that after fully mastering the technique of an extended stroke with arms along an S-shaped trajectory to the hips, the athlete will be able to achieve the highest results in crawl swimming for medium distances. Observations from international competitions confirm that the world leaders in freestyle swim with arm strokes in an S-shaped trajectory to the hips.

Based on the low value of the coefficient of variation and the increased percentage of the effectiveness of the swimming technique, it is possible to determine the physical readiness, mental state, functional readiness, the swimmer's ability to minimize hydrodynamic resistance.

Conclusions. The developed software evaluates the controlled technical parameters. In addition to extensive basic measurements, each swimmer, in cooperation with the coach, can solve and objectively evaluate individual individual problems in swimming technique.

The method of measuring speed, evaluated results, the contribution of significant information to improving the efficiency of performances at the main competitive distance will allow athletes to cope with the volume and intensity of the load by improving the swimming technique.

References

1. Bolotin A.E., Bakaev V.V., Van Zvieten K.Ya. et al. Differentsirovannaya podgotovka plovtsov-marafontsev k sorevnovaniyam na otkrytoy vode s uchetom tipov energeticheskogo metabolizma [Differentiated training of marathon swimmers for open water competitions, taking into account the types of energy metabolism]. Teoriya i praktika fizicheskoy kultury. 2020. No. 10. pp. 37-39.
2. Dubitskaya E.V., Hristov V.V. Osobennosti tekhniki plavaniya sposobom brass na distantsii 50 metrov s uchetom antropometricheskikh dannykh sportsmenok [Features of the technique of swimming in the breaststroke method at a distance of 50 meters, taking into account the anthropometric data of athletes]. Teoriya i praktika fizicheskoy kultury. 2022. No. 6. p. 92.
3. Zyukin A.V., Ponimasov O.E., Bolotin A.E. et al. Kontrol perifericheskoy gemodinamiki plovtsov kategorii «Masters» [Control of peripheral hemodynamics in swimmers of the “Masters” category].Teoriya i praktika fizicheskoy kultury. 2020. No. 12. pp. 67-69.
4. Ponimasov O.E., Ryabchuk V.V. Issledovaniye kosvennykh pokazateley rabotosposobnosti plovtsov [Study of indirect indicators of swimmers' working capacity]. Teoriya i praktika fizicheskoy kultury. 2016. No. 1. pp. 71-72.
5. Ponimasov O.E., Ryabchuk V.V., Titarenko Yu.A. Tekhniko-vremennyye parametry strukturnogo tsikla plavaniya yunykh krolistov [Technological and temporal parameters of the structural cycle of swimming of young rabbits]. Teoriya i praktika fizicheskoy kultury. 2020. No. 11. pp. 83-85.
6. Ryabchuk V.V., Ponimasov O.E., Titarenko Yu.A. et al. Kinematiko-dinamicheskiye indikatory tekhniki plavaniya yunykh plovtsov-brassistov [Kinematic and dynamic indicators of swimming technique for young breaststroke swimmers]. Teoriya i praktika fizicheskoy kultury. 2022. No. 1. pp. 95-97.
7. Stamburg I.N., Ponimasov O.E., Grachev K.A. et al. Ekonomizatsiya tipologicheskikh kombinatsiy tekhniki prikladnogo plavaniya pri obuchenii kursantov voyennykh vuzov [Economization of typological combinations of applied swimming techniques in teaching cadets of military universities]. Teoriya i praktika fizicheskoy kultury. 2016. No. 2. pp. 16-17.

Methods of organizing special strength training for young short-distance runners in a one-year training macrocycle

UDC 796.422.12

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Abstract

Objective of the study was to develop and substantiate a methodology for organizing special strength training for short-distance runners aged 14-15 years in an annual training cycle.

Methods and structure of the study. The experiment involved young sprinters training at the sports school in Al-Diwaniya (Iraq). An experimental group (EG, n=13) was formed, classes in it were conducted on the basis of the author's methodology for organizing special strength training for sprinters in a yearly cycle, and a control group (CG, n=15), which trained according to the program generally accepted in Iraq for this contingent .

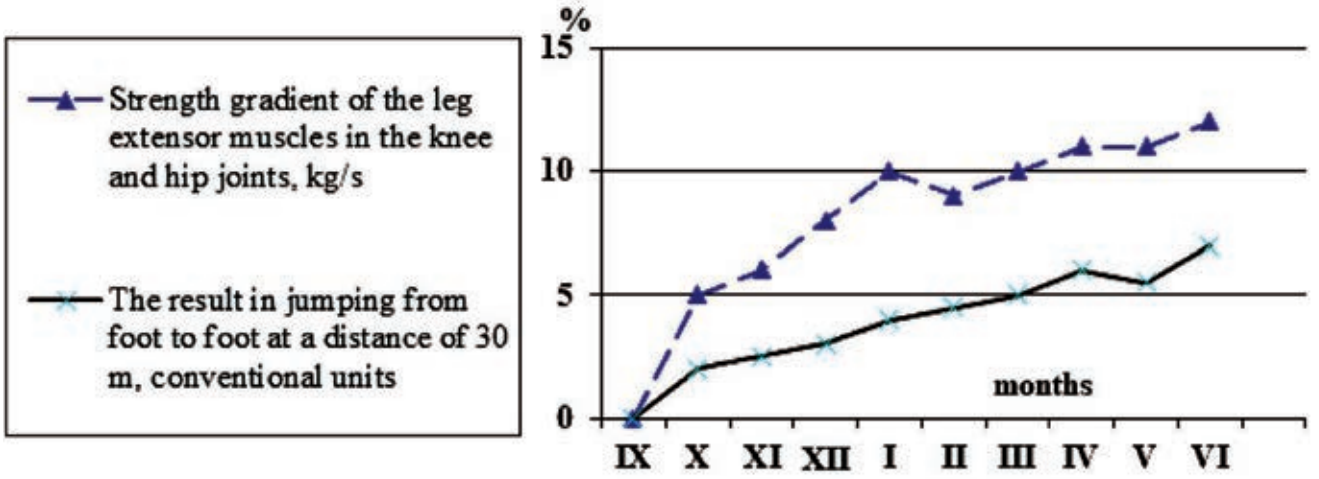
Results and conclusions. The results of an experimental verification of the developed methodology for organizing special strength training for short distance runners aged 14-15 years in the annual training cycle are presented. The data obtained testify to the productivity of this technique, as well as the content of the normative indicators that assess the readiness of young sprinters.

Keywords: *young runners, sprint, methodology, strength training, annual cycle, organization.*

Introduction. In practical work for coaches, it is of interest to determine the fundamental direction of the training process of athletes at the stages of their long-term improvement, which makes it possible to properly specify the predominant nature of certain training influences in the annual training cycle. At present, a large amount of methodological material has been accumulated on the use of various speed-strength exercises in the training of runners, aimed at increasing the speed of running [2, 4, 8]. However, the problem of choosing rational means of special strength training and the peculiarities of their use at the stages of a year-long training of young sprinters have not received sufficient justification and theoretical explanation.

Objective of the study was to develop and substantiate a methodology for organizing special strength training for short-distance runners aged 14-15 years in an annual training cycle.

Methods and structure of the study. Based on our own results of the study [3], the generalization of the practical experience of organizing training in sprint for young athletes in the Republic of Belarus and Iraq, as well as the analysis of literature data [1, 6, 8], a methodology was developed for organizing special strength training for sprinters 14- 15 years in an annual cycle. The methodology includes the predicted dynamics (model) of young sprinters' special strength readiness indicators in the annual cycle and a rational quantitative combination of the content and distribution of the volume of the runners' main training tools, taking into account the specifics of their training at specific stages of the macrocycle (figure). It was assumed that the use of the methodology can stimulate the growth rate of the special preparedness of young athletes in the most favorable period of the natural development of their body.



Training Tools	Volume per macrocycle (X±σ)	Load distribution by months (%) of the total volume for the macrocycle									
		IX	X	XI	XII	I	II	III	IV	V	VI
Running up to 80 m (95-100%), km	11,0±1,5	-	-	-	11	14	14	16	17	17	11
Running 100-300 m (91-100%), km	13,0±3,5	-	8	12	14	16	16	14	10	6	4
Running 100-300 m (80-90%), km	32,0±4,5	7	15	15	17	18	12	7	5	3	1
Running over 300m (below 80%), incl. cross, km	60,0±9,8	13	10	17	18	14	11	8	7	1	1
Jumping exercises, km	6,0±1,0	18	15	10	12	12	11	9	6	5	2
Various strength exercises	65,0±5,0	11	14	19	16	15	10	5	5	4	1
Games and game exercises, hours	75,0±3,5	17	18	15	13	12	10	6	3	2	1
General developmental exercises, hours	50,0±3,5	15	18	15	12	10	10	8	7	4	1

Methodology for organizing special strength training for young sprinters in a one-year training macrocycle: at the top - the predicted dynamics in the macrocycle of the indicators of the explosive strength of the leg extensor muscles and the result of the jump test (in %); below - the main means of preparation and their distribution in the macrocycle as a percentage of the total (100%) volume

To test the effectiveness of the implementation of the training methodology, young sprinters training at the sports school in Al-Diwaniya (Iraq) took part in the experiment. An experimental group (EG, n=13) was formed, classes in it were conducted on the basis of the developed methodology for organizing special strength training for sprinters in an annual cycle, and a control group (CG, n=15), which trained according to the generally accepted (traditional) in Iraq for of this contingent to the program adopted for educational and sports institutions.

Results of the study and their discussion. When developing the structure of the annual training cycle for young sprinters aged 14-15, the main attention was paid to the problem of optimal training planning for young athletes, which provided for such an organization of training that would exclude forcing their training. Based on the received factual material, the following directions were identified in the organization of training of young runners, designed to reduce this probability.

1. It is planned to reduce the volume of running at maximum speed by 10–15% among young Iraqi runners, since, according to specialized literature, it is not advisable to focus on highly specialized speed training at the initial stages of long-term improvement [1, 6]. At the same time, the fact was taken into account that the use of a significant amount of speed-strength exercises, games and game exercises aimed at developing speed and strength contributes to a more successful formation and consolidation of motor skills.

2. It was planned to increase (by 20-25%) the volume of general physical training, which was recorded in the young sprinters of the Republic of Iraq. At the same time, the introduction of gaming exercises, outdoor and sports games, etc. was predominantly carried out. into the training process of young Iraqi sprinters. The total fulfillment of the volume of the annual load of special physical training means is calculated. The volume of the latter was no more than 40-50% of similar training means for more qualified sprinters.

Changes in indicators of running and special strength readiness of young sprinters aged 14–15 in the control (CG) and experimental (EG) groups during the pedagogical experiment

Indicators	CG		EG	
	Relative growth, %	p	Relative growth, %	p
Running 100 m from the start, s	3,4	>0,05	9,3	<0,05
Running 20 m on the move, s	3,5	>0,05	6,2	<0,05
Running 60 meters from the start, s	3,9	>0,05	5,2	<0,05
Standing long jump, m	8,1	<0,05	15,8	<0,05
Triple jump from a place, m	10,9	<0,05	18,7	<0,05
30 m jumping from foot to foot, c. units	9,3	<0,05	13,4	<0,05
Shot throw with two hands from the bottom forward (3 kg), m	12,5	<0,05	17,7	<0,05
Absolute strength of leg extensor muscles, kg	8,8	<0,05	13,4	>0,05
Strength gradient of leg extensor muscles, kg/s	4,4	>0,05	21,9	<0,01
The strength of the leg extensor muscles in 0.1 s, kg	4,5	>0,05	24,8	<0,01

3. In accordance with the recommendations of specialists in the field of children's and youth sports [1, 6], when organizing the load on monthly cycles, there is no rigid concentration (more than 20% of the annual load per month) of unidirectional agents (which is typical for adult athletes!). The fact was taken into account that the deployment of the required adaptive processes in the body of athletes under the influence of training influences determine the volumes and intensity of the latter, and when building the educational and training process of a young sprinter, it is necessary to try to select exercises that provide the best development of the abilities that are dominant for the specifics of motor activity [3, 5, 7, 8].

4. It was also taken into account that the age of 14-15 years is characterized by hormonal changes in the body and active growth processes, which directly imprints the body's responses to external stimuli. And if for highly qualified sprinters volume is mainly a quantitative characteristic, then for young sprinters high volume can become a factor intensifying the training load.

Based on a comprehensive analysis of the training conditions and in accordance with the objectives of the experiment, the next step was to develop the structure of the annual cycle for the sprinters of the experimental group. In Iraq, a one-cycle periodization of the annual training cycle for young athletes has been adopted (competitions are not held in winter). Therefore, the presented materials were concretized and refined for the conditions of Iraq, and the load parameters were distributed for a single-cycle periodization of the annual cycle. Annual changes in the indicators of running and special strength training of sprinters aged 14-15 in the experimental and control groups are presented in the table.

It can be seen that a number of changes in the performance of young runners in the control group, at the end of the formative experiment, are statistically significant. At the same time, the increase in sports results, as an integral indicator of the effectiveness of the organization of the training process, indicates a less significant contribution of these characteristics in sprinters from the CG to their final result in the 100-meter run.

In the experimental group, all recorded indicators (with the exception of the absolute strength of the leg extensor muscles) statistically significantly improved compared to the initial level and surpassed the indicators of the control group. In our opinion, this can be explained by different approaches to the organization of special strength training in the annual cycle and at its specific stages. So, in the EG, the volume of running at maximum speed was significantly reduced, but at the same time, emphasis was placed on increasing the length of the running step of young sprinters with the help of targeted speed-strength exercises, which made it possible, while maintaining the pace of running, to increase the maximum speed. If we compare the initial and final indicators of the characteristics aimed at the rapid achievement of maximum strength in the shortest period of time (the gradient of the strength of the leg extensor muscles and the strength of the leg extensor muscles manifested in 0.1 s), then it can be noted that they have a high statistical significance of differences in the EG ($p<0.01$). This can be interpreted by the influence of the applied training program, in which the annual volume of speed-strength training was increased.

Thus, the means used in the experimental group caused more dramatic changes in the strength char-

acteristics of muscle groups that carry the main load in speed running and the potential growth of sports results in sprinting depends on the development level of which.

Conclusions. The data obtained testify to the productivity of the developed methodology for organizing special strength training for 14-15 year old sprinters in the annual training cycle, as well as the content of the normative indicators that assess the preparedness of young sprinters. The experimental substantiation of the methodology led to positive changes in the characteristics of special strength training of young sprinters at a statistically significant level, and an increase in sports results, as an integral indicator of the effectiveness of the organization of the training process, indicates a significant contribution of these characteristics to the final result in the 100-meter run.

References

1. Balakhnichev V.V., Zelichenko V.B. [ed.]. Begay! Prygay! Metay! [Run! Jump! Throw!] Official IAAF Training Manual for Athletics. Moscow: Chelovek publ., 2013. 213 p.
2. Borzov V. Osobennosti metodiki trenirovochnogo protsessa sprintera [Features of the methodology of the sprinter's training process]. Nauka v olimpiyskom sporte. 2020. No. 3. pp. 86-91.
3. Vrublevskiy E.P., Khorshid A.Kh, Albarkayi D.A. Vliyaniye napravlennosti treniruyushchikh vozdeystviy na rost sily myshts yunykh begunov na korotkiye distantsii [Influence of the orientation of training influences on the growth of muscle strength in young sprinters]. Teoriya i praktika fizicheskoy kultury. 2019. No. 4. pp. 3-5.
4. Gusinets E.V., Kostyuchenko V.F., Vrublevskiy E.P. Upravleniye trenirovochnym protsessom kvalifitsirovannykh begunov na korotkiye distantsii na osnove miometricheskikh pokazateley myshechnoy sistemy [Management of the training process of qualified sprinters based on myometric indicators of the muscular system]. Uchenye zapiski universiteta im. P.F. Lesgafta. 2012. No. 5 (87). pp. 30-34.
5. Kozhedub M.S., Godun D., Vrublevskiy E.P. Postroyeniye godichnogo makrotsikla beguniy na korotkiye distantsii na etape uglublennoy spetsializatsii [Construction of the annual macrocycle of sprinters at the stage of in-depth specialization]. Teoriya i praktika fizicheskoy kultury. 2022. No. 6. pp. 17-19.
6. Nikitushkin V.G., Chesnokov N.N. Legkaya atletika [Athletics]. Textbook. Moscow: Fizicheskaya kultura publ., 2014. 446 p.
7. Hao U., Kozhedub M.S., Vrublevskiy E.P. [Training of young athletes in sprint in the annual cycle of training]. Teoriya i praktika fizicheskoy kultury. 2022. No. 11. pp. 33-36.
8. Cissik J. Means and methods of speed training. Strength and Conditioning Journal. 2005. No. 27 (1). pp. 18-25.

On the question of the optimal age for starting sports: results of a bibliometric analysis of the works of foreign and russian scientists

UDC 796.01:61

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Abstract

Objective of the study was to identify the degree of elaboration of the issue of determining the optimal age for starting sports on the basis of a bibliometric analysis of the works of foreign and Russian scientists.

Methods and structure of the study. Scientific work was carried out in three stages: 1) identification of the main areas of research on this issue using the PubMed database; 2) construction of a complex of top phrases (the most common) in the selected areas of research; 3) analysis of the works of domestic scientists using the scientific electronic library eLIBRARY.RU according to the selected top phrases. Publications for the period 2018-2022 were analyzed. Used library bibliometrix R-package. The study sample included 167 scientific publications on the topic under study.

Results and conclusions. In the course of the analysis, three main areas of research on this issue were identified. Within the framework of the first direction, physiometric, anthropometric and other indicators characterizing the physical development of young athletes are analyzed, the second one examines the effect of physical activity on young basketball players, including the risk of their health disorders and injuries. The studies of the third direction are aimed at studying the factors similar to the second direction of young athletes in another sport - baseball.

Based on a bibliographic search, it was determined that this issue is relevant in modern science and requires additional research to determine the optimal age for starting sports.

Keywords: *optimal age for starting sports, youth sports, bibliometric analysis, bibliometrix R-package, PubMed.*

Introduction. At the present time the issues of increasing the number of people involved in physical culture and sports, including children, are becoming urgent. As the studies show, the early start of sports and suboptimal training contribute to an increase in the risks of children's health disorders [1]. The most highly traumatic sports are currently popular such as ice skating, equestrian sports, rugby [2]. Over a 10-year period, the rate of hospitalizations due to sports-related diseases in Europe and other countries has not significantly decreased [3.].

Bibliographic search showed that there is no unanimous opinion in solving the issues of determining the optimal age of starting to play sports in science. In Russia, the recommended age for the beginning of various types of sports is specified in the standards of sports training [4]. At the same time in the studies of scientists the problem is discussed that the age ranges indicated in the standards are not optimal and do not correspond to the periods of active development of necessary abilities [5], which creates the need for additional research on determining the optimal age for the start of various sports. This determined the purpose of the present study.

Objective of the study was to identify the degree of elaboration of the issue of determining the optimal age for starting sports on the basis of a bibliometric analysis of the works of foreign and Russian scientists.

Methods and structure of the study. The research methodology includes three stages: 1) the allocation

of the main directions of research on the given problem; 2) the construction of a set of top-words on the allocated directions of research; 3) the analysis of works of domestic scientists was carried out with the use of scientific electronic library eLIBRARY.RU on the allocated top-words.

The selection of the main directions of researches on the given problem on the basis of the bibliometric analysis was carried out with the use of bibliometrix R-package library according to the international database of medical and biological publications PubMed. The key query "Age of onset of sports" was used in the study. The method of factor analysis: multiple concordance analysis was used to highlight the main areas of research. Top word combinations are the most frequently encountered word combinations; their construction was carried out according to the abstracts of the analyzed articles. Word combinations of three words - trigrams - were used. Publications for the period 2018-2022 were analyzed.

Results of the study and their discussion. Using the bibliometrix R-package library, 167 scientific publications on the subject under study were found. The total number of citations for the period under study is 10. Figure 1 shows the dynamics of the number of publications and their citations on a yearly basis.

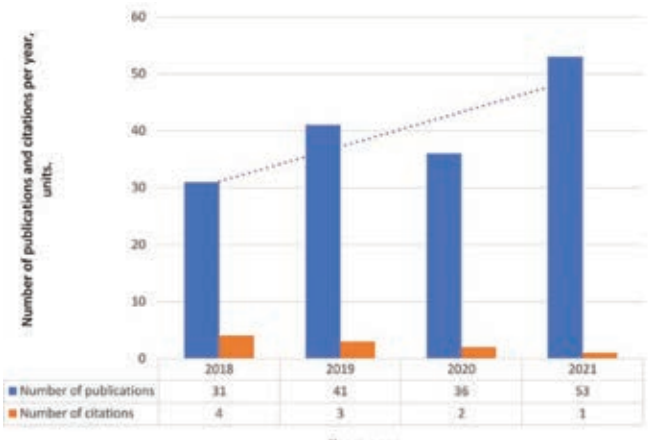

Figure 1. *Dynamics of the number of publications and their citations by years on the problem of determining the optimal age of starting to do sports*

Thus, we can conclude that the above-mentioned problems are gaining relevance in the foreign press, with a decrease in the number of publications in 2020 probably due to the reorientation of research on SARS-CoV-2 (COVID-19). The greatest contribution to the development of theoretical and practical aspects on the issue under study was made by the following scientists: Knechtle B., Nikolaidis P. T., Okorona K. R., Owens B. D., Rosemann T., Ahmad C. S. et cetera.

Figure 2 shows the results of the factor analysis. There are three main directions, the clusters corresponding to the directions are highlighted in different colors.

Within the first direction physiometric, anthropometric and other indicators of physical development of young athletes are analyzed (green cluster in Fig. 2). The greatest contribution to this direction has been made by scientists: Araujo M. P., Lattari E., Castagna C.

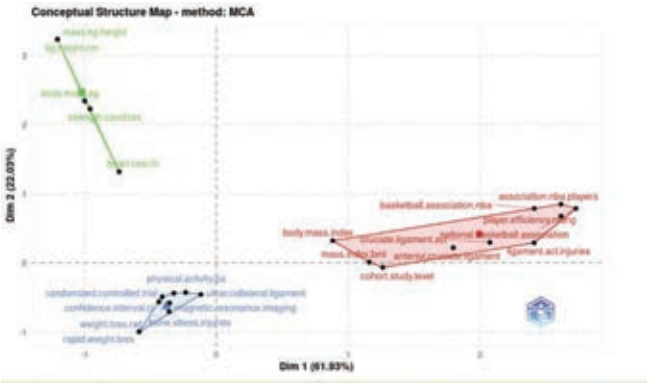

Figure 2. *Directions of research on the problem of identifying the optimal age for starting a sport using factor analysis*

The works of scientists of the second direction analyze the impact of physical activity on young basketball players, including the emergence of risks of violations of their health and injury. Also studied in this direction are the effectiveness of their sports training (Fig. 4 cluster in red). The greatest contribution to the development of this direction has been made by scientists DeFroda S.F., Tramer J.S., Khalil L.S., Lemme N.J. et al. A number of studies have concluded that the early onset of sport contributes to an increase in the incidence of injuries in young athletes.

The third direction of research is similar to the second, but studies are conducted mainly for baseball (in Fig. 4, the cluster is blue). The works of scientists Magrini M.A., Mouton C., K kl Y., Baranauskas M., etc. made a significant contribution.

A bibliographic search within the highlighted directions in the scientific electronic library eLIBRARY.RU allowed us to draw the following conclusions. The first direction of research is represented by scientific publications of Russian authors, mainly in the VAK journals. The greatest contribution to this direction was made by scientists Abramova T.F., Nikitina T.M., Rudenko L.K., etc. In contrast to foreign researches in works of domestic scientists the specified prob-

lematics is investigated taking into account motor activity. Scientific schools located in St. Petersburg, Rostov-on-Don, and Kursk are the most active in this direction. The greatest contribution to the development of theoretical aspects of determining the optimal age of starting to play sports was made by scientists from the National State University of Physical Culture, Sports and Health named after P. F. Lesgaft, St. Petersburg Research Institute of Physical Culture. Abramova T.F., Nikitina T.M., Polfuntikova A. V., Malinin A. V. in a number of studies, they have determined that it is advisable to begin practicing sports from the age of 6 years, this is due to the peculiarities of heterochrony and synchronization of the processes of growth and development of children. They also emphasize the need to emphasize the general physical training of children of this age in children's and youth sports, because it contributes to the harmonious formation of the functions of the basic systems of life support in children [7].

But at the same time in a number of other studies these results are not confirmed. For example, Pasikova M. V. on the basis of the studies justifies the need to start young athletes windsurfing only at the age of 12-14 years.

The obtained research results do not comply with a number of federal standards of sports training used in Russia [4].

The second and third identified areas of research using bibliometrix R-package are not analyzed in the works of domestic scientists.

Conclusions. On the basis of the bibliometric analysis the following conclusions can be made. The problematic of determining the optimal age for starting to practice various sports is gradually gaining relevance in the domestic and foreign press.

Foreign studies mainly focus on determining the patterns of physical development of children engaged in sports, the effectiveness of the training process and reducing the risks of health disorders in young basketball and baseball players. In the works of domestic scientists, in contrast to foreign ones, the issues of identifying patterns of physical development of children are studied taking into account the motor mode and the peculiarities of the construction of the training process. The issues of determining the optimal age of the beginning of sports activities are raised, and these age periods differ in a number of studies.

But the results obtained are currently contradictory: different studies indicate different non-overlapping age periods when it is recommended for children to start playing sports, the specified age range varies from 3 to 14 years. The research results in most cases are not supported by domestic regulatory documents in the field of physical education and sports.

The indicated problems are relevant in modern science, as evidenced by the increase in the number of publications on the topic, and require additional research, including the use of methods of intellectual analysis and computer vision.

References

1. Abramova T.F., Nikitina T.M., Polfutikova A.V. et al. Fizicheskoye sostoyaniye detey 6-10 let s uchetom organizatsii dvigatelnoy aktivnosti [The physical condition of children aged 6-10 years, taking into account the organization of motor activity]. Teoriya i praktika fizicheskoy kultury. 2019. No. 12. pp. 73-75. EDN YEBAQX.
2. Novikova I.I., Erofeev Yu.V., Flyanku I.P. et al. Dvigatelnaya aktivnost i individualnyye nakopitelnyye riski narusheniya sostavlyayushchikh zdorovya shkolnikov [Motor activity and individual cumulative risks of disrupting schoolchildren's health components]. Gigiyena i sanitariya. 2020. Vol. 99. No. 3. pp. 279-285. DOI 10.33029/0016-9900-2020-99-3-279-285.
3. Pasikova M.V. K voprosu o vozrastnom periode, optimalnom dlya nachala zanyatiy parusnoy doskoy [To the question of the optimal age period for starting sailing lessons]. Innovatsionnoye razvitiye. 2018. No. 3 (20). pp. 139-140.
4. Federalnyye standarty sportivnoy podgotovki. Ministerstvo sporta RF [Federal standards of sports training. Ministry of Sports of the Russian Federation]. Available at: https://www.minsport.gov.ru/sport/podgotovka/82/5502/ (date of access: 06.08.2022).
5. Lystad R.P. Incidence, costs, and temporal trends of sports injury-related hospitalisations in Australian children over a 10-year period: A nationwide population-based cohort study. Journal of Science and Medicine in Sport. 2019. Vol. 22. is. 2. pp. 175-180. Available at: https://doi.org/10.1016/j.jsams.2018.07.010.
6. Mitchell P.D., Pecheva M., Modi N. Acute Musculoskeletal Sports Injuries in School Age Children in Britain. Injury. 2021. Vol. 52. is. 8. pp. 2251-2256. Available at: https://doi.org/10.1016/j.injury.2021.03.043.

Interrelation of indicators of body composition with the effectiveness of competitive activity of highly qualified biathletes

UDC 796.01:612

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Abstract

Objective of the study was to determine the relationship between the body composition of highly qualified biathletes and the indicators of competitive activity at the stages of long-term training.

Methods and structure of the study. The scientific work was carried out with the participation of biathletes of the qualification Master of Sports, Master of Sports of International Class and Honored Master of Sports in the sports seasons of 2015-2022. Bioelectrical impedance analysis (BIA) was carried out on a Maltron Bioscan 920-II using the equations for the European population with the choice of the level of sports fitness - "Athlete".

Results and conclusions. Monitoring of changes in body composition using BIA Maltron BioScan 920-II and caliperometry allows you to assess current and cumulative changes in the process of long-term training of biathletes with high accuracy and reliability. Using the BIA Maltron BioScan 920-II allows you to obtain indicators that are not available using the caliperometry method. As a result of the analysis, indicators of body composition were identified that can be successfully used in monitoring body composition under the influence of training and competitive loads. The highest relationship among the analyzed indicators of body composition with the speed of movement along the distance has the sum of fat folds and the percentage of adipose tissue (R=0.44-0.51 at P>0.05). An increase in the loss to the leader in terms of movement speed was recorded with a decrease in the content of intracellular water in the body (ICW), protein, potassium, glycogen, percentage of adipose tissue, an increase in the content of extracellular water in the body (ECW) and total body water (TBW).

Keywords: *body composition assessment, bioelectrical impedance analysis (BIA), Maltron Bioscan 920-II, caliperometry, highly qualified biathletes.*

Introduction. The assessment of body composition is of great importance in the analysis of the effectiveness of training programs, diet and other aspects related to the nutrition of an athlete [1, 3]. Modern trends in the development of sports require new approaches to the analysis of body composition, one of which can be BIA [5]. Comparison of BIA with the “gold standard” in assessing body composition contributed to the development of correct regression equations for athletes, which made it possible to conduct a qualitative analysis in sports populations [4]. In 2015, segmental BIA was used for the first time to assess the composition of various body segments in athletes [2].

Objective of the study was to determine the relationship between the body composition of highly qualified female biathletes and the indicators of competitive activity at the stages of long-term training.

Methods and structure of the study. The study was conducted with the participation of biathletes of Masters of Sports, Master of Sports international class and honored Masters of Sports qualifications in the sports seasons of 2015-2022. Age of athletes - 24.1±3.4; height - 166.9±4.4 cm; weight-58.4±3.2 kg.

Bioelectrical impedance analysis (BIA) was carried out on a Maltron Bioscan 920-II using the equations for the European population with the choice of the level of sports fitness - “Athlete”. On the days of the study, the weight of athletes was measured with an accuracy of 0.1 kg, data on height were entered into the program with an accuracy of 1 cm. All measurements were taken in the morning at the same time after waking up in the supine position. The electrodes were attached to the athlete’s hand at the knuckles and wrist, as well as to the foot of the same side of the

body, according to the BioScan 920-II user manual. The assessment of body mass components using the caliperometry method was carried out according to the recommendations of T.F. Abramova [1]. The performance data were obtained during the stage tests in the analytical department of the sports training center of the Ministry of Sports of Russia. Statistical calculations were performed using the Microsoft Office Excel 10 software package.

Results of the study and their discussion. Table 1 shows the indicators of body composition, physical and functional fitness of the biathletes of the Russian national team at the stages of the annual training cycle, obtained using the BIA Maltron Bioscan 920-II and caliperometry. Almost all indicators of body composition have low and medium values of correlation coefficients with indicators of general and special physical fitness, VO_2, and time of work in the MPC test (R = 0.10-0.40 at P>0.05). The coefficient of correlation of height and weight of the body, the integral indicator of BMI with the occupied place in the overall standings of the World Cup, with the speed of movement along the distance and the speed rating turned out to be lower than statistically significant values and was at the level of r=0.06-0.16 at P>0, 05. The coefficient of correlation of height and weight of the body, the integral indicator of BMI with the occupied place in the overall standings of the World Cup, with the speed of movement along the distance and the speed rating turned out to be lower than statistically significant values and was at the level of r=0.06-0.16 at P>0, 05. The highest relationship among the analyzed indicators of body composition with the speed of movement along the distance has the sum of fat folds and the percentage of adipose tissue (R=0.44-0.51 at P>0.05).

Figure 1 shows the dynamics of body composition indicators for biathletes of the Russian national team in 2015-2021. The indicators of muscle mass in these biathletes were at the average level (about 50.1-51.3%), and the fat mass was at the level above the average

Table 1. *Indicators of body composition and physical performance of the biathletes of the Russian national team in the season 2021-2022*

Indicators	Preparation period		Competitive period
	start	end	
BIA Maltron Bioscan 920-II			
height, sm	169,3±5,3	169,3±5,3	169,3±5,3
weight, kg	59,4±3,2	60,7±2,5	60,1±2,8
Body mass index, kg/м^2	20,7±0,7	21,2±0,7	21,0±0,9
FFM,%	86,0±0,8	86,9±0,8	86,6±0,9
FAT, %	13,1±0,8	13,1±0,8	13,4±0,9
TBW, %	65,0±1,6	65,4±1,4	64,7±1,3
ECW, %	42,4±0,8	42,7±0,8	41,8±0,6
ICW, %	57,6±0,8	57,3±0,8	58,2±0,6
ECW/ ICW	0,73±0,02	0,74±0,03	0,72±0,02
BCM, %	58,5±2,4	58,6±1,3	62,3±4,9
ECM,%	28,4±2,0	28,4±2,0	24,2±4,2
Protein, %	23,8±0,9	23,8±0,5	25,3±2,0
Mineral, %	9,5±0,4	9,5±0,2	10,1±0,8
Muscle, %	49,9±2,0	50,0±1,1	53,1±4,2
Glycogen, гр	500±47	602±26	634±63
caliperometry			
MM,%	49,8±2,3	50,4±2,6	50,3±2,2
FM, %	15,1±3,1	14,8±2,7	14,0±3,6
Sum of 7 fat folds, мм	60,5±10,4	58,8±12,7	50,9±11,6
Indicators of physical and functional fitness			
IGFP, units	66,6±7,7	88,7±4,6	-
ISFP, units	27,3±3,1	78,5±10,5	-
VO^2 ml/min/kg	54,7±3,1	68,6±0,8	-
Operation time in the test maximum oxygen consumption, с	183±20	210±40	-

Note: BMI (body mass index); FFM - lean body mass; FAT - total body fat; TBW is total body water; ECW is the content of extracellular water in the body; ICW is the content of intracellular water in the body; ECW/ ICW - content of extracellular water in the body to intracellular water; BCM, body cell mass; ECM, extracellular body mass; Protein - the total amount of protein in the body; Mineral - the total mass of minerals in the body; Glycogen - the total mass of glycogen in the body; Muscle - the total mass of muscles in the body; MM - muscle mass; FM - fat mass; IGFP - index of general physical fitness; ISFP - index of special physical fitness.

Table 2. *Indicators of competitive activity and body composition of biathletes of the Russian Olympic team in the 2020-2022 season*

Name	Season	1*	2*	3*	4*	5*	6*
Mir-va S.	20-21	20	22,68	4,7	48,20	14,30	53
	21-22	29	22,14	6,3	47,65	18,86	62,1
K-vich I.	20-21	28	22,49	6,4	52,1	11,50	46,0
	21-22	23	22,28	5,6	52,5	11,35	42,7
Nig-na У.	20-21	33	22,37	6,8	44,67	12,97	52,1
	21-22	28	22,18	6,2	47,11	10,26	39,6
K-na L.	20-21	44	22,13	9,1	48,2	9,65	51,0
	21-22	61	21,78	10,7	44,5	13,70	49,8
Rez-va K.	21-22	8	22,56	2,5	50,75	10,53	37,8
Vas-va V.	21-22	37	22,05	7,40	47,39	18,81	70,7

Note: 1 - place in speed at the stages of the World Cup; 2* - speed at the stages of the World Cup, km/h; 3* - SC (speed coefficient - loss to the leader in seconds per 1 km distance; 4* - Muscle mass, %; 5* - fat mass, %; 6* - sum of 7 fat folds, mm.*

(12.7-15.3%). The study showed that the average values of weight indicators, BMI, fat and muscle mass in biathletes of the Russian national team remained virtually unchanged over many years. At the same time, during these seasons, Russian biathletes did not experience an increase in the speed of movement along the distance and a significant improvement in speed indicators at the stages of the Biathlon World Cup. Training loads did not cause significant adaptive changes in the body, which was probably the result of insufficiently effective training programs used.

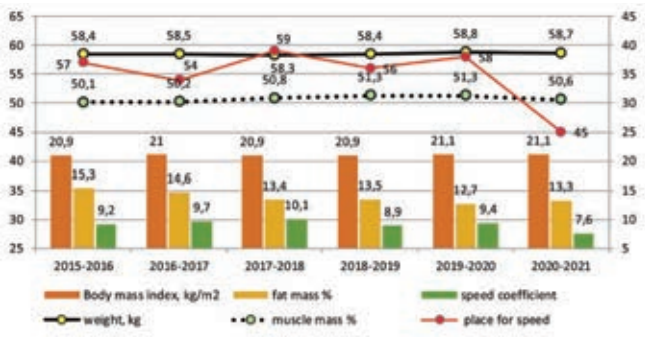

Figure 1. *Dynamics of body composition indicators and indicators of competitive activity for biathletes of the Russian national team in the seasons of 2015-2021*

Table 2 shows the indicators of competitive activity and body composition of biathletes of the Russian national team in the 2021-2022 season. Analyzing the data in Table 2, we can conclude that the speed of movement along the distance is a limiting factor for Russian biathletes. At the same time, Russian biathletes in the 2020-2022 seasons. the correlation coefficient of the location in terms of speed and speed coefficient with the sum of fat folds and the percentage of fat mass was R= 0.40-0.42. The leader of the Russian national team in the 2021-2022 season. K. R-va had the most optimal values of adipose (10.53%) and muscle tissue (50.75%). At the same time, the athlete occupied the 8th position in the world in the speed rating of biathletes with a loss to the leader of 2.5 s per 1 km of distance.

Russian biathletes competing at the OWG 2022 and winning silver medals in the 4x6 km relay had lower values for the percentage of fat mass (12.25±2.11%) and the sum of 7 fat folds (45.5±11.2 mm) with higher values of muscle mass (49.65±2.5%) than biathletes competing in the IBU Cup (Table 3). In biathletes of the IBU Cup level, the fat values were 16.29±3.6%, the total fat folds were 60.25±14.1 mm, the percentage of muscle mass was 46.95±2.04%.

The most significant (significant) differences between the groups were observed in the speed of passing the distance, the percentage of adipose tissue and the sum of 7 fat folds. Differences in the time of work in the maximum test, maximum oxygen consumption, percentage of muscle mass were not significant.

Table 3. *Indicators of functionality, competitive activity and body composition of female biathletes of the Russian national team in the 2021-2022 season*

Group	1*	2*	3*	4*	5*	6*	7*
WOG 2022	25,1±10,7	5,6±1,9	206±41	67,7±3,3	49,8±2,6	12,08±3,1	45,02±11,0
IBU 21-22	63,6±28,7	9,8±2,9	197±25	65,8±2,8	46,5±1,9	16,5±6,7	62,6±11,2

Note: 1 - place in speed at the stages of the World Cup; 2* - speed coefficient (loss to the leader in seconds per 1 km distance); 3* - time of work in the maximum test of the maximum oxygen consumption, s; 4* - maximum oxygen consumption, VO2 ml / min / kg; 5* - muscle mass%; 6* - fat mass, %.; 7* - sum of 7 fat folds.*

Table 4. *Negative dynamics of indicators of body composition and speed of passing competitive distances for a biathlete of the Russian national team of the honored master of sports qualification in the seasons of 2018-2022.*

season	1*	2*	3*	4*	5*	6*
2018-2019	31	10	3,00	53,1	50,8	10,0
2019-2020	23	23	5,40	54,4	49,5	13,9
2020-2021	19	22	4,70	55,8	48,2	14,3
2021-2022	32	28	6,30	57,4	47,6	15,1

Note: 1 - place in the overall standings of the Biathlon World Cup; 2* - place in terms of speed; 3* - loss to the leader in seconds per 1 km distance; 4* body weight, kg; 5* - muscle mass, %; 6* - fat mass, %.*

The negative dynamics of body mass components is expressed in a decrease in muscle mass, an increase in fat mass, and an increase in body weight (Table 4). The highest indicators of the speed of movement along the distance were registered with optimal values of muscle and adipose tissue. In the seasons of 2020-2022, in our opinion, the training strategy was incorrectly chosen for this athlete, which was indirectly evidenced by a decrease in the speed rating against the background of an increase in the fat component and a decrease in the muscle component of body weight (Table 4). On the other hand, the positive dynamics of the muscle component and the decrease in the fat component are clearly reflected in the indicators of competitive activity. The highest values of movement speed were recorded at high values of muscle mass and low values of fat mass.

Body composition monitoring of biathletes using BIA Maltron BioScan 920-II during performance at the Biathlon World Cup in the 2021-2022 season. showed multidirectional dynamics of indicators, which probably reflected the state of the body during the period of preparation and participation in competitions. An increase in loss to the speed leader was recorded with a decrease in ICW, protein, potassium, glycogen, percentage of adipose tissue, an increase in ECW and total body water (TBW). This trend in body composition may indicate a risk of reduced strength and aerobic capacity. The data obtained can serve as a basis for a deeper analysis of the body composition of highly qualified biathletes during the basic training and at the stages of approaching the main starts of the season. An analysis of the individual dynamics of body composition can be used as a criterion for changing adaptive changes as a result of the training program used.

Conclusions. Monitoring of changes in body composition using the BIA Maltron BioScan 920-II and caliperometry makes it possible to assess current and cumulative changes in the process of long-term training of biathletes with high accuracy and reliability. As a result of the analysis, indicators of body composition were identified that can be successfully used in monitoring body composition under the influence of training and competitive loads.

The highest relationship among the analyzed indicators of body composition with the speed of movement along the distance has the sum of fat folds and the percentage of adipose tissue (R=0.44-0.51 at p>0.05). An increase in the loss to the leader in terms of movement speed was recorded with a decrease in the content of intracellular water in the body (ICW), protein, potassium, glycogen, percentage of adipose tissue and an increase in the content of extracellular water in the body (ECW) and total body water (TBW).

Reference

1. Abramova T.F., Nikitina T.M., Kochetkova N.I. Morfologicheskiye kriterii – pokazateli prigodnosti, obshchei fizicheskoi podgotovlennosti i kontrolya tekushchei i dolgovremennoi adaptatsii k trenirovochnym nagruzkam [Morphological criteria - indicators of fitness, general physical fitness and control of current and long-term adaptation to training loads]. Guidelines. Moscow: Skyprint publ., 2013. 132 p.
2. Melchiorri G., Viero V., Sorge R., Trioss T. i, Campagna A., Volpe S., Lecis D., Tancredi V., Andreoli A. Body composition analysis to study long-term training effects in elite male water polo athletes. Sports Med Phys Fitness. 2018;58(9):1269-4.
3. Ward L.C. Bioelectrical impedance analysis for body composition assessment: Reflections on accuracy, clinical utility, and standardization. Eur. J.Clin. Nutr. 2019, 73, 194-199.
4. Development and validation of BIA prediction equations of upper and lower limb lean soft tissue in athletes Sardinha. L.B.; Correia, I.R.; Magalhaes, J.P.; Judice, P. B.; Silva, A. M.; Hetherington-Rauth, M. Eur. J.Clin. Nutr. 2020, 74, 1646-1652.

Influence of the viewers on the performance results of sports teams

UDC 796.015.865.22

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Abstract

Objective of the study was a theoretical substantiation and description of the calculation of the rating using numerical methods in team sports.

Methods and structure of the study. The formation of rating classifications in team sports was carried out using mathematical modeling using high-level programming languages and numerical calculation methods. The requirements that must be met by the general targets, guidelines that form the rating of teams are determined: taking into account the results of previous performances, the factor of influence of one's field, the number of spectators at the stadium, the potential of teams. The mathematical model was evaluated by the indicator of the convergence of the current rating of the teams participating in the match with the actual result of the game. The analysis of the results of the performance of teams in the matches of the championships of Russia in 1992-2022 was carried out.

Results and conclusions. Three variants of calculation were performed: 1) calculation of a unified system of equations, taking into account the factor of influence of one's own field; 2) calculation with the calculation of the index of the coefficient of influence of spectators on the results of games; 3) calculation of the coefficients of influence of the home field factor and spectators on the results of the games. The system of linear equations has a unique solution if the results of the teams' performance do not have zero uncertainty during the entire period of the competition. The developed rating system is aimed at numerical confirmation of the level of readiness and potential of teams, the accuracy of predicting the performance of teams in the short and long term in all team sports.

Keywords: *rating, system, viewers, classification, modeling, numerical method.*

Introduction. The relevance of the research topic is that the athletes' performance is never been realized without the attention of the audience, who directly affect the results of the teams' performance by their behavior and reaction. The spectators are the ones who create a positive or negative mood for the athletes, stimulate, activate and motivate their efforts to achieve results in the competition. Consequently, competition conditions, the internal and the external environmental factors have a direct impact on team's success.

A.A. Polozov together with other Russian scientists S.V. Mikhryakov, E.S. Naboychenko, E.M. Bozhko, E.A. Suvorova, A.V. Melnikova and A.V. Korelin have devoted research works to the improvement of the rating calculation methods in sports [1]. Foreign authors are also engaged in improving the methods of the rating evaluation [7].

The impact of fans' benevolent or negative mood on the success and results of a sports team has not been well studied. The practical examples of the spectators' influence on the results of teams' performances are considered. The introduction of the rating is essential for further development, an analysis and prediction of the performance results in team sports.

Objective of the study was a theoretical foundation and description of the rating calculation with the use of numerical methods in team sports. For the first time the notion of mathematical model correspondence to real results, tending to the maximum, is in-

troduced, as well as the calculation of impact factor indices: one's own field and spectators on the result of the game. The following parameter is suggested as an indicator of the degree of compliance for the mathematical model: the percentage of matches with the converged result based on the results of the rating evaluation for two teams with the actually obtained result of match to a total number of matches with the identified winner.

Methods and structure of the study. The methodology for determining the teams' rating, based on the factor of own field, which was used in the first variant of calculation, is presented in the works [3, 4].

In the second calculation variant, let us determine the teams' ratings only including the factor of the spectators' impact on the result of the game.

The value of the spectators' factor influence index is calculated by the following formula

$$k_s = 1 + v_s \cdot S, \quad 1$$

where S – is a number of matches with the home field advantage of one of the teams; v_s – is a value of one spectator's impact on the result of the game.

In the third variant of calculation, we will determine the teams' ratings, including the impact of the factor: own stadium and spectators on the result of game. The necessity of the calculation for given variant is obvious - the result of match is affected not only by a number of spectators, but also by the psychological factor of being at own stadium during the game.

Considering the spectators factor (1), a total number of goals scored and conceded will be:

$$F_i = \sum_{j=1}^{n} \left(G_j^f \cdot \sqrt{R_j} \cdot \sqrt{k_v} \cdot \sqrt{k_s} \right); \; A_i = \sum_{j=1}^{n} \left(\left(G_j^a / \sqrt{R_j} \right) / \left(\sqrt{k_v} \cdot \sqrt{k_s} \right) \right). \quad 2$$

where i – is a number of teams, calculated in the system; F_i, A_i – is a total given number of goals scored and conceded by i-th team, correspondingly; G_j^f, G_j^a – is a number of goals scored and conceded by i – th team in j – th game, correspondingly; R_j – is the opposing team rating in j-th game; k_v – is an index of the impact factor of the game on home field.

Results of the study and their discussion. For the analysis, we choose the results of 7492 matches, played by the teams in the championships of Russia 1992-2022, with the period from April 29, 1992 to April 3, 2022.

After calculating a system of the equations for the first variant, we summarize the obtained results in Table 1, using the following notations: PM – is a number of the outcomes, which matched the result of the opponents' rating assessment, RM – is a number of matches with the identified winner.

The sixth line shows the results of calculating for one's own field factor, obtained using the formula described in [5]. All other results were obtained using the assigned own field factor, which were changed in the increments of 0.1.

The results show that the maximum convergence of the model was 70.414%, when calculating the factor of own field according to the proposed formula.

After calculating a system of the equations for the second variant, using the spectators' impact index on the game results, we obtain the following results (Table 2).

The results show that with the value = 0.370 per 10000 spectators the degree of model consistency was a maximum and it is equal to 70.725. The factor of the spectators impact on the results of matches is k_s = 1.37 per 10,000 spectators. So, if we ignore a fact of the impact of the stadium on the result of the game and we assume that only a number of spectators affects, it turns out that if the team gathers on home field

Table 1. *The degree of model consistency with different values of the indicators for own field factor*

K_v	$\sum_{i=1}^{n} \left(G_{1i} / \sqrt{R_1/R_2} \right)$	$\sum_{i=1}^{n} \left(G_{2i} \cdot \sqrt{R_1/R_2} \right)$	PM	RM	Degree of model consistency, %
1,000			3615	5479	65,979
1,100			3733	5479	68,133
1,200			3809	5479	69,520
1,300			3844	5479	70,159
1,400			3854	5479	70,341
1,430	10533,59	7366,49	3858	5479	**70,414**
1,500			3860	5479	70,451
1,600			3854	5479	70,341
1,700			3824	5479	69,794
1,800			3794	5479	69,246
1,900			3767	5479	68,753
2,000			3738	5479	68,224

Table 2. *The degree of model consistency with different indicators of the value for spectators' impact on the result of the game*

V_s for 10,000 spectators	PM	RM	Degree of model consistency, %
0,100	3732	5479	68,115
0,200	3803	5479	69,410
0,300	3866	5479	70,560
0,350	3867	5479	70,579
0,365	3872	5479	70,670
0,370	3875	5479	**70,725**
0,375	3870	5479	70,633
0,385	3868	5479	70,597
0,400	3867	5479	70,579
0,450	3858	5479	70,414
0,500	3850	5479	70,268
0,600	3826	5479	69,830
0,700	3815	5479	69,629
0,800	3804	5479	69,429
0,900	3781	5479	69,009
1,000	3752	5479	68,480
1,500	3684	5479	67,239
2,000	3635	5479	66,344

Table 3. *The degree of model consistency with the indicators of home field factor and the value of the spectators' impact on the result of the game*

V_s for 10,000 spectators	K_v	$\sum_{i=1}^{n}\left(G_{1i}/\sqrt{R_1/R_2}\right)$	$\sum_{i=1}^{n}\left(G_{2i}\cdot\sqrt{R_1/R_2}\right)$	PM	RM	Degree of model consistency, %
0,100	1,290	10002,98	7754,90	3869	5479	70,615
0,200	1,179	9568,27	8116,24	3879	5479	70,798
0,210	1,169	9528,78	8151,13	3882	5479	70,852
0,2125	**1,167**	9519,01	8159,83	3883	5479	**70,871**
0,220	1,159	9489,92	8185,82	3879	5479	70,798
0,250	1,131	9376,92	8288,71	3874	5479	70,706
0,300	1,088	9199,51	8456,44	3863	5479	70,506
0,400	1,011	8879,47	8779,36	3867	5479	70,579
0,500	0,946	8597,11	9087,71	3851	5479	70,287
0,600	0,889	8344,84	9383,53	3838	5479	70,049
0,700	0,840	8117,18	9668,39	3838	5479	70,049
0,800	0,795	7910,02	9943,52	3826	5479	69,830
0,900	0,756	7720,23	10209,95	3820	5479	69,721
1,000	0,721	7545,31	10468,52	3825	5479	69,812

of 10000 spectators, the chances of winning increases by 1.37 times.

In the third variant of the calculation, we obtained the results of the application for the factor impact coefficients: own field and spectators (tab. 3).

As we can see from the obtained, results with the value $v_s = 0$, 2125 per 10000 spectators and $k_v = 1.167$, as the degree of model consistency was the maximum and it is equal to 70.871. The factor of the spectators impact on the results of the matches is $k_s = 1.2125$ per 10000 spectators. It means that together with the factor of the stadium's impact on the result of the game, that increases the chance of winning in 1.167 times, the impact of a number of spectators increases the chance of winning in 1.2125 times, if the team gathers on home field 10000 spectators.

Conclusion. The obtained data indicate the compliance of the proposed mathematical model and a

possibility of the rating application for the evaluation of team performance and chances for success in the future tournaments in team sports.

A conclusion can be made that the influence of spectators on the results of teams' performance, as well as the choice of the venue of sports competitions are highly significant. Both factors have a direct impact on the motivation for the athletes, their level of the energy and activity, as well as psychological disposition for winning the competition, success and leadership. We believe that it is required to provide an integrated approach to the problem's solution for the psychological and pedagogical preparation of the athletes, both on the part of specialists-psychologists and on the part of coaches.

References

1. Polozov A.A., Mikhryakov S.V., Naboichenko E.S., Bozhko E.M. Informatsionnaya model futbola na primere uchastiya sbornoy Rossii na CHM-2018 [Football data processing model in context of Russian national team participation in 2018 World Cup]. Teoriya i praktika fizicheskoy kultury. 2018. No. 1. pp. 75-77.
2. Polozov A.A., Suvorova E.A., Melnikova A.V., Korelina A.V., Mikhryakov S.V. Prognozirovaniye rezultatov CHM-2018 na osnove novogo algoritma konsolidatsii dannykh [Forecasting of results of the 2018 World Cup on the basis of a new algorithm of consolidation of data]. Uchenye zapiski universiteta im. P.F. Lesgafta. 2018, No. 4. pp. 263-269.
3. Yushkin V.N. Mathematical model for determining the rating in a linear formulation [Linear mathematical model to rate influence of home field factor in football]. Teoriya i praktika fizicheskoy kultury. 2022. No. 3. pp. 14-16.
4. Yushkin V.N. Sistema opredeleniya reytinga [The Ranking System], Sovremennaya nauka: aktualnye problemy teorii i praktiki. Seriya: Gumanitarnye nauki. 2020. No. 1. pp. 122-126.
5. Yushkin V.N. Tsifrovaya model reytingovoy otsenki sorevnovatelnoy deyatelnosti [Digital model of rating evaluation of competitive activity]. Uchenye zapiski universiteta im. P.F. Lesgafta. 2021. No. 10. pp. 428-431.
6. Boudreaux C.J., Sanders S.D., Walia B. A natural experiment to determine the crowd effect upon home court advantage, Journal of Sports Economics, 2015. Vol. 18. No. 7. pp. 737-749.
7. Couceiro M.S., Clemente F., Martins F., Machado J. Dynamical stability and predictability of football players: The study of one match, Entropy. Vol. 16. No. 2, 2014. pp. 645-674.
8. Goumas Chris. Modelling home advantage for individual teams in UEFA Champions League football. Journal of Sport and Health Science, 2017. Vol. 6. No. 3. pp. 321-326.
9. Karminsky A., Polozov A.A. Handbook of Ratings. Approaches to Ratings in the Economy, Sports, and Society, Springer International Publishing house. London, 2016. 360 p.
10. Mangan S., Collins K. A rating system for gaelic football teams: factors that influence success. International Journal of Computer Science in Sport, 2016. Vol. 15. Issue 2. pp. 78-90.
11. Pollard R., Gómez M.A. Components of home advantage in 157 national soccer leagues worldwide. International Journal of Sport and Exercise Psychology, 2014. Vol. 12. No. 3. pp. 218-233.
12. Principe V., Gavião L.O., Henriques R., Lobo V., Alves Lima G.B., Sant'anna A.P. Multicriteria analysis of football match perfomances: Composition of probabilistic preferences applied to the English premier league 2015/2016 // Pesquisa Operacional, 2017. Vol. 37. No. 2. pp. 333-363.

Sports training in summer polyathlon based on the rational distribution of training loads

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Abstract

Objective of the study was to determine the rationality of the distribution of training loads of different types of all-around exercises of polyathlon students in the annual cycle.

Methods and structure of the study. To solve the set goal, a pedagogical experiment was conducted, in which 32 polyathlete students aged 17-24 years old (men and women) with qualifications from the II sports category to masters of sports, involved in sports improvement sections of various universities in Moscow, took part. All students-polyathletes were divided into two equal groups - experimental and control. The experimental group (16 people) practiced according to the developed methodology, taking into account the patterns of transfer (interaction) of physical qualities and the mutual influence of various types of exercises. In the control group (16 people), they did not adhere to a strict sequence of classes and included in one lesson a variety of exercises included in the types of all-around.

Results and conclusions. The results of control tests and competitions showed that the increase in results in all types of all-around events for the entire experimental period was significantly higher in the groups that used the developed methodology, which provided for the consistent use of exercises, taking into account the transfer of physical qualities during two training sessions a day.

The rational distribution of training loads in the annual cycle allowed to improve sports results in 100% of polyathletes students, and in 50% of cases to achieve sports standards and titles.

Keywords: *polyathlon, students, types of all-around, training load, periods of training sessions.*

Introduction. High achievements in polyathlon, as a multi-athlon sport, are possible as a result of systematic long-term training [2, 6, 7]. At the same time, those involved have to master the technique of sports that differ sharply from each other [4, 5].

Solving the problems of special and general physical training in polyathlon is more than in other sports based on the laws of transfer of physical abilities, which allows, with the development of one ability, to achieve an increase in the level of development of others [1, 7].

To date, the topical issue is the determination of the optimal training load in each type of all-around, the variability of all-around types in one training session, in a weekly training cycle, etc., as well as their sequence.

Objective of the study was to determine the rationality of the distribution of training loads of different types of all-around exercises of polyathlon students in the annual cycle.

Methods and structure of the study. To solve the set goal, a pedagogical experiment was conducted, in which 32 polyathlete students aged 17-24 years old (men and women) with qualifications from the II sports category to masters of sports, involved in sports improvement sections of various universities in Moscow, took part. All students-polyathletes were divided into two equal groups - experimental and control.

The experimental group (16 people) practiced according to the methodology developed by us, taking into account the patterns of transfer (interaction) of physical qualities and the mutual influence of various

types of exercises. Training was carried out twice a day in the morning and in the evening.

In the control group (16 people), they did not adhere to a strict sequence of classes and included in one lesson a variety of exercises included in the types of all-around. We trained once a day.

After a two-month training process, all polyathlete students participated in competitions in competitions, and then, within 45 days, the training methods in both groups were changed - the control group began to study according to the experimental plan, and the experimental group - according to the control. At the end of the experiment, control testing was carried out in both groups, and all polyathlete students took part in official competitions.

Results of the study and their discussion. The results of control tests and competitions showed that the increase in results in all types of all-around events for the entire experimental period was significantly higher in the groups that used the developed methodology, which provided for the consistent use of exercises, taking into account the transfer of physical qualities during two training sessions a day. The technique is presented in tables 1 and 2.

Subsequent training according to the methodology followed by the experimental group showed its high efficiency. From a group of 16 people who were included in the experimental group, four people became masters of sports, four became candidates for master of sports, one became a European champion, two became champions of Russia. Eight more students-polyathletes of the experimental group had personal successes in performances at competitions.

As a result of pedagogical observation and our own many years of experience in training students-polyathletes, it was determined that the order of types of all-around exercises in the annual training cycle should be distributed as follows: shooting, sprinting, grenade throwing, long-distance running, swimming (Table 3).

In addition, a two-time workout per day gives a better increase in working capacity and physical qualities than a one-time workout with the same daily amount of physical activity. It has also been found that non-intense swimming does not adversely affect shooting; after swimming, training in sprinting or throwing grenades is not advisable; intensive training in running or throwing grenades reduces the result in shooting.

In the preparatory period, the ratio of funds for general and special training was in the range of 60 and 40%. 11-12 training sessions were held per week, including swimming - 3 trainings, cross-country training - 3, shooting - 3, throwing - 1-2, sprinting - 1.

In the competition period, the ratio of general and special training facilities was within 4:1. The number of training sessions - 12, including swimming - 3, shooting - 3, grenade throwing - 2, 100 m run - 2, 2000-3000 m run - 2.

Table 1. *The sequence of types of all-around exercises in one training session*

Lesson No.	Types of all-around exercises		
1	Shooting	General physical preparation	Swimming
2	Shooting (non-stressful)	Run 100 m, throwing	Swim or cross
3	Run 100 m (quality)	Throwing (quality)	Swimming (free)
4	Run 100 m (technique)	Throwing (technique)	Swimming (enhanced)
5	Throwing (technique)	100m run (technique)	strength training
6	strength training	Swimming (free)	-
7	Swimming	general physical preparation	-
8	Swimming	Shooting	General physical preparation
9	Intense running	General physical preparation	Swimming (free)
10	General physical preparation	Swimming	-

Table 2. *The order of types of all-around exercises with two training sessions per day*

Morning workout	Evening workout
Shooting, swimming (not intensive)	Strength training, swimming (free)
Swimming (free), shooting	Intense running (or throwing), swimming (or cross-country)
100m running, throwing	Shooting, cross or throwing
Throwing, general physical training	Intensive running, swimming (free)
Cross	Shooting, swimming
General physical preparation	100m running, throwing, swimming (free)
Swimming (intensive)	Shooting, general physical training
Strength training, cross	Swimming (non-intensive)
Intense running	Swimming

Table 3. *Approximate scheme of annual planning of training sessions of polyathlete students*

Types of all-around exercises	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Preparation period							
100 m run		+					
Shooting	+		+		+		
Swimming	+		+		+		
Throwing		+					
Running 2000-3000 m	+		+			+	
Competition							+
Competitive period							
100 m run		+			+		
Shooting	+		+		+		
Swimming	+		+		+		
Throwing		+			+		
Running 2000-3000 m		+					
Competition						+	+
Transition period							
100 m run			+				
Shooting	+				+		
Swimming	+		+		+		
Throwing							
Running 2000-3000 m						+	
or conditioned cross			+			+	

In the transitional period, the volume and intensity of training loads were reduced to 40-60% within 2-4 weeks. The number of training sessions was reduced to 7-8.

Conclusions. When planning the training of students-polyathletes, a positive mutual influence of the types of all-around events was revealed as follows: an improvement in the result in the 100-meter run had a positive effect on the result in the 2000-3000-meter run; improvement of speed qualities in the 100-meter run made it possible to improve the effectiveness of grenade throwing, etc.

The rational distribution of training loads in the annual cycle allowed to improve sports results in 100% of polyathletes students, and in 50% of cases to achieve sports standards and titles.

References

1. Bondarchuk A.P. Upravleniye trenirovochnym protsessom sportsmenov vysokogo klassa [Management of the training process of high-class athletes]. Moscow: Olympia Press publ., 2007. 272 p.
2. Gilmutdinov T.S. Postroyeniye trenirovochnogo protsessa studentov-poliatlonistov v podgotovitelnom periode [Construction of the training process of students-polyathletes in the preparatory period]. Poliatlon. 2000. No. 1-2. pp. 18-20.
3. Kryazh V. Perenos trenirovannosti v fizicheskom vospitanii [Transfer of fitness in physical education]. Uchenyye zapiski. Collected works. Issue 5. Minsk: AFViS RB publ., 2002. pp. 252-258.
4. Nikiforova O.N., Khoteeva M.V., Prokhorova T.I. Napravlennoye povysheniye funktsionalnykh vozmozhnostey studentov-poliatlonistov pri podgotovke k begu na vynoslivost [Directed increase in the functional capabilities of students-polyathletes in preparation for endurance running]. Pedagogiko-psikhologicheskiye i mediko-biologicheskiye problemy fizicheskoy kultury i sporta. 2019. Vol. 14. No. 1. pp. 38-44.
5. Nikiforova O.N., Zhurbina A.D., Bakulina E.D. et al. Adaptatsiya i osobennosti funktsionalnykh vozmozhnostey devushek-futbolistok s narusheniyami slukha v zavisimosti ot kvalifikatsii i vozrasta [Adaptation and features of the functional capabilities of female football players with hearing impairment depending on qualifications and age]. Teoriya i praktika fizicheskoy kultury. 2021. No. 9. pp. 40-42.
6. Sadilkin A.F. Struktura i soderzhaniye godichnogo tsikla podgotovki poliatlonistov na etape sportivnogo sovershenstvovaniya [The structure and content of the annual training cycle of polyathletes at the stage of sports improvement]. PhD diss. Tambov, 2014. 187 p.
7. Trebenok A.I., Trebenok A.A. Metodika podgotovki kvalifitsirovannykh sportsmenov-poliatlonistov [Summer polyathlon. Methods of training qualified athletes-polyathletes]. Bryansk: BF MosUMVD Rossii publ., 2007. 172 p.

Influence of maximum stroke force and reduction in training volumes on athletic performance in swimming

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Abstract

Objective of the study was to reveal the influence of stroke force and narrowing of training volumes on sports results.

Methods and structure of the study. In the course of the experiment, changes in the magnitude of muscle strength during the period of contraction were determined in 17 male swimmers of the highest qualification. Studies were conducted before, during and after the 14-day constriction. Two types of tests were used: on land and in water. On land, using the "biokinetic bench for swimming" simulator, the maximum stroke power was measured. The maximum hand strength was measured at various hand speeds. The simulator allows you to accurately simulate the stroke movements of the hands when swimming freestyle or butterfly, exercises are performed at a given speed. The stroke power value was determined by dividing the total amount of load by the time of one stroke.

Results and conclusions. The results of tests on the biokinetic bench and swimming power measurements showed that swimmers can achieve higher peak power with proper training planning. Recent research data has shown a close relationship between biokinetic strength and sprint speed (freestyle swimming speed). The improvement in the results of swimmers' performances after the period of narrowing was also confirmed by the improvement in performance when performing exercises on the simulator. This means that the strength of the stroke affects the performance.

Keywords: *stroke force, biokinetic force, tapering period, stroke power, swimming, sports result.*

Introduction. The swimmer's swimming speed, to the greatest extent, depends on the magnitude of the maximum stroke force, which, in fact, determines the efficiency of the athlete's work in swimming. Since 1970, coaching staff have been analyzing video footage of national and international competitions to understand what separates the winners from the losers. One metric stays the same: faster swimmers take fewer strokes over the course, at the expense of maximum stroke power. Prolonged intensity of the load leads to a decrease in muscle strength at certain stages, and consequently, results. In order for swimmers to be at the peak of their sports form for the competitive period, large training volumes are reduced (on average, 2-3 weeks before the performances). Despite the fact that this reduction is practiced in many sports, there is little data on the physical changes that occur during this period in the body, on the effect of narrowing on athletic performance. [1,2,3] The reason why many cannot find the answer to the question of how to improve your time or how to move to a new level of sportsmanship, is not a lack of information in general, but, most likely, the lack of systematized information. As one knows, long-term intensity of the load leads to a decrease in the result at certain stages of muscle strength, and, consequently, the overall results.

Objective of the study was to reveal the influence of stroke force and narrowing of training volumes on sports results.

Methods and structure of the study. In the course of the study, changes in the magnitude of muscle strength during the period of contraction were determined in 17 male swimmers of the highest qualification. Studies were conducted before, during and after the 14-day tapering. Two types of tests were used: on land and in water. On land, using the "biokinetic swimming bench" simulator, the maximum value of the power of hand muscle movements was measured. This indicator was also studied during the test in water: each athlete must swim 200 m at a given speed, which was 90% of the maximum speed. All subjects trained daily for 5 months prior to the study. On average, they swam 9 km per day for four weeks. Approximately 75% of the sessions consisted of high intensity interval swimming. During the tapering (14 days), the total volume decreased daily from 7500 m (on the 1st day) to 3500 (on the 13th day); swimmers did not train on days 5 and 7. For comparison, the best result of each swimmer was taken before and after the reduction. The maximum stroke force was measured at different arm speeds using a biokinetic swimming bench. This simulator allows one to accurately simulate the stroke movements of the hands when swimming freestyle or butterfly, and the exercises were performed at a given speed. The force value was determined by dividing the total amount of load by the duration of one stroke.

The simulator has been modified to be used as an in-water test to measure the athlete's power of movement. To do this, a stainless-steel cable was attached to the control mechanism of the bench, connected to a special repellent device; on the other hand, the cable ended in a belt that was fastened to the swimmer. The speed switch on the simulator was set to a point at which the subject moved at a speed of approximately 1 m/s. If the speed increased, the cable would stretch and slow down the swimmer's speed. At the same time, the athlete swam a distance of no more than 10 m, and only the magnitude of the force was measured. The next test was also carried out in the water - the swimmer overcame a distance of 200 m at a speed of 90% of the maximum speed. The power of the swimmer's movements in the water was determined. At the same time, he/she had to swim in the way in which he/she specializes, and maintain a certain pace (with the help of signal lights at the bottom of the pool). After a 5-minute rest, blood samples were taken for lactic acid and pH, PCO2 and PO2. HCO3 was also calculated by the Andersen method. Heart rate was recorded during the recovery period.

Tests on the simulator and to determine the power were carried out on the 1st day of tapering and the next day after the competition. The test for samples of lactic acid and other components of the acid balance was carried out on the 1st and 7th days of tapering and the next after the competition.

Results of the study and their discussion. All swimmers improved their athletic performance after the study (Table 1). Regardless of the length of the course (from 50 m to 1500 m) and swimming methods, the results (compared to the best in the season) were improved by 2.2 - 4.6% (average value - 3.1%). Thus, there are differences between the periods before and after the tapering.

Due to the reduction in the volume of the training load, the values of the power of movements increased significantly during both tests: on land - 17.7% in water - 24.6%.

The 200-meter swimming data are presented in Table 2. Although the level of lactic acid in the venous blood was slightly reduced in the period after constriction, the other values (pH, HCO3, heart rate recovery time) remained unchanged.

Table 1. *Swimmers' performance before and after a 2-week reduced volume training period*

Swimming Style	Distance (meters)	Before Tapering	After Tapering	Changes (%)
Freestyle	50	22,9	22,34	-2,5
	100	49,83	48,76	-2,2
	200	1.48,38	1.44,38	-3,7
	400	4.55,06	4.45,46	-3,3
	1500	17.06,42	16.28,24	-3,7
Breaststroke	100	1.03,28	1.01,29	-3,1
	200	2.20,84	2.15,49	-3,8
Backstroke	100	1.03,28	1.01,29	-3,1
	200	2.20,84	2.15,49	-3,8
Butterfly	100	53,44	52,16	-2,4
	200	2.00,16	1.57,56	-2,2
Medley	200	2.10,86	2.04,80	-4,6
	400	4.31,37	4.23,85	-2,8

Table 2. *Changes in acid balance and heart rate recovery time after swimming a distance at a steady pace*

Day of the taper period	Distance travel time (200 m)	Lactic acid level (mmol/l)	pH	HCO_3	Heart Rate
1st	126±4,1	10,1±1.1	7,125±0,040	16,1±0,86	124±5
7th	126±4,6	9,6±4,6	7,114±0,084	16,1±0,84	123±6
15th	125±4,2	8,8±0,9	7,148±0,023	17,2±1,17	128±9

Swimmers complained of extreme fatigue and inability to train during the tapering period, but experienced a significant increase in strength during the final competition.

During the tapering period, there were no changes in the acid balance as a result of physical activity, but a significant increase in the level of power of movements was noted (when performing tests). Results improved by an average of 3.1%.

Recent research data has shown a close relationship between biokinetic strength and sprint speed (freestyle swimming speed). The improvement in the results of swimmers' performances after the tapering period was also confirmed by the improvement in performance when performing exercises on the simulator. This means that the force of the stroke affects the performance.

Conclusions. The results of tests on the biokinetic bench machine to measure the stroke power in swimming found that the best sprinters can achieve higher peak power than swimmers who show lower times in sprint distances. An increase in power level of 8.6% corresponds to a 2.8% increase in maximum speed, which is equivalent to a 3.1% improvement in race swim time (due to an increase in muscle strength).

Research has shown that swimmers experienced significant decreases in muscle strength and power levels during intense training. At the same time, swimmers specializing in long distances, after a large training load, had an insufficiently high level of "explosive" strength, which was restored after a certain period of rest. Thus, repeated days of high-intensity training help prevent an athlete from performing at or near peak, which can be achieved by reducing physical stress.

References

1. Grigan S.A., Pasechnik Zh.V., Belykh G.N. Planirovaniye trenirovochnogo protsessa plovtsov s ispolzovaniyem vysokoskorostnoy trenirovki [Planning the training process of swimmers using high-speed training]. Teoriya i praktika fizicheskoy kultury. No. 4. 2022. p.71.
2. Ryzhkin N.V., Stepicheva N.V., Eliseev V.M., Ivanova A.A., Savchenko Yu.A. Vliyaniye silovoy podgotovki na sportivnyy rezultat sportsmenov v akademicheskoy greble [Influence of strength training on sports performance of athletes in rowing]. Uchenye zapiski universiteta im. P.F. Lesgafta. 2020. No. 5 (183). pp. 373-377.
3. Issurin V.B., (2013) Verbitsk O. Concurrent activation potentiation enhances performance of swimming race start. Acta Kinesiol Univ Tartu, 19, pp. 41-47

Breathing peculiarities during the performance of the technical routine of the artistic swimming national teams of russia and egypt at the XXXII summer olympic games

UDC 796.012

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Abstract

Objective of the study was to identify the characteristic features of breathing in the national teams of Russia and Egypt in artistic swimming at the Olympic Games 2020 (2021).

Methods and structure of the study. The experiment was carried out on 16 athletes participating in the 2020 (2021) Olympic Games of the national teams of Russia and Egypt in artistic swimming.

Results and conclusions. As a result of the experiment, it was revealed that the Egyptian team spent 61.9% of the total time (3 minutes) underwater, while the Russian team spent 49.8%. Accordingly, in every minute of the technical routine, the Egyptian team spent 26%, 17%, and 35% more time underwater than the Russian team. The Russian team performed fewer hybrids and a three-peak load (1 peak per minute), with adequate control of retention and voluntary breathing between combinations throughout the program, demonstrating a balanced breathing pattern strategy.

Keywords: *artistic swimming, breathing patterns, technical routine hybrids.*

Introduction. Artistic swimming is a water competitive sport, which is a combination of swimming, dance, ballet and gymnastics [5], involving the synchronous execution of complex technical movements accompanied by music for a certain period of time. In one program, choreographic exercises are performed both above the water surface and under water [1].

Based on this, to create a breathing plan throughout the program, it is necessary to take into account the following parameters: how long each combination will last, how many combinations the performance includes. This information is needed for adequate management and implementation of the performance program [2, 3]. In addition, it is important to choose breathing patterns suitable for a particular team, corresponding to individual development and functional readiness [7]. Thus, by analyzing breathing patterns, it is necessary to determine the relationship between training methods, loads, and testing with these patterns [6].

Considering the results of the last Olympic Games held in Tokyo in 2021, the Russian artistic swimming team, which has been the champion since 2006, remains an example worthy of study. Meanwhile, the Egyptian team is the only team, both Arab and African, to compete at the Olympics in artistic swimming. This comparison makes it possible to identify the breathing characteristics of the Russian and Egyptian teams.

Objective of the study was to identify the characteristic features of breathing in the national teams of Russia and Egypt in artistic swimming at the Olympic Games 2020 (2021).

Methods and structure of the study. The performances of the two national Artistic Swimming teams were taken directly from the Olympic technical routine for the Tokyo 2020 (2021) Olympics. The breathing patterns of the technical routine were analyzed from the video recording using the manual tracking mode of the software “Tracker 6.0.1” to determine the coordinates of the markers. Time above and below the wa-

Temporal categories for describing the hybrid

Underwater time during combination (TU/ seconds)	TU1 ≤7	TU2 (8-15)	TU3 (16+)

** combination time = time spent underwater; *(acrobatics and beginning not included)*

ter surface is treated as a variable in this study. In this analysis model, according to the new scoring system [3], the classification of the time limit for each combination into three categories is used (see table).

The results of the study and their discussion. The following two diagrams show the breathing patterns of the Russian and Egyptian national teams, taking into account the time spent above and below the water surface during the technical program. The results show that the Egyptian national team spent more time underwater holding their breath than under the surface with free breathing, while the Russian team performed in a more efficient mode. As can be seen from the above diagrams (Fig. 1), the Egyptian team spent 111.43 seconds underwater, which is 61.91% of the total time, while the Russian team – 89.63 seconds – 49.8% of the total time.

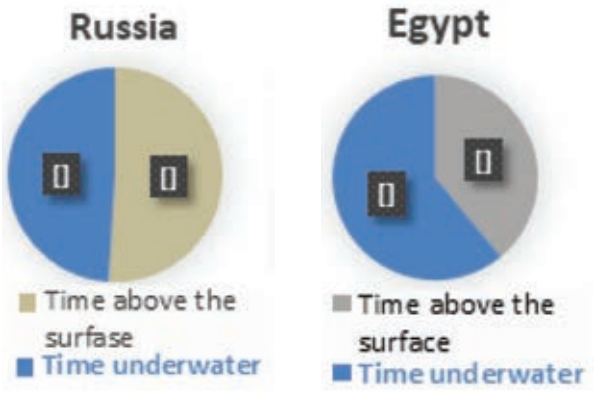

Figure 1. *The percentage of time spent above the water surface and underwater during the technical routine for both teams*

At the same time (Figure 2), the Russian team performed in the last minute 60% of the time above the water with voluntary breathing, sufficient for the subsequent effective completion of the program while holding the breath. While the Egyptian team spent 69% and 63% underwater in the first and second minutes. This is 26% and 17% more than the Russian team. In the last 3rd minute, the Egyptian team had 54% against 40% of the Russian team. As a result of the increased time spent underwater by the Egyptian team throughout the technical program, their performance was lower. This also affected the quality of performance and therefore the overall score. In addition, in the second minute, the Egyptian team failed to perform any technical elements required underwater. During the last minute, they completed (three of the five elements of) the required elements.

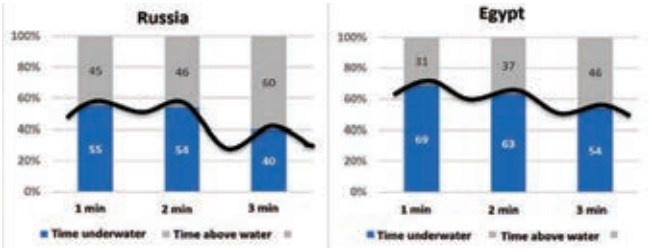

Figure 2. *Time spent above and below the water surface during the technical routine for both teams (%)*

Accordingly, the data presented clearly reflect the general breathing strategies, as well as holding or voluntary breathing during the competition, its positive or negative effect on technique, the quality of the elements and the overall score.

The program of the Russian team was less subject to fluctuations compared to the Egyptian team. The Russian team had only three load peaks (TU2 level), while the Egyptian team had four peaks of the TU2 level + 1 peak of the TU3 level, which shows the well-thought-out strategy of the Russian team breathing in the allotted time period for the combination. At the same time, the Egyptian team spent more time holding their breath, not having enough time to prepare before each peak. This affected the performance of both teams.

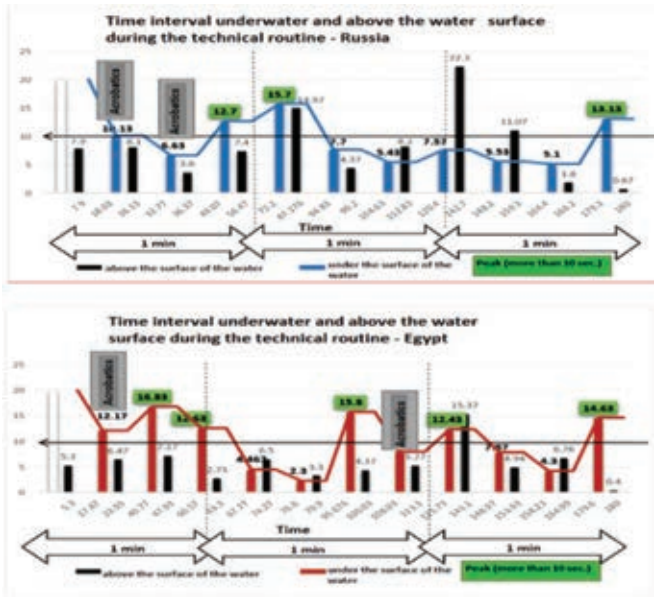

Figure 3. *Time parameters of each combination in the technical routine for both teams*

Thus, the Russian team performed 1 peak per minute with an average duration of no more than 13 seconds and short peaks with an average of 6 seconds. The Egyptian team completed two peaks in the first minute. In addition, she passed two peaks in the last minute in an average of 13 s and one peak in the second minute in an average of 16 seconds. Thus, the Egyptian team experienced a greater load during the implementation of the technical routine than the Russian team.

Conclusions. For each team, you should choose the time of holding and voluntary breathing based on the duration and intensity of the combination, as well as the functionality of the athletes. For a positive effect on the technique, the quality of the elements and the overall score, holding the breath should not exceed 55% of the total time per minute under water. At the last minute of the technical routine, the proportion of voluntary breathing can be about 60%.

References

1. Maksimova M.N. Sinkhronnoye plavaniye. Primernaya programma sportivnoy podgotovki dlya detsko-yunosheskikh sportivnykh shkol, spetsializirovannykh detsko-yunosheskikh shkol olimpiyskogo rezerva [Synchronized swimming. Approximate program of sports training for children's and youth sports schools, specialized children's and youth schools of the Olympic reserve]. Moscow: Sovetskiy sport publ., 2007. 192 p.
2. Gökçe, Akgün. «Comen cup competition points analysis of Ariana figure in artistic swimming» Turkey, European Journal of Physical Education and Sport Science, vol 7, (2021) pp. 90-92.
3. Dimitrova, B. «Comparative analysis for the hypoxic sustainability of the synchronized swimmers from Bulgaria, Greece and Turkey». Research in Kinesiology, (2015). 43(2), pp.180-184.
4. FINA artistic swimming manual for judges, coaches & referees 2017 – 2021.
5. Homma M. et al. Physiological responses during the practice of synchronized swimming: A systematic review, Clinical Physiology and Functional Imaging (2017); p. 1.
6. Ponciano, K., Miranda, M. L. D. J., Homma, M., Miranda, J. M. Q., Figueira Junior, A. J., Meira Junior, C. D. M. & Bocalini, D. S. (2018). Physiological responses during the practice of synchronized swimming: a systematic review. Clinical Physiology and Functional Imaging, 38(2), pp. 163-175.
7. Viana, E.; Bentley, D.J.; Logan-Sprenger, H.M. A (2019). Physiological Overview of the Demands, Characteristics, and Adaptations of Highly Trained Artistic Swimmers: A Literature Review. Sports Med. 1, 9.

Structural indicators of educational activity in universities of physical culture

UDC 796.077.5

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Abstract

Objective of the study was to reveal the direction of the structural indicators of educational activity in higher educational institutions of physical culture.

Methods and structure of the study. As part of the implementation of the first stage of the state task on the topic "Integration of educational, scientific and physical culture and sports activities in higher education in the field of physical culture and sports", the educational activities of higher education institutions of physical culture were monitored according to the main structural indicators and special scientific and methodological literature was studied on this issues.

Results and conclusions. The data on the sports qualification of the contingent and the teaching staff in educational institutions are presented. The ratio of various structural divisions and indicators of methodological support of training in educational institutions are determined. The analysis carried out will serve as the basis for the development of evidence-based proposals for the normative, organizational and methodological support of the process of integrating the educational, scientific and sports activities of full-time bachelor students in higher education institutions of physical culture.

Keywords: *educational activity, integration, higher educational institutions of a sports profile.*

Introduction. At the present stage of development of higher education, the requirements for the quality of training of specialists, the search for resources to improve their professional training are increasing. Such a resource is integration, the process of combining various types of activities specific to an educational institution of physical culture and sports. There are different opinions on the issue of integrating the educational process and sports training, 10% of respondents believe that it is impossible to integrate the educational process and sports training, most of the survey participants argue that integration is a reality, but it is the result of the skillful organization of the educational process by an educational institution [1-3].

In this regard, there is a need to obtain objective data to develop evidence-based proposals for the normative, organizational, methodological support of the integration process, as a condition for the formation of a state order for sports training in a higher education institution of physical culture.

Objective of the study was to reveal the direction of the structural indicators of educational activity in higher educational institutions of physical culture.

Methods and structure of the study. As part of the implementation of the first stage of the state task on the topic “Integration of educational, scientific and physical culture and sports activities in higher education in the field of physical culture and sports”, the educational activities of higher education institutions of physical culture were monitored according to the main structural indicators and special scientific and methodological literature was studied on this issues.

Results of the study and their discussion. In the process of analyzing literary sources, it was found that the implementation of the integration of education, science and physical culture and sports activities involves: correction of professional and sports training; improving the assessment of types of educational activities; creation of personnel, organizational, logistical and financial conditions; substantiation of norma-

tive documents regulating the implementation of this process, etc. All this implies the monitoring of these activities.

The generalized structure of the contingent of students of higher educational institutions of physical culture by sports qualification is shown in Figure 1.

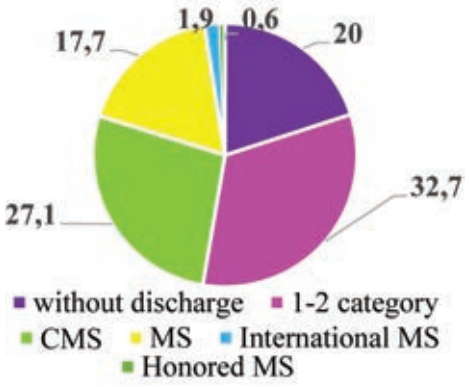

Figure 1. *Generalized structure of the contingent of students of higher educational institutions of physical culture by sports qualification (%)*

The data presented in Figure 1 allow us to conclude that in the total number of full-time students, the share of undergraduate students with sports categories was 80%. Almost half (47.3%) of them are highly qualified athletes (from Candidate Master of Sports (CMS) to Honored Master of Sports (HMS)). Based on the picture of the general structure of the contingent of students studying, it follows that most of them are athletes who have the potential for further improvement in their chosen sport.

In the course of an analytical review of the studied indicators, the most priority sports were identified, for which qualified athletes are trained in universities of this profile, the results are presented in Figure 2.

The highest priority sports in educational institutions subordinate to the Ministry of Sports of Russia are football, athletics, swimming, rhythmic gymnastics, and basketball. Somewhat inferior to them in priority: volleyball, hockey, cross-country skiing. Boxing, taekwondo, judo, wrestling, artistic gymnastics, dance sports, tennis, handball and kettlebell lifting are less preferable than the above mentioned ones in professional training of higher education institutions of physical culture.

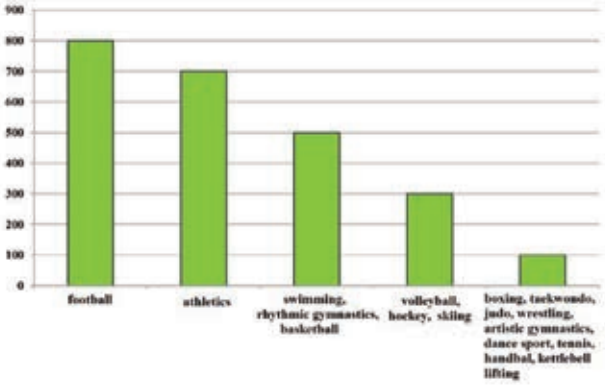

Figure 2. *The most priority sports, represented in the professional training of the universities of the FC (number of those involved)*

Comparative analysis of indicators of sports qualification of the contingent is presented in the table.

The results indicate that the greatest deviation from the overall structure is manifested in the "no discharge" characteristic. That is, in some universities, the development of basic professional educational programs is

The degree of deviation of indicators of sports qualification of the contingent of universities of physical culture from the average (%)

Universities of Physical Culture	without discharge	2 -1 category	CMS	MS	International MS	Honored MS
Volgograd State Physical Education Academy	-3,7	+19	-6,1	-7,7	-0,9	-0,6
Velikiye Luki State Academy of Physical Education and Sports	+2,5	-5,0	-6,4	+6,9	+0,8	+1,2
Voronezh State Institute of Physical Culture	-19,4	+6,2	+19,3	-5,1	-0,4	-0.6
Kuban State University of Education, Sport and Tourism	+9,5	-5,6	-1,1	-2,4	-0,3	+0,1
Far Eastern State Academy of Physical Culture	+10,6	-3,0	+1,1	-6,5	-1,9	+2,4
Tchaikovsky State Academy of Physical Culture and Sports	-20,0	+8,2	+10,1	+3,3	-1,0	-0,6
Smolensk State University of Sports	-19,8	+9,5	-3,3	+8,2	+3,6	+1,3
Volga Region State University of Physical Culture, Sports and Tourism	+13,9	-6,1	-5,6	-2,0	+0,1	-0,3
Lesgaft NSU, St. Petersburg	-12,7	+1,0	+7,2	+5,1	-0,4	-0,2
Churapcha state institute of physical education and sports	-20,0	+22,2	-2,1	+1,8	-1,9	0

associated with the improvement of sportsmanship, while in other universities, students lose their sports qualifications over time.

In the process of analyzing the relationship between the sports qualifications of teachers and students of physical education universities and the number of profiled sports, it was found that the number of sports determines the number of students with sports qualifications, but the more sports, the more teachers who do not have sports qualifications. However, the number of highly qualified athletes is determined by the sports qualification of teachers. At the same time, the number of sports and pedagogical departments determines the variety of sports profiled at the university.

Conclusions. This study allows us to make some generalizations. It was revealed that out of the total number of full-time bachelor's students in higher education institutions of physical culture, 47.3% of students have high sports qualifications (from CMS to HMS), 52.7% of students have the potential for further improvement in their chosen sport. The greatest deviations of the indicators of sports qualification of the contingent of higher educational institutions of physical culture from the average are manifested in the characteristic "without a category". Universities with a large number of sports also have a greater number of basic professional educational programs implemented in the course of the educational process.

References

1. Zotova F.R., Afanasiev V.M., Davletova N.Kh. et al. Otnosheniye studentov-sportsmenov k integratsii obrazovatelnogo protsessa i sportivnoy podgotovki [The attitude of student-athletes to the integration of the educational process and sports training]. Uchenye zapiski universiteta im. P.F. Lesgafta. 2015. No. 10 (128). pp. 73-79.
2. Zotova F.R., Sadykova S.V., Gaznanova V.M. et al. Integratsiya uchebnogo protsessa so sportivnoy podgotovkoy v vuzakh fizkulturnogo profilya [Integration of the educational process with sports training in the universities of physical education]. Teoriya i praktika fizicheskoy kultury. 2018. No. 6. pp. 6-8.
3. Svishchev I.D. Integratsiya nauki i sportivnoy praktiki v sovershenstvovanii professionalnoy podgotovki studentov fizkulturnykh uchebnykh zavedeniy (na prim. sportivnoy borby) [Integration of science and sports practice in improving the professional training of students of physical education institutions (on the note of sports wrestling)]. Doct. diss. (Hab.): 13.00.04. Moscow, 1997. 310 p.

Preparation of a sports reserve in higher education in the field of physical culture and sport

UDC 796.077.5

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Abstract

Objective of the study was to identify the possibilities of a higher education institution of physical culture to carry out activities for the preparation of a sports reserve.

Methods and structure of the study. In the course of the work, the federal standards of sports training, implemented in accordance with the Federal State Educational Standards of the program, were analyzed, the conditionality of the training of the sports reserve with personnel, methodological, material and technical resources was revealed. A survey of teachers of the Lesgaft NSU was conducted.

Results and conclusions. As the results of the study showed, the universities of physical culture have all the opportunities for training a sports reserve. At the same time, this type of activity entails a number of changes in the educational process. The education system in sports universities should provide training for both high-class athletes and qualified coaches. At present, the model of integrating the training of a sports reserve into the educational process of higher educational institutions of physical culture is becoming more and more in demand, where the normative support of the training system is carried out on the basis of the Federal Standard of Sports Training by sport.

Keywords: *sports training, higher education institutions of physical culture, sports qualification, methodological support of sports training, sports reserve.*

Introduction. On the basis of part 2 of section IV "The concept of training a sports reserve in the Russian Federation until 2025" [1], in order to develop student sports, educational organizations of higher education can implement on the basis of voluntary accreditation, which gives the right to carry out activities to implement federal standards of sports training, programs sports training in a specially created structural unit at the stages of improving sportsmanship and higher sportsmanship. Thus, according to part 2 of section IV [1], a mechanism for intersectoral interaction has been established, in which an organization providing sports training, regardless of departmental affiliation, type and legal form, has the opportunity to participate in the training of a sports reserve through the implementation of sports training programs.

Objective of the study was to identify the possibilities of a higher education institution of physical culture to carry out activities for the preparation of a sports reserve.

Methods and structure of the study. In the course of the work, the federal standards of sports training, implemented in accordance with the Federal State Educational Standards of the program, were analyzed, the conditionality of the training of the sports reserve with personnel, methodological, material and technical resources was revealed. A survey of Lesgaft National State University teachers was conducted.

Results of the study and their discussion. According to the survey, it was found that the universities of physical culture have all the opportunities for training a sports reserve. The preparation of a sports reserve in the implementation of educational programs in a sports university entails a number of changes in the educational process. The education system in sports universities should provide training

for both high-class athletes and qualified coaches. At present, the model of integrating the training of a sports reserve into the educational process of higher education institutions of physical culture is becoming more and more in demand. Normative support of the sports reserve training system is carried out on the basis of the FSST (Federal Standard for Sports Training) [2] by sport.

It has been established that in the majority (71.4%) of universities sports clubs or sports training centers have been created that train athletes in one or more sports. Basically, these are universities with a branched structure of faculties and institutes [3]. The performed correlation analysis confirmed this dependence (Fig. 1).

The most complex structure is typical for Lesgaft NSU, St. Petersburg, involving the functioning of institutes, higher schools of trainers, scientific-practical and scientific-methodological centers, a center for monitoring and independent assessment of the quality of education, faculties, departments, a sports club, a training center, a testing center.

Figure 1. *Correlation between the components of the structure of higher educational institutions of physical culture in Russia, with the number of sports profiled in them*

Based on the analysis of correlations between indicators recorded at Lesgaft NSU, St. Petersburg, it was found that the fulfillment of the target figures for admission to the university, for the development of the main professional educational program in the direction 49.03.01 Physical culture at sports and pedagogical departments, is highly predetermined by the number of athletes who entered the university from sports organizations in the region (r=0.96). This was confirmed by the following data: there is a direct almost functional relationship between the total number of applicants and the number of those who completed their studies from the region (r=0.98). At the same time, the more athletes entered the university from the region, the more successfully they completed their training (r=0.95). The total number of graduates and their affiliation to the region largely determines the employment rates (r=0.97 and r=0.93, respectively).

That is, employment in the specialty "sport coach" also largely depends on ties with sports organizations in the region. This fact is confirmed by the pronounced positive correlations between the total number of university graduates and separately graduates of sports and pedagogical departments from the region of the university with the number of those employed in the specialty "sport coach" in the region (r=0.86 and r=0.76, respectively). In addition, it has been established that sports training successfully carried out at the university contributes to the preservation of professional orientation. Thus, the number of graduates who improved their sports skills in the process of training on the basis of the university largely determined the total number of graduates (r=0.62) and the number of graduates from the region (r=0.54) who successfully mastered the professional training program in the direction 49.03.01. However, the improvement of sports qualifications did not always determine employment in the specialty (r = 0.24-0.29). At the same time, it should be noted that graduates who have improved their sports qualifications at a university find it easier to find a job in the specialty "sport coach" (r=0.34) than those who train on the basis of other sports organizations (r=0.15).

In the process of correlation analysis, it was found that the level of qualification of a coach-teacher of a university determines the possibility of preparing sports teams for sports at various levels (r=0.66). However, this is most often associated with the combination of professional and pedagogical activities of a teacher at a university with direct coaching activities in sports organizations in the region (r = 0.81). The presence of a coaching category, logistics and organizational conditions for sports training determines the success of training highly qualified athletes (r=0.73-0.85).

Thus, the integration of educational, scientific and physical culture and sports activities in higher education in the field of physical culture and sports contributes to the process of sports training and is carried out on the basis of systemic links between the documents regulating them, presented in Figure 2.

Figure 2. *Logical diagram of the relationship of documents regulating educational, scientific and sports activities in the field of physical culture and sports*

The content of the main professional educational programs aimed at training personnel for the field of physical culture and sports, first of all, takes into account the Federal State Sports Training Standards, which should be developed by specialists in a particular sports discipline and based on scientific evidence. Only such a document can be effectively implemented in organizations that train the sports reserve. The professional standard of a sports coach takes into account the Federal Standard for Sports Training and all the scientific knowledge that underlies its development. The Federal State Educational Standard (FSES) and the Federal State Requirements (FGR) regulate the design of basic professional educational programs, taking into account the requirements of the Federal State Standards for Sports Training and professional standards for sports and scientific personnel who ensure the development of documents and the implementation of professional activities in each subsequent cycle.

Conclusions. Implemented educational programs in higher education institutions of physical culture comply with the requirements of documents regulating educational, scientific and physical culture and sports activities in the field of physical culture and sports, which confirms the possibility of carrying out activities to prepare a sports reserve in educational institutions of this direction.

References

1. Medvedeva E.N., Zakrevskaya N.G., Solovyov V.B et al. K probleme integratsii obrazovatelnoy, nauchnoy i fizkulturno-sportivnoy deyatelnosti v vysshem obrazovanii v oblasti fizicheskoy kultury i sporta [On the problem of integration of educational, scientific and physical culture and sports activities in higher education in the field of physical culture and sports]. Teoriya i praktika fizicheskoy kultury. 2022. No. 7. pp. 104-106. Bibliography: p. 106 (3 titles).
2. Ob utverzhdenii Kontseptsii podgotovki sportivnogo rezerva v RF do 2025 goda (vmeste s «Planom meropriyatiy po realizatsii Kontseptsii podgotovki sportivnogo rezerva v Rossiyskoy Federatsii do 2025 goda») [On Approval of the Concept for the Preparation of a Sports Reserve in the Russian Federation until 2025" (together with the "Action Plan for the Implementation of the Concept for the Preparation of a Sports Reserve in the Russian Federation until 2025")]. Decree of the Government of the Russian Federation of October 17, 2018 N 2245-r (as amended on April 29, 2018). Available at: https://rulaws.ru.
3. Professionalnyy standart 05.003. Trener. Utverzhden prikazom Ministerstva truda i sotsialnoy zashchity Rossiyskoy Federatsii ot 28 marta 2019 goda № 191n [Professional standard 05.003. Trainer. Approved by the order of the Ministry of Labor and Social Protection of the Russian Federation dated March 28, 2019 No. 191n]. Available at: http://www.consultant.ru

Indicators of manifestations of deviant behavior of young athletes in the process of training activity

UDC 796.011.1

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Abstract

Objective of the study was to identify the causes and types of manifestations of deviant behavior of young athletes in the process of training activities based on the results of an expert survey.

Methods and structure of the study. In the course of the research work "Development of evidence-based proposals for the prevention, correction of deviant behavior and the formation of value orientations among athletes from among the sports reserve", an expert survey was conducted (January-February 2022) (n=20), the information received was processed with using SPSS 23.0.

Results and conclusions. An analysis of the results of the expert survey made it possible to identify the most significant causes that contribute to the emergence of manifestations of deviant behavior in young athletes: the influence of peers; environment outside the sports environment; lack of understanding and positive experience of interaction in the family (with relatives); indifference of coaches and other sports professionals (ignoring the personal problems of young athletes); increased level of anxiety. The types of manifestations of deviant behavior, predisposition to which can be observed in young athletes, are revealed: addictive, affective, aggressive.

Keywords: *deviant behavior, young athletes, expert survey, coaches, level of deviant behavior.*

Introduction. To understand the processes taking place in modern social reality, it is important to work with self-sufficient forms of existence and development of the individual in society, which manifest themselves in social, including deviant, behavior, which makes it possible to study the life priorities of the younger generation. High impulsiveness, characteristic of sports activities, increases the likelihood of modifying the intentions of deviant behavior into an actual act.

In the scientific literature, there are several approaches (social, biological, psychological, professional, etc.) to the study of deviant behavior and consideration of the causes of its occurrence (socialization, social and intrapersonal conflicts, social inequality, etc.). The main reasons for the appearance of deviations in the sports environment are called: dysfunctional manifestations of the sports subculture, orientation of young athletes to utilitarian values, extreme sports, injuries, vulgarization of moral and spiritual values in the sports environment, practices of interaction with individuals (communities) of deviant behavior [3] and etc. Deviant is defined as “any behavior that is potentially dangerous for society or a person (crime, drunkenness, drug addiction, suicide, vagrancy, prostitution, hooliganism, dependency, corruption, terrorism, racism, genocide, destructive cults” [1].

The relevance of the study is characterized by the observed contradiction between the need to study deviant behavior and the lack of scientific and theoretical studies of the causes of its occurrence in young athletes in the process of training activities.

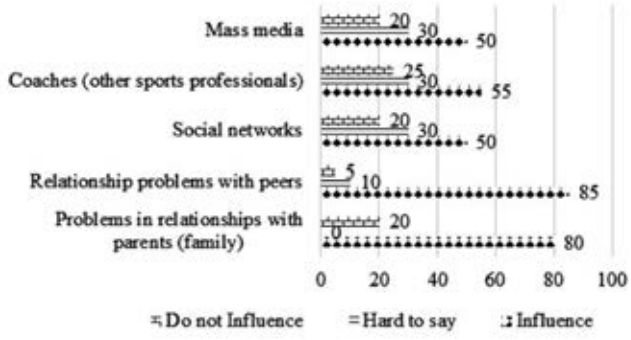
Objective of the study was to identify the causes and types of manifestations of deviant behavior of young athletes in the process of training activities based on the results of an expert survey.

Methods and structure of the study. In the course of the research work “Development of evidence-based proposals for the prevention, correction of deviant behavior and the formation of value orienta-

tions among athletes from among the sports reserve", an expert survey was conducted (January-February 2022) (n=20), the information received was processed with using SPSS 23.0.

The experts were asked to answer closed (with a limited number of alternatives) and open questions regarding the reasons that contribute to the emergence of deviant behavior in young athletes.

Results of the study and their discussion. The reasons were identified, which, according to experts, may contribute to the emergence of manifestations of deviant behavior in young athletes (see figure).



Experts' answers to the question: "Who (what) contributes to the manifestations of deviant behavior of athletes from among the sports reserve" (multiple answers could be selected) (n=20), %

According to experts, the most significant reason that can contribute to the emergence of manifestations of deviant behavior is interaction with others: the influence of peers (85.0%), family (80.0%), coaches and other sports professionals (55.0%).

The answers of experts to an open question, what determines the occurrence of asocial forms of behavior among athletes from among the sports reserve, were singled out and grouped according to the indicated reasons (see table).

A significant part of the experts (80.0%) pointed to the influence of the age aspect of the occurrence of deviant behavior, noting that it is more often observed in athletes aged 13-15 years (50%).

Expert opinions on whether the propensity for deviant behavior of athletes depends on the level of sportsmanship were divided: "no, rather no" - 50%, "yes, rather yes" - 45%, "difficult to answer" - 5.0%. Experts, according to whom there is a relationship between the propensity for deviant behavior and sportsmanship, note that the higher the level of skill of athletes, the lower the propensity for deviant behavior.

The analysis of the obtained results, taking into account the degree of agreement between the opinions of experts, made it possible to establish the main reasons that can lead to antisocial behavior of young athletes: problems in the family, problems with peers, increased anxiety, a tendency to conflicts, external circumstances (social problems), lack of education, lack of attention from the side of the coaching and teaching staff, Internet and telephone games, social networks.

To assess the level of severity of various types of deviant behavior of young athletes, experts used an adapted "Map of observations of the manifestations of deviant behavior of adolescents" [2], which allows "to fix the presence or absence of certain behavioral signs in adolescents, indicating a tendency to certain forms of deviant behavior" [2].

The experts were asked to assess the presence/absence (0 points - none, 10 - permanently) of negative behavioral actions among athletes: 1) in the moral sphere (dishonest attitude to training, to other athletes, swearing, etc.); 2) pre-criminal and criminal (acceptably refers to asocial offenses, violations of

The answer of experts to the open question: "What determines the emergence of asocial social forms of behavior of young athletes?" (experts indicated several reasons) (n=20), %

Reason	Percentage of the total number of experts (n=20)
Upbringing	30,0
Environment outside the sports environment, learning problems	30,0
Lack of parental love, family problems	25,0
Inability to establish communication with peers, problems with peers	20,0
Indifference of the trainer, ignoring by the trainer of personal problems	15,0
Internet and phone games, social networks	15,0
Failure in sports for a long time	10,0
Lack of motivation in sports	10,0

public order, etc.); 3) addictive behavior: Internet addiction, Internet games, etc.; 4) deviations in the sexual sphere (behaves obscenely, etc.); 5) affective behavior (an overestimated level of claims with a low level of opportunities to achieve the set goals); 6) aggressive behavior (constantly in conflict with the coach, team, etc.); 7) suicidal behavior (harm to one's own health, depression, etc.). The highest degree of inclination to negative behavioral actions (score in the range from 8 to 10), according to experts, can be manifested in young athletes in addictive (25.0%), affective (20.0%) and aggressive (15.0%) behavior.

Conclusions. The main reasons that contribute to the emergence of asocial behavior of young athletes in the process of training activities have been identified: lack of understanding and positive experience of interaction in the family, environment outside the sports environment, problems with peers, increased anxiety, tendency to conflicts, external circumstances, lack of education, attention from the coaching staff. -teaching staff. The propensity of young athletes to the emergence of such forms of deviant behavior as addictive, affective, aggressive has been revealed.

The results obtained will help to improve the methodology of technologies and procedures for studying the causes and manifestations of deviant behavior of young athletes in the process of training activities, which will help to ensure the completeness of the description, explanation and prevention of the phenomenon under study.

References

1. Gilinsky Ya.I., Afanasiev V.S. Sotsiologiya deviantnogo povedeniya [Sociology of deviant behavior]. St. Petersburg: Filial Instituta RAN publ., 1993. 167 p.
2. Maysak N.V. Diagnostika i korrektsiya lichnostnykh osobennostey podrostkov s deviantnym povedeniyem [Diagnosis and correction of personal characteristics of adolescents with deviant behavior]. Astrakhan: Astrakhanskiy universitet publ., 2009. pp. 146-149.
3. Skok N.S. Deviantnoye povedeniye v sfere fizicheskoy kultury i sporta: kratkiy analiz metodologicheskikh podkhodov [Deviant behavior in the field of physical culture and sports: a brief analysis of methodological approaches]. Proceedings final scientific- practical conf., St. Petersburg for 2020, dedicated to the 125th anniversary of the University: in 2 parts. Part 1. St. Petersburg: [b.i.], 2021. pp. 224-227.

Fair group norms as a socio-psychological criterion of a healthy sports environment

UDC 159.9

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Abstract

Objective of the study was a theoretical presentation of the "healthy sports environment" construct through environmental (material), hygienic, pedagogical and socio-psychological criteria, taking into account the type of difficulties / problems of athletes, as well as a partial empirical substantiation of the socio-psychological criterion through the identification of typical rules of a sports group / teams and assessing the appropriateness of fair group norms (hereinafter referred to as FGN) in the real conditions of sports activities.

Methods and structure of the study. Theoretical analysis of literature; method of incomplete sentences for determining typical norms in sports "The rules of the group/team that were in my sports career are..." (at least three) with the participation of ex-athletes of different sports (n=138, men – 75, women – 63, age 21 – 32); content analysis; the feasibility and effectiveness of the development of the FGN was assessed in several teams in St. Petersburg in 2021-2022. in the form of a pilot experiment.

Research results and conclusions. An approach to the definition of the construct "healthy sports environment" in the narrow and broad senses is proposed. A typical number of group rules in a sports career among respondents, the predominance of rules of an organizational nature and their negative formulations (more often they begin with "not" and "not"), and stereotypes are noted. Most of the rules do not correspond to the signs of fair group norms. The conditions for the development of fair group norms for athletes/teams are indicated. The feasibility and effectiveness of the development of FGN was determined when working with several teams in St. Petersburg in 2021-2022.

Keywords: *healthy sports environment, its criteria, fair group norms (FGN).*

Introduction. Sports activity is one of the most powerful spheres of influence on a person. The younger the athlete, the more the nature of this influence is dual and ambiguous: either early involvement in sports as a resource for mastering and improving the social role of an "athlete", or as a source of emotional distress [2, 3, 5, 6, 7].

An ecological approach to the development of sports gifted children for a successful transition from juniors to elite sports is based on creating an environment that includes the unification of the efforts of all subjects of a sports career (coaches, parents), and on the long term instead of focusing on quick results, etc. [1, 5, 7, 9].

One of the mechanisms for the formation of the socio-psychological aspect of a healthy environment and its criterion is fair group norms that are the same for everyone, increase the efficiency of the group, do not humiliate its members [5, 8].

Objective of the study was a theoretical presentation of the "healthy sports environment" construct through environmental (material), hygienic, pedagogical and socio-psychological criteria, taking into account the type of difficulties/problems of athletes,

as well as a partial empirical substantiation of the socio-psychological criterion through the identification of typical rules of a sports group/teams and assessing the appropriateness of fair group norms (hereinafter referred to as FGN) in the real conditions of sports activities.

Methods and structure of the study. In the course of the theoretical analysis of the literature, the following methods were used: the method of unfinished sentences to determine typical norms in sports "The rules of the group/team that were in my sports career are..." (at least three) with the participation of ex-athletes of different sports (n=138, men - 75, women - 63, age 21 - 32); content analysis; the feasibility and effectiveness of the development of the FGN was assessed in several teams in St. Petersburg in 2021-2022 in the form of a pilot experiment.

Results of the study and their discussion. Speaking of "sports environment", we will have the sports environment of a sports school. One of our earlier definitions is the "educational environment of a sports school" [4], which in the context of the concept of "sports environment" is its definition in a narrow sense.

The sports environment (= sports school environment) can be considered: a) as the "environment" of all participants/subjects of sports activities; b) as a mode of a sports school (schedule, load of coaches and athletes, taking into account the stage of preparation); c) as a set of conditions for the associated development of sports training tasks in accordance with the stage and age-related tasks of the development of children and adolescents; d) as a system of relationships between all participants/subjects of sports activities.

The basis for classifying the sports environment as "healthy" or "unhealthy" is also the type of difficulties/problems that athletes face in the process of mastering and improving sports activities: 1) adequate difficulties/problems are associated with the psychological characteristics of youth sports; crises-transitions and situational crises of a sports career; learning objectives in accordance with the stage of sports training; age-related developmental tasks (life-span) (P. Baltes); 2) inadequate (excessive) difficulties/problems are determined by the impossibility of determining the "ideal" type of children at the initial stage of sports training; discrepancy between the abilities of some young athletes and the requirements of the chosen sport; forced training; destructive attitude of significant adults (parents and coach) to the child's sports activities, the "either-or" attitude - either sports or study [5].

A healthy sports environment is characterized by: a) according to the environmental (material) criterion - the compliance of all premises, equipment, etc. with sanitary and hygienic requirements; b) according to the hygienic criterion - optimal (i.e. corresponding to the age, gender, stage of sports training, readiness) physical and mental loads of athletes and coaches; c) according to the pedagogical criterion - subject-subject technologies of education and upbringing; d) according to the socio-psychological criterion - fair group norms for building relationships between the administration, coaches, parents, athletes; e) the presence of adequate difficulties / problems of young athletes.

The term "healthy sports environment" applies to a sports group or team in a situation of training sessions and competitions.

Content analysis of 1020 responses of respondents (n=138) in relation to group rules or team rules that were in their sports career, made it possible to highlight typical points (at this stage of the study, we were interested in the "general" category): 1. Number of rules – 3-9 (more rules for men than for women). 2. The list of norms and rules, regardless of gender, included 86.96% of the rules of an organizational nature ("do not be late", "put away inventory", etc.) and only 13.04% of the rules of an interpersonal nature ("stop", "do not fight", "Listen to the coach", etc.) 3. Template ("one for all and all for one", "the coach is always right ...", "we are a team", "do not be distracted", etc.) 4. Formulations. More often, the rules began with "no" and "no" ("no pushing", "no skipping a workout", etc.).

Thus, the function of a positive reference point in behavior and interpersonal interaction in these rules in the systems "coach-athlete/team", "athlete-athlete" was insufficient.

During the "reconstruction" and development of the FGN, a number of effective and previously tested conditions were taken into account [5]:

1. There should not be many rules (no more than 10). The younger the athletes, the less - no more than five. 2. Formulation of more rules in a positive way (as a guideline in behavior) ("listen carefully", "discuss calmly", "support", etc.) 3. From the point of view of ensuring security, there are several prohibition rules. 4. If possible, joint discussion of the rules and their

design in different forms (sneakers, ball, star, T-shirt, etc.) or in a more concise wording or image, the meaning of which is the same for everyone.

The team rules based on the signs of fair group norms were implemented in the process of preparing for the final of the Russian Championship among the teams of the constituent entities of the Russian Federation in women's football 2022 U19 in the national team of St. Petersburg, as well as in the process of preparing the team of School №2 of the Nevsky district of St. Petersburg to the semi-final of the Championship of the Russian Federation in volleyball among girls born in 2008 and younger (2021). Their effectiveness is confirmed by the positive assessment of the coaches, the high sports results of the teams, which is reflected in the acts of implementing the results of scientific work into practice.

Conclusions. The construct "healthy sports environment" can be defined on the basis of environmental (material), hygienic, pedagogical and socio-psychological criteria and through the type of difficulties of young athletes (adequate / inadequate (excessive).

The typicality of group rules/norms in a sports career was revealed on the basis of a retrospective approach in terms of quantity, the predominance of negative and stereotyped formulations and rules of an organizational nature, as well as their general inconsistency with the signs of FGN.

FGN is an indicator of the socio-psychological criterion of a healthy sports environment, contributing to constructive behavior in interpersonal relationships on the basis of the “in order to” principle. The expediency of their development and the effectiveness of their implementation were evaluated in the process of solving specific problems of sports training in real conditions (by sports results, by the satisfaction of team members, which is reflected in the acts of implementation).

The article was made within the framework of the state task of Lesgaft National State University of Physical Education, Sports and Health, St. Petersburg on the research topic “Improving the psychological and pedagogical support of a sports career” (2021-2023).

References

1. Veraksa A.N., Leonov S.V. Ekologicheskiy podkhod U. Bronfenbrennera v sportivnoy psikhologii [W. Bronfenbrenner's Ecological Approach in Sports Psychology Bulletin of Moscow University]. Seriya 14. Psikhologiya. 2009. No. 4. pp. 78-84.
2. Gorskaya G.B. Lichnostnyye i sredovyye faktory sportivnoy deyatelnosti [Personal and environmental factors of sports activity]. Krasnodar, 2022. 172 p.
3. Korshunova O.V. Mezhlichnostnaya problema: strakh rebenka pered trenerom. Khokkey budushchego [Interpersonal problem: the child's fear of the coach. Hockey of the future]. Proceedings national scientific-practical conferences with international participation; Lesgaft NSU. St. Petersburg, 2019. pp. 76-80.
4. Salnikov V.A., Babushkin G.D., Andrushchishin I.F. et al. Psikhologicheskiye faktory uspeshnosti v sportivnoy deyatelnosti [Psychological factors of success in sports activities]. Omsk: SibADI publ., 2020. pp. 261-324.
5. Khvatskaya E.E. Psikhologicheskoye soprovozhdeniye subyektov obrazovatelnoy sredy DYUSSH [Psychological support of the subjects of the educational environment of the Youth Sports School]. Olimpiyskiy sport i sport dlya vsekh [Olympic Sport and Sport for All]. Proceedings International Congress December 16-18, 2016. Part 1. St. Petersburg, 2016. pp. 627-630.
6. Serova L.K., Shtukkert A.L. Motivatsiya ili samootsenka – chto vazhneye na nachalnom etape sportivnoy podgotovki (na primere boksa) [Motivation or self-esteem - what is more important at the initial stage of sports training (on the example of boxing)]. Sportivnyy psikholog. 2021. No. 3 (60). pp. 18-21.
7. Positive Psychology in Sport and Physical Activity: An Introduction. (Ed.) Ab. Brady, Br.Grenville-Cleave. 1st. ed. London, New York, Routledge, 2017, 290p.
8. Snyder M., Snyder R. L., R.L. Snyder Sr. The Young Child As Person: toward the development of healthy conscience. New York, Human Sciences Press, 1980, 194 p.
9. Stambulova N., Ryba T., Henriksen K. Career development and transitions of athletes: the International Society of Sport Psychology Position Stand Revisited. International Journal of Sport and Exercise Psychology, 2020, Mar. P.1., pp. 27-32.

Theoretical foundations of classification of adaptive sport disciplines by physical load intensity

UDC 796.015.622

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Abstract

Objective of the study was to classify sports disciplines of adaptive sports according to the level of intensity of competitive loads.

Methods and structure of the study. To achieve this goal, an analysis was made of modern scientific publications and dissertations devoted to the study of improving the performance of Olympians and Paralympians, their reactions to competitive loads. An attempt was made to define universal criteria and approaches to classification. The search depth was 10 years.

Results and conclusions. Taking into account the variability of the content of competitive activity, approaches and methods for determining intensity zones, types of disorders in athletes, in the sport of persons with lesions of the musculoskeletal system (LMS), the classification of disciplines of adaptive sports was carried out taking into account the pulse zones during the competition, lactate indicators after the competition, and comparison of the time of performance of competitive activity with the power of muscular work.

The authors note that due to the lack of empirical data on the physiological and biochemical reactions of the body of Paralympic athletes, some positions of the classification were determined by extrapolation, and, therefore, can be revised as new data become available.

Keywords: *adaptive sport, intensity of physical activity.*

Introduction. The problem of developing a universal criterion for assessing and measuring the intensity of competitive loads of athletes with disabilities remains relevant and requires further study.

Objective of the study was to classify sports disciplines of adaptive sports according to the level of intensity of competitive loads.

Methods and structure of the study. To achieve this goal, modern scientific publications and dissertations devoted to the study of improving the performance of Olympians and Paralympians, their reactions to competitive loads were analyzed. An attempt was made to define universal criteria and approaches to classification. The search depth was 10 years.

In 2021-2022 faculty of the Institute of Adaptive Physical Culture Lesgaft National State University, St. Petersburg, carried out research work “Development of evidence-based proposals for improving the processes of physical training, education, upbringing and socialization of persons with disabilities, including the disabled, by means and methods of adaptive motor recreation and adaptive sports” (based on the order Ministry of Sports of Russia No. 955 of December 22, 2020). The research plan assumed the classification of disciplines of adaptive sports, including the intensity of physical activity. In the course of the work, the most universal approaches to determining the intensity of loads were concretized and characterized.

Results of the study and their discussion. A *common approach* is based on determining the predominant mechanism for energy supply of muscle work and the volume of oxygen consumption by tis-

sues. In accordance with it, three mechanisms of energy supply are distinguished: aerobic, anaerobic and anaerobic-aerobic. The intensity of the load is determined by the duration of physical work and the mechanism of its energy supply [1].

Common approaches include determining the intensity of physical activity by indicators of lactate in the blood, as well as indicators of heart rate (HR) during exercise. These indicators, in relation to the duration of the work performed, make it possible to plan loads in a certain intensity zone, the calculation of which is made from the athlete's anaerobic support threshold (ANOT), which makes it possible to individualize these zones for those involved in different levels of preparedness.

However, this approach should be applied in cyclic sports disciplines. For acyclic, game sports disciplines, martial arts, its relevance is lower, since various mechanisms of energy supply are involved in the energy supply of the competitive activity of an athlete, and the volume, duration and power of work depend on many variable factors.

For various types of martial arts, a mixed mode of operation is characteristic: during a fight, depending on the situation, an aerobic or anaerobic oxidation mechanism may prevail. The high intensity of the competitive fight is provided mainly by the anaerobic mechanism of oxidation. Also in these disciplines there is a high variability in the time of performing competitive actions: on average, a fight lasts about 3-4 minutes, which is provided by glycolytic oxidation and corresponds to high power work. At the same time, actions with the maximum power of muscular work (a series of strikes, throws or their combinations) can be performed during the specified period. In this regard, heart rate indicators are also used to plan the intensity of the load in martial arts.

In gaming sports disciplines, there are also developed ranges of physical activity intensity, but they are not universal, since the volume and power of work performed by a particular player during a competition depend on his role, tactical settings and game situation.

A *specific approach* to determining the intensity of loads is used in power disciplines, where its main criterion is the power of work. The power of muscular work is determined by the product of the mass of the lifted load by the number of repetitions and the distance over which the load moves. This approach to determining the intensity is used in planning the training loads of powerlifters, however, its individualization does not allow it to be used as a universal method for classifying.

In the course of the analysis of more than 160 scientific and methodological publications, we have not identified studies that systematize and generalize the indicators of the heart rate of Paralympic athletes for physical activity of different power and intensity. However, the analysis made it possible to identify relevant and *individualized approaches* to determining physical stress intensity zones - determining individual pulse training zones, the Joe Friel method - determining intensity zones as a percentage of the ANOT, Peter Jansen's method - determining intensity zones as a percentage of an athlete's maximum heart rate, Marti Karvonen's method – determination of intensity zones from the heart rate reserve, the method of Allen and Kogan, according to which training zones are calculated from the functional power threshold [3].

The described approaches and methods make it possible to plan training loads, but do not provide indicators that can be used as a universal classification criterion for intensity, since they are calculated individually, and the physiological characteristics of Paralympic athletes have a high variability.

Biochemical parameters of blood can serve as objective indicators for determining intensity zones in the disciplines of adaptive sports, however, modern research is mainly aimed at studying the correspondence of biochemical changes resulting from physical exertion to the level of an athlete's physical fitness and assessing his adaptive capabilities to physical activity.

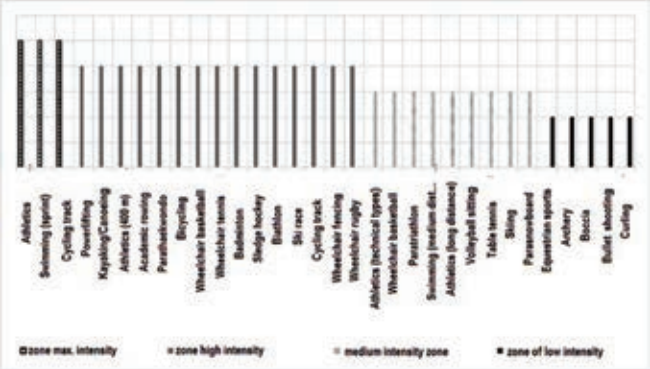
N.B. Novikov and N.B. Kotelevskaya, in her study on the assessment of the biochemical indicators of fitness of Paralympic skiers, compared intensity zones by the type of energy supply mechanism with lactate indicators and individual heart rate indicators of an athlete as a percentage of the maximum heart rate [2].

Using this approach to analyze the data obtained in the study by N.D. Goldberg and N.B. Kotelevskaya [1], we determined that sports disciplines: middle-distance running, swimming 400 m, cross-country skiing 1200, 5000, 1000 m can be attributed to work performed in the submaximal power zone of the corresponding anaerobic-glycolytic intensity zone. Disciplines such as 50m swimming, sprinting, belong to the maximum power zone and the anaerobic-alactic intensity zone, respectively.

However, in the sport of persons with lesions of the musculoskeletal system (LMS), the problem of tak-

ing into account the sports-functional class arises. Athletes classified in different classes according to the type of disorders, overcoming the same distance, spend different time on this and develop different power of muscle work, which significantly affects the mechanisms of energy supply and the amount of lactate in the blood. This approach is also unreliable in determining the intensity of competitive loads for situational disciplines, since the teams include athletes with different levels of functionality and performing tactical tasks of different volume and intensity.

The classification of disciplines of adaptive sports, taking into account the pulse zones during the competition, lactate indicators after the competition, and comparing the time of performing competitive activity with the power of muscle work made it possible to classify the Paralympic disciplines of sports for people with LMS, taking into account these indicators (see figure).



Classification of the Paralympic disciplines of sports for persons with LSM by zones of intensity of physical activity

Conclusions. In view of the variability of the content of competitive activity, approaches and methods for determining intensity zones, types of impairments in athletes, in the sport of persons with PHD, it is advisable to classify the disciplines of adaptive sports, taking into account: pulse zones during the competition, lactate indicators after the competition, and comparing the time for performing competitive activity with muscle power.

However, due to the lack of empirical data on the physiological and biochemical reactions of the body of Paralympic athletes, some positions of the classification were determined by extrapolation, and therefore may be revised as new data become available.

References

1. Goldberg N.D., Kotelevskaya N.B. Biokhimicheskiy kontrol v sisteme podgotovki paralimpiytsev [Biochemical control in the training system of Paralympic athletes]. Innovatsionnyye tekhnologii v sisteme podgotovki sportsmenov-paralimpiytsev [Innovative technologies in the training system of Paralympic athletes]. Proceedings national scientific-practical conference with international participation (June 29-30, 2016). Federal State Budgetary Institution “Saint Petersburg Research Institute physical culture”. St. Petersburg, 2016. pp. 44-48.
2. Novikova N.B., Kotelevskaya N.B. Otsenka biokhimicheskikh pokazateley podgotovlennosti lyzhnikov-paralimpiytsev [Evaluation of biochemical indicators of readiness of Paralympic skiers]. Tsarskoselskiye chteniya [Tsarskoye Selo Readings]. 2010. pp. 279-282.
3. Jeffries Owen; Simmons Richard; Patterson Stephen; Waldron Mark, Functional Threshold Power Is Not Equivalent to Lactate Parameters in Trained Cyclists. Journal of Strength and Conditioning Research: October 2021. Vol. 35. Issue 10. pp. 2790-2794.

Technologies for testing relative indicators of physical fitness of disabled people in the format of the VFSK GTO

UDC 796.011

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Abstract

Objective of the study was to test the technology of using (testing) the relative indicators of physical fitness of disabled people within the framework of the All-Russian physical culture and sports complex "Ready for Labor and Defense" (GTO) for disabled people.

Methods and structure of the study. To achieve this goal, within the framework of the state assignment for research work on the topic “Research of means and methods aimed at forming motivation, in persons with disabilities (taking into account sensory, motor and mental disorders) for systematic physical culture and sports on the example of the All-Russian physical culture and sports complex "Ready for Labor and Defense" (VFSK GTO) for the disabled (2020-2022) "based on the order of the Ministry of Sports of Russia No. 1034 dated December 14, 2018, in accordance with the terms of reference, the working group analyzed the results of the participation of people with disabilities with hearing, vision, musculoskeletal and intellectual disabilities in the VFSK GTO for the disabled. We studied individual protocols for testing the physical fitness of people with disabilities, various nosological groups, both primary and the results of re-applying to testing centers in order to improve their result or receive a distinction for the next age group, for the period 2019-2021.

Results and conclusions. In the process of conducting research, positive dynamics was revealed in the indicators of physical fitness of disabled people of various nosological groups, expressed in improving the results of repeated fulfillment by participants of the test standards (tests) of the VFSK GTO for disabled people, which confirms the need to introduce relative indicators that reflect the individual dynamics of indicators of physical fitness of the contingent with disabilities.

Keywords: *adaptive physical culture, adaptive sport, All-Russian physical culture and sports complex "Ready for Labor and Defense" (GTO) for the disabled, relative indicators of the physical fitness of the disabled.*

Introduction. Today, in the composition of the population of the Russian Federation, there is an increase in the number of citizens with disabilities. This trend, of course, requires its solution in terms of increasing the level of socialization of the disabled, including using the tools of physical culture and sports. This provision is fixed in a number of regulatory documents, which indicate the need to involve all groups of the population of our country, including the disabled, in systematic physical education and sports [2]. Thus, a significant goal of the Strategy for the Development of Physical Culture and Sports in the Russian Federation for the period up to 2030 is to achieve by 2030 30% of people with disabilities involved in physical culture. To achieve this goal, it is advisable to use the full range of funds within the framework of the adaptive physical culture, including the possibilities of the VFSK GTO for the disabled.

According to the Federal Operator of the GTO - the autonomous non-profit organization “Directorate of Sports and Social Projects”, the number of participants in the physical culture and sports complex, including participants with disabilities, is increasing every year.

For the period from February 2019 to December 2021, 20,633 people took part in the VFSK GTO for the

disabled. Moreover, the increase in the total number of participants in the GTO complex for the disabled in 2020 was only 7.2%, and in 2021 it was already 35%.

Objective of the study was to test the technology of using (testing) the relative indicators of the physical fitness of disabled people within the framework of the All-Russian physical culture and sports complex "Ready for Labor and Defense" (GTO) for the disabled (VFSK GTO for the disabled) to further adjust the motivation of people with disabilities to systematic adaptive training. physical culture and adaptive sports, as well as improving the standards of the VFSK GTO for the disabled and people with disabilities.

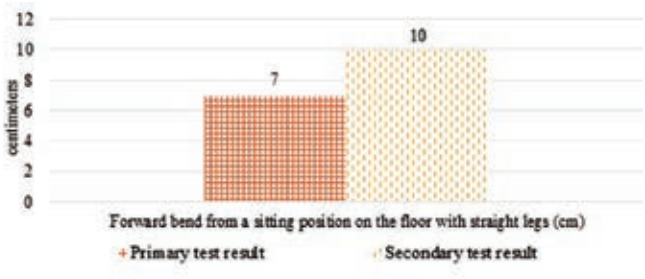
Methods and structure of the study. In the process of conducting research work, the results of the participation of persons with disabilities in the GTO complex for the disabled for the time period from 2019 to 2021 were studied and analyzed. Individual testing protocols for disabled people of various nosological groups were studied, both primary data and the results of repeated fulfillment of test standards (tests), in order to improve their result or fulfill the GTO standards in the next age group [4].

The study involved 893 disabled people with disabilities in the city of St. Petersburg, including: persons with intellectual disabilities - 474 people; persons with hearing impairment - 107 people; persons with visual impairment - 67 people; persons with lesions of the musculoskeletal system - 245 people.

The largest group of participants in the GTO complex for the disabled were people with intellectual disabilities.

Results of the study and their discussion. As the study showed, out of 474 persons with intellectual disabilities who took part in the VFSK GTO for the disabled, only 30 people re-applied to the testing center to fulfill the test standards (tests) of the VFSK GTO for the disabled, which indicates the need to strengthen work to increase the level of motivation among disabled people, in particular those with intellectual disabilities, to systematic APC classes. Of these 30 people: 16 improved their performance; 12 participants showed a stable result; one participant showed a worsening result; and one participant chose standards that differed from the primary test (see table).

The figure shows the dynamics of the result during repeated testing of a participant with intellectual disabilities when fulfilling the test standard (test) of the VFSK GTO for the disabled: bending forward from a sitting position on the floor with straight legs (cm).



Dynamics of the result during repeated testing of participants

VFSK GTO with intellectual disabilities

The presented data clearly show that for the majority of disabled people who repeatedly took part in the VFSK GTO, the results either improved or stabilized. And, in the case of using relative indicators of individual dynamics to assess the level of physical fitness in practice, these participants could already qualify for one or another distinction, which would certainly increase their level of motivation for further physical activity.

Conclusions. It was found that the number of participants in the physical culture and sports complex,

Table 1. *The results of testing the norms of the VFSK TRP for the disabled on the example of test standards (tests) for persons with intellectual disabilities*

Name of the test (test) by choice	Test result			Physical qualities
	Primary	Repeated	Dynamics	
30m run (s)	5,6	4,8	+	Speed capabilities
3000 m run (min, s)	15,02	14,00	+	Endurance
Flexion and extension of the arms in emphasis lying on the floor (number of times)	25	30	+	Strength
Forward bend from a sitting position on the floor with straight legs (cm)	7	10	+	Flexibility
Throwing a ball weighing 150 g (m)	32	40	+	Speed-strength capabilities
Throwing a tennis ball at a target, distance 6 m (number of hits out of 20 throws)	15	18	+	Coordinating abilities

Note: "+" - increase; "-" - decrease; "=" - repetition of indicators without changes.

including participants with disabilities, is increasing every year.

In the process of analyzing individual testing protocols for 893 disabled people of various nosological groups, it was found that a significantly smaller part of the participants of the VFSK GTO for the disabled applied again to the testing centers to fulfill the norms of the VFSK GTO for the disabled, in order to improve their result or when moving to another age group. for the disabled, which indicates the need to strengthen the work to increase the level of motivation among the disabled to systematically engage in adaptive physical culture and adaptive sports.

In addition, in the process of scientific research, a tendency was revealed to improve or stabilize the level of physical fitness in the majority of disabled people of various nosological groups who took part in the testing again.

In general, it can be argued that the analysis of the number of repeated appeals to the testing centers for participants of the VFSK GTO and their positive dynamics give reason to believe that the introduction of relative indicators of physical fitness within the framework of the VFSK GTO for the disabled is an effective tool for creating motivation for systematic adaptive physical education and adaptive sports.

References

1. Rasporyazheniye Pravitelstva ot 24 noyabrya 2020 g. № 3081-r «Ob utverzhdenii Strategii razvitiya fizicheskoy kultury i sporta v Rossiyskoy Federatsii do 2030 goda [Government Decree of November 24, 2020 No. 3081-r “On Approval of the Strategy for the Development of Physical Culture and Sports in the Russian Federation until 2030] [Electronic resource]. Available at: http://static.government.ru/media/files/Rr4JTrKDQ5nANTR1Oj29BM7zJBHXM05d .pdf (date of access: 09.15.2022).
2. Evseev S.P., Aksenov A.V., Kryukov I.G., Korablev S.V. Analiz uchastiya invalidov i lits s ogranichennymi vozmozhnostyami zdorovya vo Vserossiyskom fizkulturno-sportivnom komplekse «Gotov k trudu i oborone» (GTO) dlya invalidov [Analysis of the participation of people with disabilities and people with disabilities in the All-Russian physical culture and sports complex “Ready for Labor and Defense” (GTO) for people with disabilities]. Adaptivnaya fizicheskaya kultura. 2021. No. 3 (87). pp. 51-52.
3. Evseev S.P., Aksenov A.V., Kryukov I.G., Matveeva S.S. Primeneniye tekhnologii testirovaniya otnositelnykh pokazateley fizicheskoy podgotovlennosti lits s ogranichennymi vozmozhnostyami zdorovya v protsesse podgotovki i uchastiya vo VFSK GTO dlya invalidov [Application of technology for testing the relative indicators of physical fitness of persons with disabilities in the process of preparation and participation in the VFSK GTO for the disabled]. Aktualnyye podkhody k formirovaniyu fizicheskoy kultury lichnosti v protsesse realizatsii VFSK GTO [Actual approaches to the formation of personal physical culture in the process of implementation of the VFSK GTO]. Proceedings national scientific-practical conference. Yekaterinburg, 2021. pp. 39-42.

Lexical means of creating the image of the 2022 olympic games in beijing in russian new media

UDC 796.011.3

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Abstract

Objective of the study was to identify the characteristic lexical means that form the actual image of the 2022 Olympic Games in Beijing in the new Russian media.

Methods and structure of the study. In the course of scientific work, an analysis was made of the Russian websites of the newspapers «Izvestia» and «Arguments and Facts», which are included in the «Top 10 Russian Media - January 2022» (according to the Medialogy website). In total, 100 articles on the Beijing 2022 Olympics were analyzed, complex analysis, linguocultural analysis, descriptive and comparative methods, observation and classification methods were used.

Results and conclusions. An analysis of the texts of new media dedicated to the 2022 Olympic competitions allows us to conclude that rhetorical figures predominate in them, including pun (38% of the total volume of the analyzed vocabulary) and metaphor (33%), as well as vernacular and colloquial lexical units (28%), which are distinguished by anorativity in the field of vocabulary, which, in turn, brings vivid expression and expressiveness to the text. The image of the Olympic Games is made up of lexical expressive means that have a strong connection with the linguistic culture of readers: puns have a comic basis, which attracts the reader's attention; metaphors with mega-spheres-sources "medicine", "theater", "war" allow you to create an image based on the conceptual system of a person; colloquial and colloquial lexical units contribute to the formation of the most relevant and accessible image of the 2022 Olympics.

Keywords: *new media, lexical means, linguoculturology, sports, Olympiad.*

Introduction. A large number of domestic studies are devoted to the study of the image of Russian sports in the media, since the activities of athletes are an important component of the image of the state [3]. The representation of the achievements of Russian athletes in the media becomes part of both political and sociological, cultural and other discourses [1, 4]. Linguistic ways of creating imagery in journalistic texts are also one of the hot topics in Russian science [2]. The Olympic Games in this context are not only the most important event in which Russian athletes can demonstrate their professional qualities, game results and personal achievements. It should also be taken into account that key events such as the Olympic Games affect Russia's geopolitical image and patriotic sentiments in society.

The study of ways to represent the image of the 2022 Olympic Games in Beijing in the context of Russian new media seems relevant in the light of the current policy of ousting Russian sports from the international arena in the modern world community. Understanding the principles of creating a memorable image of the Olympiad in the minds of recipients allows them to update their attention on the achievements of Russian athletes, and contributes to the formation of public interest in Russian sports. The relevance of the presented study, on the one hand, lies in the great potential of modern mass communications as a popularizer of Russian sports, and on the other hand, in the linguocultural value of lexical means used to create an attractive image of Russian sports in the minds of new media recipients.

Objective of the study was to identify the characteristic lexical means that form an attractive image of the Beijing 2022 Olympic Games for recipients of new Russian media.

Methods and structure of the study. In the course of scientific work, an analysis was made of the Russian websites of the newspapers Izvestia and Arguments and Facts, which are included in the Top 10 Russian Media - January 2022 (according to the Medialogy website) [6]. In total, 100 articles on the Beijing 2022 Olympics were analyzed, complex analysis, linguocultural analysis, descriptive and comparative methods, observation and classification methods were used.

Results of the study and their discussion. The analysis made it possible to identify the most common lexical means with which the image of the 2022 Olympics is created in new media, including puns (39% of the total volume of the analyzed vocabulary), metaphors (33%), vernacular and colloquial vocabulary (28%).

Puns as a means of linguistic expression are most often found in the headings of articles, their purpose is provocation, they draw the attention of readers to articles of an analytical nature, and update the novelty of the article's material.

During the 2022 Olympics in Beijing, pun headlines contained information about the opening of the Games in the context of the coronavirus pandemic ("Beijing Morning: which Russian will win Olympic medals in China" ("Izvestia" 04.02.2022); "Parade is a victory: how was the opening ceremony of the 2022 Olympics" ("Izvestia" 04.02.2022); "Game constructions: in what atmosphere the Olympics in Beijing open" ("Izvestia" 03.02.2022); "Olympic pressure: how the 2022 Games begin in a pandemic "("Izvestia" 02/01/2022); "It's covid for the state: how the departure of athletes due to coronavirus will affect the Russian national team" ("Izvestia" 01/31/2022), about the victories of Russian skiers and successful matches of hockey players ("Ski hills: how the Russian team performed on the first day of the Games in Beijing" ("Izvestia" 02/05/2022); "We did it in China: how Bolshunov won the skiathlon and broke the podium" ("Izvestia" 02/06/2022); "Bronze Vik: the heroes of the fourth day of the Games became Wilde, Ivanova and Terentiev "(Izvestia" 02/07/2022); "About Fedotov the catcher: the goalkeeper helped x the hockey team to win the first victory" ("Izvestia" 10.02.2022); "And all for one: Bolshunov took the second medal in Beijing" ("Izvestia" 02/11/2022); "Relay lifesaver: how Russia took the third gold of the 2022 Games" ("Izvestia" 02/12/2022).

The Russian mass media paid special attention to the performances of figure skaters at the 2022 Olympics, who fell into controversial doping scandals that undermine the morale of athletes: almost every day, articles were published with pun headlines in support of Russian figure skaters ("Put on a medal: when Russian skaters receive a well-deserved award! "(Izvestia" 02/10/2022); "Star on the ice: how Tatyana Tarasova made the country fall in love with figure skating" ("Izvestia" 02/13/2022); "Not at CAS: will pressure on Valieva stop after her victory" ("Izvestia "02/13/2022); "Ice and plans: Russian skaters remain the main characters of the Olympics" ("Izvestia" 02/14/2022); "Ball dance: Valieva continues to fight for the gold of the Olympics" ("Izvestia" 02/14/2022).

Metaphors are also often found both in the headlines and in the texts of articles devoted to the 2022 Olympics in Beijing, since they are "closely connected with the linguistic culture of native speakers, reflect the linguistic picture of the people's world, are a kind of transmitters of "cultural information", a source of cognitive development reality" [5, p.2690].

In sports, there is always an element of competition, rivalry, struggle, which makes it possible to reveal the image of the 2022 Olympics through metaphors with the megasphere-source "war" ("Instead of fighting on the tracks, they had to fight in the courts" ("Izvestia", 02/04/2022). Such lexical units such as fight, defense, attack, fight, sniper, kill, are often found in these metaphors ("Instead of explosive attacks, the audience saw viscous defensive hockey" ("Arguments and Facts", 02/23/2022); "On home arenas and tracks they they'll definitely give a fight" ("Izvestia" 02/04/2022); "One of the best KHL snipers Stanislav Galiev took the place of Kirill Marchenko from SKA" ("Izvestia" 02/09/2022); "Valiev was "killed" at the Olympic Games in Beijing" ("Arguments and facts" 18/02/2022).

Metaphors with the mega-source "medicine" represent sport as a living organism, the purpose of such metaphors is to influence the recipient's emotional and volitional sphere, to arouse their sympathy for athletes: "and now being a standard-bearer is at least some kind of compensation for that nightmare" ("Izvestiya", 02/04/2022), "political negativism has not given way, in fact, to sport" ("Izvestiya", 02/03/2022).

The visual appeal of the Olympic Games, the conflicts of interests of various countries, organizations, teams, athletes that arise during the competition give the image of the 2022 Olympics theatrical features, which is achieved through the use of metaphors with the megasphere source "theater": "it has Olympic gold, but played he is far from a key role in that team" ("Izvestia", 04/02/2022); "The disqualification of the Russian Olympic Committee (ROC) team in the mixed relay at the Beijing Olympics was the result of bad luck and an "offensive drama" ("Izvestia", 05/02/2022); "The main heroine of Beijing 2022 is in first place after the short program" ("Izvestia", 02/15/2022); "But if in a personal race it's just a shame, then in the relay race, having a minute lead, it's a real tragedy" ("Izvestia" 02/16/2022); "At the Olympic Games 2022, a lot of dramas were played out with the participation of Russian athletes" ("Arguments and Facts", 02/13/2022).

Colloquial and colloquial lexical units encountered in the process of creating the image of the Beijing Olympics contribute to the convergence of the language of the mass media and the language of the recipients, present the Olympic Games as an event understandable and close to the reader: "before the first medal draws, nothing at all" ("Izvestia", 04/02/2022); "... the ski team is more popular than him. Yes, biathlon. We are not talking about skaters at all. ... But there are no questions about Fatkulina" ("Izvestia", 04/02/2022); "San Sanych was more than a minute ahead of his closest pursuer in the skiathlon Russian Bolshunov corrected his karma, now the Olympic gold medal is in his pocket" ("Izvestia", 02/06/2022); "We have an awesome future in ski jumping" ("Izvestia", 02/07/2022); "It would seem that the words on duty, but they materialized. At the 2014 Games, Irina Avvakumova failed to perform successfully - 16th place, but every year the results went up. And now in Pyeongchang in 2018 it is already the fourth" ("Izvestia", 02/07/2022); "Too many bright players didn't get into the application", "The first one played for Detroit last season ("Izvestia", 02/09/2022); "After the victory of the Russian women's team in the 4 5 km relay, everyone dreamed of continuing the banquet - a repeat of the success of our guys in the 4 10 km relay" ("Arguments and Facts" 13.02.2022); "But how cool that at this moment the team is on his side" ("Izvestia", 02/15/2022).

The analysis of lexical means of expression shows the contrast between the stylistics and semantics of the used vocabulary. When a metaphorical mosaic is included in the text, all its functions are realized, including the aesthetic one, but the accent role is played by its emotive variety. Carrying out various semantic and contextual functions, these educations help to form a positive image of a Russian athlete participating in the 2022 Olympics in Beijing, draw the attention of an ordinary reader to the current problems and help him formulate an adequate attitude to what is happening in the space of the Olympiad.

Conclusions. By 2022, an ambiguous attitude towards Russian athletes has developed in the world sports community, which indicates the need to provide them with psychological and moral support from commercial and state media, which can be expressed by creating a positive, prestigious, attractive image of Russian sports in the minds of recipients.

The appearance of catchy puns, metaphors, colloquial and colloquial vocabulary in the headlines and texts of articles makes it possible to form a specific image of the 2022 Olympics in Beijing, using the symbols of the era, culture, language that are relevant for the recipients, to fill this image with semantically significant details, emphasize the drama and tension of situations, in which our Olympians turned out to be, as well as to objectively present the role of Russian athletes in such an important international tournament.

References

1. Astashkina P.G. Olimpiada kak tematicheskaya dominanta reprezentatsii natsionalnoy identichnosti [Olympiad as a thematic dominant of the representation of national identity]. Uchenyye zapiski Novgorodskogo gosudarstvennogo universiteta im. Yaroslava Mudrogo. 2018. No. 1 (13). pp.1-5.
2. Burskaya E.A. Fonosemanticheskiy aspekt yazykovoy metafory v sovremennoy publitsistike [Phonosemantic aspect of language metaphor in modern journalism]. Gumanitarnoye obrazovaniye v ekonomicheskom vuze [Humanitarian education in economic university]. Proceedings international scientific-practical conference. 2019. pp. 179-186.
3. Gladkova A.A. Obraz Rossiyskogo sportsmena v zarubezhnykh SMI (na primere publikatsiy o zimnikh Olimpiyskikh igrakh 2010 goda v Vankuvere) [The image of a Russian athlete in foreign media (on the example of publications about the

2010 Winter Olympics in Vancouver)]. Vestnik Moskovskogo universiteta. Zhurnalistika. Seriya 10. 2011. No. 2. pp. 161-181.
4. Korneeva V.A. Aktualizatsiya sportivnogo diskursa «myagkoy sily» v usloviyakh eskalatsii politicheskogo napryazheniya [Actualization of the sports discourse of "soft power" in the context of the escalation of political tension]. Diskurs-Pi. 2017. No. 3-4 (28-29). Vol. 14. pp. 269-275.
5. Lonskaya A.Yu. Metafora v politicheskom diskurse rossiyskikh pechatnykh SMI kak instrument verbalizatsii lingvokulturnykh realiy (1991-2008 gg.) [Metaphor in the political discourse of Russian print media as a tool for verbalization of linguistic and cultural realities (1991-2008)]. Filologicheskiye nauki. Voprosy teorii i praktiki. 2021. Vol. 14. Issue 9. pp. 2689-2694.
6. Medialogiya: «Top-10 Rossiyskikh SMI – yanvar 2022» [Medialogy: "Top 10 Russian media - January 2022"]. Available at: https://www.mlg.ru/ratings/media/ (date of access: 03.05.2022).

Students' attitude to physical activity under blended learning

UDC 796.011.1

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Abstract

Objective of the study was to determine the attitude of students to physical activity during the period of COVID-19 (2019-2022).

Methods and structure of the study. The empirical study (Internet survey), which took place during three years of study (1-3 courses), was attended by students of the Plekhanov Russian University of Economics (n=1272).

Results and conclusions. The survey showed a decrease in the physical activity of students, a slight increase in the number of young people who do not go in for physical exercises. Among the students involved in motor activities, there was a more rational distribution of time with devices: 2-3 hours - (8.6-14.7-13.9%), 4-6 hours - (36.4-41.9-41.9%), positive changes in the frequency of classes per week (every day (32.85-22.7-29.1%); 2-3 times a week (40.6-49.8-44.7%); increasing the use of individual complexes for the prevention of posture disorders (8.1-11.2-13.6%) The findings of the study allowed us to develop an experimental method of physical education in a mixed learning format.

Keywords: *physical activity, students, physical education, mixed format of education, health systems.*

Introduction. The introduction of anti-pandemic measures (COVID-19) in universities, the impact of stress factors led to a decrease in the level of students' health, a change in priorities in communication (online relationships), recreation (gadgets), and physical activity (individual classes) [2, 3].

Today, 95% of young people are active Internet users: virtual life (digitalization of individual and social relations, immersive learning, phubbing) leads to the loss of the "corporeality" of the individual, to the gradual leveling of the value of physical health, harmonious physique, and physical education [1; four].

In this situation, an empirical study will allow us to study the attitude of students to physical activity, identify priorities in the daily routine and changes in the choice of areas of motor activity, formulate the conclusions of the study for their further use in the physical education of students.

Objective of the study was to determine the attitude of students to physical activity in a blended learning format.

Methods and structure of the study. The work includes the collection of empirical data, statistical processing, comparative analysis and generalization of the results, formulation of conclusions. The empirical database was the results of the author's online survey on the topic "Physical activity in the daily routine of a modern student" (Google Form). Students of the Plekhanov Russian University of Economics (n=1272), 78.2% of girls and 21.8% of boys filled out the questionnaire for three years: April 2020 (1st year) - full-time distance learning format in conditions of restrictions and self-isolation (COVID-19);

April 2021-2022 (years 2 and 3) - full-time and blended learning formats. The developed form of testing was built in the form of a link into the methodological and practical tasks of students in the academic discipline "Physical Culture" and practical tasks for the modules "Elective disciplines of physical culture and sports" (in the Moodle system).

Results of the study and their discussion. A comparative analysis of the results of the survey showed that during the three years of study in an unstable epidemiological situation, there was a decrease in the physical activity of students and an increase in the number of young people who do not exercise in the daily routine, which is due to the shift in the time of physical activity to the virtual world of the life of the respondents (Figure 1).

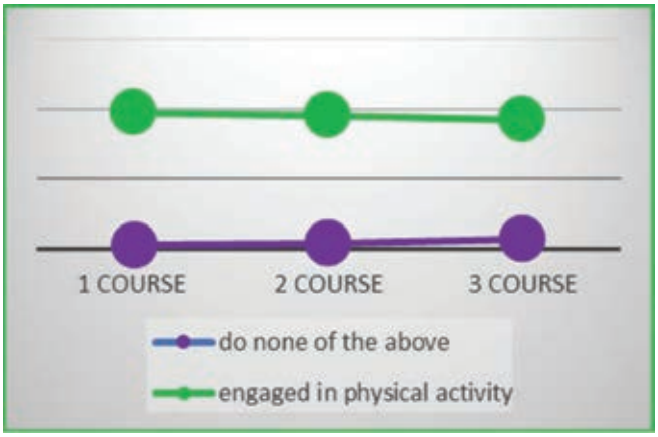

Figure 1. *Physical activity students during the pandemic*

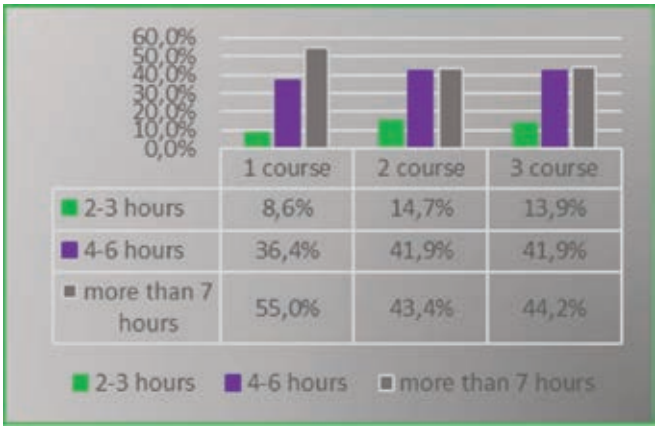

Figure 2. *Dynamics of student use of devices during the day*

A gradual increase in the number of students using devices during the day for learning, communication, games, etc. was revealed. (2020, 2021, 2022): 2-3 hours - (8.6-14.7-13.9%), 4-6 hours - (36.4-41.9-41.9%). The decrease in the virtual activity of students spending time at a computer and gadgets for more than 7 hours in the second year of study (from 55.0% to 43.4%) indicates their adaptation to mixed forms of education, a more rational distribution of time. However, in the third year of study, there is an increase in the number of students using devices for more than 7 hours, which is due to an increase in the number of students who do not engage in physical activity at all during the day (Figure 2).

The survey showed a decrease in all studied types of physical activity of students by the end of 2022 (morning exercises, training on simulators, performing an individual set of physical exercises, physical activity using digital technologies), which is explained by their social disadaptation in unusual learning conditions and social restrictions, positive results were recorded only in the students' activities of walking (running) in the fresh air (from 19.3% to 23.2%) (Figure 3).

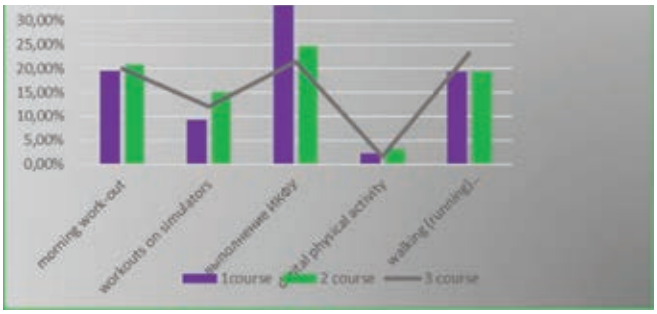

Figure 3. *Dynamics of physical activity of students*

At the same time, the revealed changes in the frequency of classes by students per week (every day (32.85-22.7-29.1%); 2-3 times a week (40.6-49.8-44.7%); according to mood (26.6-27.6-26.2%) state an improvement in the organization of independent physical education classes (Figure 4).

Of all the proposed areas of additional online classes, a gradual increase in the areas chosen by students "Dance Fitness" and "Healthy Back" was noted, which is due to discomfort in the musculoskeletal system, the desire to improve not only physical health, but also mood (psychological state). Other areas had an undulating up and down trend, but fell short of their original first year target.

The study revealed the dynamics of changes in the directions of individual complexes of physical exercises (ICPE) of students. There was a gradual

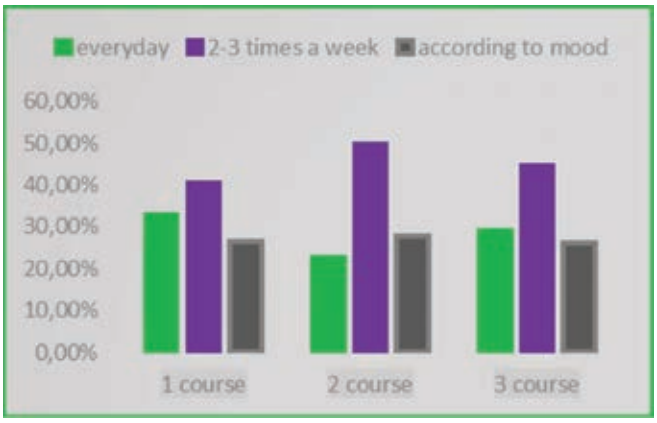

Figure 4. *Changes in the frequency of study by respondents per week*

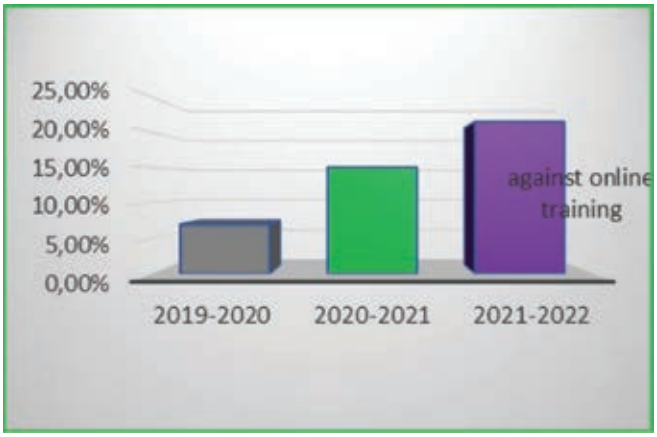

Figure 5. *Students' attitudes towards online training*

decrease in the focus of ICPE on general physical development (61.0-61.7-55.2%), the development of strength abilities (18.6-16.7-14.5%) and flexibility (11.1-9, 9-9%). The largest increase was recorded in the use of ICPE for the prevention of postural disorders and flat feet (8.1-11.2-13.6%), which is due to the constant spending of time by students with devices and disorders of the musculoskeletal system.

It is worth noting the trend of students' negative attitude towards compulsory and additional online classes and sports training: during the three years of study, 6.9-15.0-21.5% of students opposed online physical education classes, which indicates the desire of students to engage in full-time format, including communication with the teacher and fellow students (Figure 5).

A comparative analysis of the attitude of students of a non-physical education university to physical activity in a mixed learning format made it possible to formulate proposals for the organization and content of students' physical education.

Conclusions. In the context of a mixed learning format, a slight increase in the number of students who do not engage in physical activity during the day was recorded. Among the students using physical exercises, the following were noted: rational distribution of time for physical and virtual activities (adaptation to mixed forms of education); preference for outdoor activities (walking and running); the focus of individual complexes and additional classes on the prevention of diseases of the musculoskeletal system (improvement of the organization of self-study).

The study revealed an increase in the desire of students to study in full-time format, including communication with the teacher and fellow students.

The results of the survey made it possible to develop a methodology for the physical education of students in a mixed learning format with the inclusion of recreational walking and running in the content of classes; exercises from various health systems aimed at preventing and preventing disorders of the musculoskeletal system; organization of additional classes "Nordic walking", "Healthy back", "Dance fitness".

References

1. Isaeva A.N. «Bestelesnost» lichnosti v usloviyakh virtualnoy kultury ["Disembodied" personality in the conditions of virtual culture]. Psikhologiya. Zhurnal Vysshey shkoly ekonomiki. 2021. No. 3. pp. 491-505.
2. Lubysheva L.I., Pashchenko L.G. Sovremennyye sotsialnyye protivorechiya massovogo sporta [Modern social contradictions of mass sports]. Teoriya i praktika fizicheskoy kultury. 2022. No. 9. pp. 3-6.
3. Mamonova O.V., Glazkova G.B., Lubyshev E.A., Bakulina E.D. Fizicheskoye vospitaniye studentov SMG v usloviyakh sovremennykh vyzovov [Physical education of SMG students in the conditions of modern challenges]. Teoriya i praktika fizicheskoy kultury. 2022. No. 5. pp. 71-73.
4. Shpakov A.I., Klimatskaya L.G. et al. Rasprostrannennost perezhivaniya odinochestva sredi studentov universitetov pyati yevropeyskikh stran vo vremya pandemii COVID-19 [The prevalence of loneliness among university students in five European countries during the COVID-19 pandemic]. Psikhologiya. Zhurnal Vysshey shkoly ekonomiki. 2021. Vol. 18. No. 3. pp. 871-888.

Influence of urbanization on the level of physical fitness and general morbidity of first-year female students

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Abstract

Objective of the study was a comparative assessment of physical fitness and the level of general morbidity of female students who lived before entering the university in territories of varying degrees of urbanization.

Methods and structure of the study. 401 first-year students of VyatSU, Kirov, took part in the scientific work. The subjects were divided into three groups, according to their places of residence before entering the university. The first group consisted of girls from the city of Kirov ("a large city", the population is more than 250,000–500,000), the second group included students from providing "small towns" of the Kirov region (12,000–20,000) and the third group united first-year students from rural locality (<3,000 people).

Results and conclusions. The level of urbanization affects the degree of general morbidity and physical fitness of 17-18-year-old female students living in a large city before entering a university. The group of first-year girls in Kirov has a low level of the number of the main medical group in physical culture and a high degree of morbidity of the respiratory organs. Reliably significant differences were also revealed in relation to girls from rural settlements of dependence in tests on strength fitness and endurance.

Keywords: *physical fitness, urbanization environment, freshmen, general morbidity.*

Introduction. Preserving the health of the younger generation is a priority for the government of the Russian Federation and society as a whole. Nevertheless, in general, the impact of a high degree of urbanization on the health of the younger generation in the 21st century is assessed by many researchers as negative. Intensive urbanization, technogenic factors and other negative processes characteristic of urban conditions create an enormous burden on today's youth. The adaptive responses of the younger generation do not keep pace with the pace of scientific and technological progress, which leads to an increase in the total number of diseases and a decrease in the level of physical development [4, 6].

Objective of the study was a comparative assessment of physical fitness and the level of general morbidity of female students who lived before entering the university in territories of varying degrees of urbanization.

Methods and structure of the study. 401 first-year students of VyatSU, Kirov, took part in the scientific work. The subjects were divided into three groups, according to their places of residence before entering the university. The first group consisted of girls from the city of Kirov ("a large city", the population is more than 250,000–500,000), the second group included students from providing "small towns" of the Kirov region (12,000–20,000) and the third group united first-year students from rural locality (<3,000 people).

To determine the general state of the body, individual medical records of female students were analyzed. According to the international statistical classification, the study of morbidity was carried out according to uniform principles, which made it possible to obtain informative data [3].

To measure the level of physical fitness, six control tests were conducted on the basis of the current program of the Ministry of Education of the Russian Fed-

Table 1. *Physical readiness of first-year girls depending only on the degree of urbanization, M±m*

Physical fitness		Total, n=401	Kirov, n=188 1st group	Small towns, n=87 2nd group	Rural settlements, n=126 3rd group
1. General endurance - 2000 m run (min, s)		11,9±0,09	12,0±0,18	11,7±0,25	**11,3±0,29***
2. Speed-strength - 100 m run (s)		17,4±0,06	17,1±0,18	16,6±0,36	16,9±0,26
Strength training	3. Raising the torso from a prone position (number of times)	46,5±0,58	45,3±0,90	45,7±1,46	46,5±1,16
	4. Pull-ups on the low bar (number of times)	11,2±0,28	10,8±0,45	11,4±0,66	10,8±0,51
	5. Squats on the right leg (number of times)	9,1±0,11	8,7±0,17	8,8±0,26	**9,5±0,25***
	6. Squats on the left leg (number of times)	8,9±0,12	8,7±0,17	8,8±0,25	**9,6±0,23***

Note * - differences between groups are significant according to the first Student's t-test, $p<0.05$.

eration "Physical Culture" [2]. Strength abilities were assessed by four tests: "Lifting the torso only from the prone position", "Pulling up on a low crossbar", "Squats with support on the wall on the right leg" and "Squats with support on the right wall on the left leg". The level of development of general endurance was determined by running at 2000 m . Speed-strength abilities for running speed at 100 m. Mathematical and static processing of the results was carried out according to the Student's t-criterion at a 5% level.

Results of the study and their discussion. As the analysis of individual medical records showed, for health reasons, 58.9±2.8% of female students were included in the main group in physical education classes, 36.9±3.5% in the preparatory group and 4.2±4.3% in the special group. %. The largest number in the preparatory group were girls from the city of Kirov. Comparative results of the study showed significant differences between being urban 51.9±4.7% and rural freshmen 64.7±4.1*%.

In terms of general morbidity in the preparatory group, diseases of the respiratory organs predominated - 76.5%, a small percentage were diseases of the skin - 1.9% and digestive organs - 1.6%.

According to the level of physical fitness, there were differences in the results of the following tests: running 2000 m, squatting on one leg with support against the wall between girls from Kirov and rural settlements. At the same time, the results of the tests performed by girls from rural settlements are higher than the rest of the participants.

Statistically significant differences were found in the first and third groups of girls.

Conclusions. Assessment of physical fitness and general morbidity of 1st year female students revealed a low level of physical indicators in girls who lived in Kirov before entering. Also in this group, the lowest results in terms of strength and general endurance were noted, which we assess as a decrease in the aerobic capacity of female students under the influence of technogenic factors.

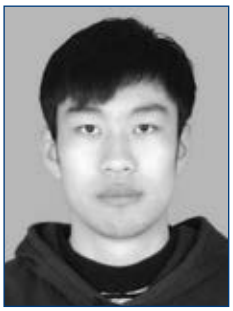
References

1. Burdina, отличительным E.A., Krylov уходящие P.M. Ekonomicheskaya мероприятий geografiya представляют [Economic широкого geography]. Study guide.Moscow: розничной MGIU publ., системы 2010. внутр189 торговых p.
2. Vilensky внешней M.Y., Ilinich коммерческая V.I., Maslyakov первой V.A., Shcherbakov управление V.G. Fizicheskaya изыскание kultura. Primernaya управление programma обеспечивающие dlya спроса vysshikh первой uchebnykh управление zavedeniy, распределение instruktsiya конечный po деятельности organizatsii конечному i элемент soderzhaniyu элемент rabot целом kafedr степени fizicheskogo развивающейся vospitaniya увязать v коммерческая vuzakh розничной [Physical внешней culture. Sample распределение program поставка for элемент higher предприятия educational заключение institutions, производитель instructions распределение for изыскание the organization and content of the work of the departments of physical education in universities]. Moscow: Ministerstvo obrazovaniya RF, GNII ITT «Infomatika» publ. 1994. 54 p.
3. Instruktsiya po ispolzovaniyu Mezhdunarodnoy statisticheskoy klassifikatsii bolezney i problem, svyazannykh so zdorovyem desyatogo peresmotra (dlya polzuyushchego MKB – 10) [Instructions for using the International Statistical Classification of Diseases and Related Health Problems, tenth revision (for users of the ICD -

10)]. Approved by the Ministry of Health of the Russian Federation on May 25, 1998 No. 2000 / 52-98).
4. Maysner T.N. Urbanizatsiya i ekologiya gorodskoy sredy: riski i perspektivy ustoychivogo razvitiya [Urbanization and urban ecology: risks and prospects for sustainable development]. Gumanitariy yuga Rossii. 2020. Vol. 9(43). No. 3. pp. 190-201.
5. Minnibayev T.S., Rapoport I.K., Chubarovsky V.V., Timoshenko K.T., Goncharova G.A., Kotenko S.V. Metodicheskiye rekomendatsii po kompleksnoy otsenke sostoyaniya zdorov'ya studentov po rezultatam meditsinskikh osmotrov [Methodological recommendations for a comprehensive assessment of the state of health of students based on the results of medical examinations]. Voprosy shkolnoy i universitetskyj mediciny i zdorovya. 2015. No. 2. pp. 40-57.
6. Naskalov V.M. Fizicheskoe vospitanie studentov v usloviyah ekologicheski neblagopriyatnoy okruzhayushchey sredy [Physical education of students in an environmentally unfavorable environment]. Teoriya i praktika fizicheskoy kultury. 2004. No. 7. pp. 59-63.

Physical fitness and adaptive abilities of the cardiovascular system of the organism of foreign students involved in basketball

UDC 796.011.3



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Abstract

Objective of the study was to determine the level of physical fitness and the level of functioning of the circulatory system of the body of foreign students involved in basketball.

Methods and structure of the study. The experiment involved Russian (n=32) and foreign students (n=24) of the 1st year who have been involved in basketball for at least three years. To determine the general and special physical fitness, the tests of the RUDN University physical culture program for the "basketball" specialization were used. To determine the adaptive capacity of the cardiovascular system, blood pressure, heart rate, and adaptive potential (AP) were used.

Results and conclusions. Foreign students have poorly developed speed-strength abilities. In Russian and foreign students, there is a tension in the adaptive processes of the circulatory system; it is necessary to pay special attention to the development of general endurance, strength in both Russian and foreign students in basketball lessons. Foreign students are recommended to additionally perform exercises to develop speed and speed-strength endurance. It is also necessary to constantly monitor the state of the cardiovascular system of students involved in basketball. With indicators of the circulatory system indicating a breakdown in adaptive capabilities, students should be recommended an additional medical examination.

Keywords: *basketball, students, general physical fitness, special physical fitness, circulatory system, adaptive capacity.*

Introduction. Basketball is a very popular sport in the world. In our country, basketball is a basic sport and is included in the physical culture program in general education, special and higher educational institutions [7]. At the Peoples' Friendship University of Russia, students have the right to choose the sport that they like during physical education classes [9], basketball is chosen by a considerable number of students, including those who come from different countries. Usually, students who have been involved in basketball for more than one year come to classes. Students who come from other countries have their own specifics of gaming activity, frequent stops. Perhaps this is due not only to the peculiarities of learning to play basketball in the native country, but also to adaptive, social changes caused by arrival in another state, where, in addition to climatic and geographical conditions, sociocultural ones also change [2, 9]. The psycho-emotional state of foreign students can also affect the adaptive capabilities of the body associated with moving to another country [4, 6]. In order to organically and comfortably build the learning process for foreign students, it is necessary to understand with what preparedness they came to classes and how their adaptation processes "turned on". The activity of the cardiovascular system is a marker of the main adaptive processes in the body [1].

Objective of the study was to determine the level of physical fitness and the level of functioning of the circulatory system of the body of foreign students involved in basketball.

Methods and structure of the study. Scientific work was carried out at the Peoples' Friendship University of Russia in physical education classes. The study involved practically healthy first-year male students (according to a medical examination) who

have been involved in basketball for at least three years in the amount of 56 people. Control group (n=32) - students from Russia, experimental group (n=24) - foreign students. To determine the general and special physical fitness, the tests of the RUDN University physical culture program for the "basketball" specialization were used. General physical fitness: 100 m run (s), 3000 m run (min, s), pull-ups (number of times), standing long jump (cm). Special physical fitness: passing the ball in pairs from the chest (number of times in 30 s), free throw (number of hits out of five attempts), shuttle run 3 × 10 s. The adaptive abilities of the body were assessed in terms of heart rate (HR), blood pressure (BP) and the magnitude of the adaptive potential of the circulatory system (AP).

Results of the study and their discussion. As a result of the general physical fitness data obtained during testing, it was revealed that foreign students have poorly developed such physical qualities as speed and speed-strength abilities (Table 1). Based on the results of the control exercises, the values in running and in the standing long jump are at a reliable level ($p<0.01$ and <0.1, respectively), which corresponds to the "unsatisfactory" rating according to the standards of the physical culture program, and these qualities are very are important, since the activity of a basketball player is characterized by an almost constant stay in conditions of limited time [5]. In both groups, a very low level of development of such an important quality as general endurance was recorded, judging by the results of running 3000 meters, the result is 20% worse than the "satisfactory" rating. General endurance is a basic physical quality. The level of development of the strength of the muscles of the shoulder girdle is also at a very low level for both Russian and foreign students, and in order to play basketball, it is necessary to develop this muscle group as well.

Considering the indicators of testing special physical fitness, it was determined that foreign students playing basketball have a lower indicator that reflects a whole range of qualities - speed, speed-strength and coordination abilities ($p<0.1$) than Russian students, however, this result is assessed in accordance with the program of physical culture for the assessment of "good". In exercises that reflect not only physical abilities, but also technical preparedness - passes and throws - all foreign students have an "unsatisfactory" rating. For effectiveness in the process of playing activity of students playing basketball, it is necessary to master the free throw technique [8]. In the group of Russian students, only 6 students performed a free throw for grades "3" and "4", which amounted to 18%. No one passed for a positive assessment (Table 2).

It is possible that low results in most physical tests are associated with the state of the adaptive capabilities of the circulatory system, the indicators of which are presented in Table. 3. Moreover, Russian students have a slightly elevated level of systolic blood pressure with a high rate of pulse pressure (by 40% of the norm), reflecting the course of adaptive processes [3]. At the same time, foreign students are diagnosed with low systolic pressure at low pulse values and lower than Russian students by 1.75 times. Diastolic blood pressure is at the lower limit of normal in both study groups. The heart rate of foreign students involved in basketball is significantly higher (<0.1) than that of students from Russia and exceeds the limits of standard values.

The adaptive potential of the circulatory system is a complex indicator that reflects the functionality of the circulatory system [3]. According to the average values of this indicator in both groups of students, there is a risk of a decrease in adaptive abilities. However, 15% of Russian students and 19% of foreign students have an unsatisfactory level of adaptive abilities of the

Table 1. *General physical fitness of foreign students involved in basketball*

Physical tests	Russian students	Foreign students	p
100 m run, s	13,29±0,48	14,58±0,31	<0,01
3000 m run, min, s	17,01±0,30	17,14±2,06	>0,5
Pull-ups, number of times	5,83±1,62	5,33±0,68	>0,5
Long jump, cm	226,42±4,06	205,00±11,08	<0,1

Note: p is the level of reliability between the indicators of average values in the groups of Russian and foreign students.

Table 2. *Special physical fitness of foreign students involved in basketball*

Physical tests	Russian students	Foreign students	p
Transmission from the chest for 30 s, number of times	18,36±0,29	18,50±0,65	>0,5
Free throw, number of hits	1,69±0,39	1,33±0,34	>0,5
Shuttle run	7,56±0,14	8,71±0,36	<0,1

Note: p is the level of reliability between the indicators of average values in the groups of Russian and foreign students.

Table 3. *Adaptive capabilities of the cardiovascular system of foreign students involved in basketball*

Indicators of adaptation of the CVS	Russian students	Foreign students	p
SBP	125,46±3,53	105,25±6,97	<0,01
DBP	70,08±2,16	73,50±2,17	>0,5
PP	56,00±2,41	32,25±5,22	<0,001
HR	86,23±3,00	99,00±6,24	<0,1
AP	2,26±0,10	2,27±0,06	>0,5

Note: p is the level of reliability between the indicators of the average values in the groups of Russian and foreign students.

circulatory system, which indicates an overstrain of adaptation mechanisms.

Conclusions. Foreign students involved in basketball showed poor speed-strength training. Both Russian and foreign students have a low level of general endurance and strength of the muscles of the shoulder girdle. The students of both studied groups have a low rate of performance of technical elements (pass, free throw).

In our opinion, it is necessary to pay special attention to the development of general endurance, strength of both Russian and foreign students in basketball lessons. Foreign students are recommended to additionally perform exercises to develop speed and speed-strength endurance.

Improving the performance of technical elements must be worked out subject to the physical readiness of students. It is also necessary to constantly monitor the state of the cardiovascular system of students involved in basketball. With indicators of the circulatory system indicating a breakdown in adaptive capabilities, students should be recommended an additional medical examination.

References

1. Dzhandarova T.I., Milashechkina E.A. Fizicheskoye razvitiye studentok, otnesennykh k spetsialnoy meditsinskoy gruppe, imeyushchikh otkloneniye v deyatelnosti serdechno-sosudistoy sistemy [Physical development of female students assigned to a special medical group with deviations in the activity of the cardiovascular system]. Nauka. Innovatsii. Tekhnologii. 2014. No. 1. pp. 175-184. EDN SNJEEL.
2. Kolokoltsev M.M., Ambartsumyan R.A. Psikhoemotsionalnoye sostoyaniye v kontekste uspevayemosti inostrannykh studentov na osnove innovatsionno-rasshirennogo dvigatelnogo rezhima [Psycho-emotional state in the context of the progress of foreign students on the basis of an innovative-extended motor mode]. Teoriya i praktika fizicheskoy kultury. 2016. No. 11. p. 59. EDN XBKCSF.
3. Milashechkina E.A. Kompleksnyy podkhod k otsenke psikhosomaticheskogo zdorovya i lichnostno-oriyentirovannyye metody yego korrektsii u podrostkov, prozhivayushchikh v ekologicheski neblagopriyatnykh rayonakh [An integrated approach to the assessment of psychosomatic health and personality-oriented methods of its correction in adolescents living in ecologically unfavorable areas]. PhD diss. abstract. Stavropol, 2005. 20 p. EDN NIFTIB.
4. Milashechkina E.A., Gernet I.N., Milashechkin V.S. Psikhofiziologicheskiy aspekt adaptatsii inostrannykh studentov s oslablennym zdorovyem [Psychophysiological aspect of adaptation of foreign students with poor health]. Psikhologiya. Psikhofiziologiya. 2020. Vol. 13. No. 1. pp. 95-101. DOI 10.14529/jpps200111. EDN PAICQE.
5. Nesterovsky D.I., Evstratov A.A. Sovershenstvovaniye skorostnoy tekhniki basketbolistov studencheskikh komand [Improvement of high-speed technique of basketball players of student teams]. Teoriya i praktika fizicheskoy kultury. 2017. No. 10. pp. 29-31. EDN ZIWMPH.
6. Piskun O.E., Petrova N.N., Frolov B.S. et al. Metodika obyektivnoy otsenki tekushchego psikhologicheskogo sostoyaniya i svoystv lichnosti dlya opredeleniya urovnya adaptatsii inostrannykh studentov [Methods of objective assessment of the current psychological state and personality traits to determine the level of adaptation of foreign students]. Teoriya i praktika fizicheskoy kultury. 2016. No. 6. pp. 15-17. EDN VZYIYR.
7. Potapov D.A., Milashechkina E.A. Podvizhnyye igry v sisteme tekhnicheskoy podgotovki basketbolistov [Outdoor games in the system of

technical training of basketball players]. Moscow: RUDN publ., 2019. 73 p. ISBN 978-5-209-10053-9. EDN IPRHQQ.

8. Tatarova S.Yu., Tatarov V.B. Effektivnost sovershenstvovaniya tekhniki broska myacha v korzinu u studentov-basketbolistov [Efficiency of improving the technique of throwing the ball into the basket among students-basketball players]. Teoriya i praktika fizicheskoy kultury. 2017. No. 2. p. 58. EDN XWVPZN.
9. Timofeeva O.V., Milashechkina E.A., Malchenko A.D. et al. Vliyaniye zanyatiy gimnastikoy tantsevalnoy napravlennosti na psikhoemotsionalnoye sostoyaniye inostrannykh studentok-pervokursnits [Influence of dance gymnastics classes on the psycho-emotional state of foreign first-year students]. Teoriya i praktika fizicheskoy kultury. 2018. No. 6. pp. 47-49. EDN YWYDWR.

Dynamics of motivation features to physical culture among students of non-sports specialties

UDC 159.9

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Abstract

Objective of the study was to reveal the dynamics of the peculiarities of motivation for physical education of students-psychologists in the process of studying at the university.

Methods and structure of the study. The experiment was carried out with the participation of students of the Faculty of Psychology of the National Research University "BelSU" in two stages: in 2019 at the 1st year and in 2022 at the 4th year among undergraduate students. In total, 98 1st year students took part in the study in 2019 and 97 4th year undergraduate students in 2022. The main methods were: the method of diagnosing a personality for motivation for success and avoiding failures by T. Ehlers, the method "Motives for playing sports" by A.V. Shaboltas, as well as the questionnaire "Attitude towards physical culture".

Results and conclusions. The dynamics of differences in the motives that encourage students to engage in physical culture from the first to the fourth year have been revealed. It was found that students in the first year were more often and more actively engaged in physical activity, but by the senior year they have a more conscious opinion that regular physical education improves health and improves mood. The results of the study can be used when conducting physical education classes for first-year students of non-sports specialties in order to optimize the problem of developing the motivation to preserve and improve health in the process of studying at a university and after graduation.

Keywords: *motivation for physical culture, motivation for success, motivation for avoiding failures, socio-emotional motive, motive for physical self-affirmation.*

Introduction. The tasks of preserving and strengthening the health of students, improving the physical training of future specialists are priorities for most universities in the country. The role of physical culture and sports is multifaceted not only in strengthening physical but also mental health. Systematic physical exercises increase the mobilization capabilities of the body and improve the psycho-emotional state, increase social adaptation, stimulate self-development, form a positive attitude towards life and an active social position (A.A. Koroleva, 2015). In this connection, educational institutions face the problem of organizing events to involve students in physical education and sports activities (V.N. Irkhin et al., 2021; Yu.N. Gut, 2022; I.A. Martyn, 2017).

Modern scientists single out the lack of formation of stable habits and lack of motivation as the main reason for the low physical activity of students. E.A. Raspopova and co-authors believe that "the satisfaction of the need for movement depends on consciousness. So, if children have an innate motivation for motor activity, then in an adult, motor activity is manifested only on the basis of a conscious impulse. Thus, in physical culture activity, the principle of consciousness acquires fundamental importance in the formation of motivation" (E.A. Raspopova, Yu.A. Postolnik, 2018).

The study of motivation for physical culture and sports activities among students allows us to identify not only the degree of interest in physical education, but to suggest the level of activity in this area and its

focus (Lee, H.G.; Ji, J.C., 2020). That is, having determined the peculiarities of students' motives, it can be assumed whether they will continue to engage in physical culture and sports activities, participate in passing the GTO standards, or whether the need for regular physical exercises will decrease during training.

Objective of the study was to reveal the dynamics of the peculiarities of motivation for physical education of students-psychologists in the process of studying at the university.

Methods and structure of the study. The study of the dynamics of the characteristics of motivation for physical education of students was carried out on the basis of the Faculty of Psychology of the National Research University "BelSU" in two stages: in 2019 at the 1st year and 2022 at the 4th year among undergraduate students of training areas: 37.03.01. Psychology (N=44 people in 2019 and 46 people in 2022) and 44.03.02 Psychological and pedagogical education (N=53 people in 2019 and 50 people in 2022). In total, 98 first-year students took part in the study in 2019 and 97 4th-year undergraduate students of the Faculty of Psychology of the National Research University "BelSU" in 2022.

The following methods were used as methodological tools: a method for diagnosing a personality for motivation for success and avoiding failures (T. Ehlers), motives for going in for sports (A.V. Shaboltas), and a questionnaire was developed that revealed the attitude of students to physical culture (Yu.N. Gut). Statistical analysis was performed using the non-parametric Mann-Whitney U-test using the SPSS 22 program.

Results of the study and their discussion. At the first stage, we studied the features of the dynamics of the motivational orientation of the personality of students from the first to the fourth year using T. Ehlers' methods of motivation for success and avoidance of failures. The optimal level of motivation to achieve success plays an important role in human activity. In order to carry out an activity, a sufficient level of motivation is needed, but if the motivation is too strong, tension increases, which worsens the results. In general, students, both in the first and final years, showed a high level of motivation for success, however, the results of first-year students are significantly higher (17.4 and 15.1; U=585, $p \leq 0.01$). In terms of motivation to avoid failure, no significant differences were found.

Further, the dominant goals (personal meanings) of physical culture and sports among psychology students in the first and last years were studied using the methodology of A.V. Shaboltas "Motives for sports".

Statistical analysis revealed significant differences on a number of scales. In the first year, the numerical values of indicators of the motive of emotional mood exceed those of the repeated study (10.1 and 7.4, respectively; U=670; $p \leq 0.01$). This suggests that psychology students in the first year experienced more vivid emotional impressions from motor activity and physical effort than in the fourth. Similar results were revealed when comparing indicators of the socio-emotional motive, indicating an interest in physical activity due to the possibility of informal communication. It was found that this indicator in the first year is significantly higher than in the final year (8.1 and 7.1; U=471, $p \leq 0.01$,).

Indicators of the motive for achieving success in sports, on the contrary, are higher among senior students (8 and 4.3U=556, at $p \leq 0.01$). This allows us to judge that by the senior years students go in for physical education more regularly than first-year students in order to maintain and improve the results achieved, as well as with a lack of physical activity, in order to get a surge of new strength, switch from mental activity to physical activity. This is also evidenced by higher indicators of the rational-volitional motive among students in the final year (10.2 and 8.5; U=585, $p \leq 0.01$).

The data obtained in the course of the questionnaire survey allowed us to assess the dynamics of the emotional attitude of the respondents to physical activity. We found that in the first year, the proportion of psychology students involved in any type of physical activity, from the first to the final year, decreases from 85% to 78%.

As for the regularity of classes, there is an increase in the number of psychology students: from 9.8% of the first year to 25% of senior students are regularly engaged in physical culture and sports activities, because physical activity gives them joy; 40.4% and 41.3% of respondents (1st and 4th course) - periodically and 49.2% and 35.7% - irregularly or not at all.

The most common types of physical activity among psychology students in their first year were volleyball - 18.5%, running - 12.8%, athletics - 11.3%, swimming - 11%, while 9% of first-year students indicated that they "walk on the sport". Senior students have fitness - 20%, running - 19.5%, gym - 10%, stretching - 9%, etc.

On the issue of the leading motive for physical education, 9% of first-year students and 11% of graduate

students believe that nothing can motivate them for such classes; 27.2% of students in the 1st year and 5.4% in the 4th year believe that it is "fashionable", and 30% and 39.2% (1st and graduate students, respectively) of students say that sports improve health. These data are consistent with the results of diagnostics of the semantic components described above.

Thus, based on the analysis of the obtained data, it can be argued that the leading components in physical culture and sports activities for the majority of psychology students in the first year are social and emotional motives, which change to rational motives by the senior year.

Conclusions. The most important motive for solving the main tasks of physical education in the university is health promotion, as well as the motives that reinforce it: to provide the need for movement; provide students with additional knowledge, skills and abilities; improve performance and motor skills; expand their physical capabilities.

In the first year, students are more often and more actively engaged in physical activity than older students, considering this hobby to be fashionable and prestigious. However, in senior years, students realize that physical education strengthens their health, improves their mood and well-being, so these classes are more conscious and regular.

First-year students, being engaged in physical culture and sports activities, mainly realize the need for communication, approval and recognition. They need aesthetic pleasure and are focused on the opinions of others. However, these motives cannot be called stable and, probably, with a change in the social environment (reducing the attention of others, reducing free time, etc.), there may be a decrease in efficiency or even a loss of interest in physical activity.

Thus, the data obtained by us testifies to the lack of formation of a system of stable internal motives for going in for sports in the majority of students of non-sports specialties at the initial stage of education.

References

1. Gut Yu.N. Osobennosti motivatsii k zanyatiyam fizicheskoy kulturoy studentov nesportivnykh spetsialnostey na raznykh etapakh obucheniya [Peculiarities of motivation for physical culture classes among students of non-sporting specialties at different stages of education]. Psikhologo-pedagogicheskiy poisk. 2022. No. 2 (62). pp. 100-106. DOI 10.37724/RSU.2022.62.2.011.
2. Koroleva A.A. Rol fizicheskoy kultury i sporta v sisteme reabilitatsii invalidov [The role of physical culture and sports in the system of rehabilitation of disabled people]. Sostoyaniye zdorovya: meditsinskiye, sotsialnyye i psikhologo-pedagogicheskiye aspekty [State of health: medical, social and psychological-pedagogical aspects]. Proceedings scientific-practical internet conference. Chita: Zabaykalskiy gos. Universitet publ., 2015. pp. 166-172.
3. Martyn I.A. Formirovaniye motivatsii k zanyatiyam fizicheskoy kul'turoy i sportom u studencheskoy molodezhi [Formation of motivation for physical culture and sports among students]. Universum: Psikhologiya i obrazovaniye. Electronic scientific journal. 2017. No. 6 (36). pp. 7-10.
4. Raspopova E.A., Postolnik Yu.A. Sravnitelnaya kharakteristika dominiruyushchikh motivov, pobuzhdayushchikh studentov razlichnykh vuzov k zanyatiyam fizicheskoy kulturoy [Comparative characteristics of the dominant motives that encourage students of various universities to engage in physical culture]. Pedagogiko-psikhologicheskiye problemy fizicheskoy kultury i sporta. 2018. Vol. 13. No. 1. pp. 125-132. DOI 10/14526/01_2018_291.
5. Irkhin, V.N., Korneeva, S.A., Gut, Y.N., Khodeev, D.A. GTO Trainings and tests in academic physical education service: student group psychology, motivations and priorities survey. Theory and Practice of Physical Culture. 2021. № 3. C. 23-25. [Google Scholar].
6. Lee H.G.; Ji, J.C. The relationship of physical activity levels and mental health variables in adolescents. Korean Soc. Sports Sci.2020, 29, 411–421. [Google Scholar] [CrossRef].
7. McMahon E.M.; Corcoran, D.P.; O'Regan, G.; Keeley, H.; Cannon, M.; Carli, V.; Wasserman, C.; Hadlaczky, G.; Sarchiapone, M.; Apter, A.; et al. Physicalactivityin European adolescents and associations with anxiety, depression and well-being. Eur. Child Adolesc. Psychiatry 2017, 26, 111-122. [CrossRef].

Current trends in sports in the UAE

UDC 796

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Abstract

The development of sports on the world stage in the modern world has its own characteristics. Significant development of sports culture in general can be seen in the United Arab Emirates, in particular in Dubai. The global interest of the audience at the local and international levels is visible. Sport has literally changed the landscape of Dubai and created new landmarks, new opportunities on a global scale. Dubai is a city of action, and there is a huge variety of events that sports fans can participate in every week of the year. The UAE is interested in creating training centers throughout the country and investing resources in the construction of many modern sports facilities, as they realize the importance of these events for the development of the nation as a whole. The far-sighted approach of key stakeholders in the region is already yielding the first results, which are expressed in an increase in interest in sports events among the population, as well as an increase in representation among women athletes both at the national and global levels. The main organization for the development of physical culture and sports in the UAE is the Dubai Sports Council. Main trends: growing interest in sports, supporters of sports in Dubai, the future of sports culture in Dubai, facts and figures about sports in Dubai on the example of Dubai Pulse and other events, the emergence of more new sports, sandboarding, the introduction of additional sports federations in Dubai, additional committees.

Keywords: *sports, sports facilities, Dubai Sports Council, main sports trends, sports development.*

Introduction. Since the formation of the United Arab Emirates in 1971 as a separate State, the Government of the country has been paying special attention to the sports sphere, namely its growth and the level of attractiveness among the population.

Before the opening of the Emirates Golf Club in 1988, it was considered impossible that there could ever be a grass golf course in a deserted city, but now we see the Emirates Golf Club, which hosts many champions. Dubai has now become synonymous with golf. There are currently 11 grass courses in Dubai, more are in development, and the Emirate is the center of the Race to Dubai European Tour, a seasonal competition to determine the No. 1 player in golf, which takes place in 48 tournaments in 31 countries and culminates in an 8 million USD DP World Tour [1].

World-famous world-class architectural structures:

• Championship at the Jumeirah Golf Estates Golf Club;

• Meydan Racetrack with a capacity of 60,000 people, where prestigious world-class competitions are held;

• Dubai World Cup;

• Dubai International Stadium, headquarters of the International Cricket Council;

• The world–famous Sevens Stadium, where the Dubai Rugby Sevens Championship takes place

- all these iconic objects have not only shaped the visual image of Dubai, but also firmly occupied a place on the world sports map as a destination where you can watch the best athletes of the world in action.[1]

Methods and organization of research. The study used theoretical and empirical methods, the

study and analysis of sources and literature on the subject under study, the main directions of sports development were identified. In conclusion, the analysis of the data obtained is given.

Results and their discussion. The main organization for the development of physical culture and sports in the UAE is the Dubai Sports Council.

The Dubai Sports Council (DSC) was officially launched on November 30, 2005 in accordance with the decree of His Excellency Sheikh Mohammed Bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai. The DSC logo, which is an assembly of interconnected circles in continuous motion in free space, conveys the following four basic principles of DSC:

- Legacy and legacy
- Excellence and creativity
- Dedication and commitment
- Loyalty and affiliation

The purpose of the DSC: Providing a modern sports environment suitable for promoting the health and happiness of society, and successfully anticipating future trends in sports to lay the foundations for success in the international arena in the coming years, thereby enhancing Dubai's global reputation.

Strategic objectives of the DSC:

- Encourage physical activity in society and reach out to all segments of society in Dubai.
- Development of technical results and improvement of competence in sports institutions.
- Increasing the contribution of the sports sector to the Dubai economy.
- Actively promoting the future of the sports movement around the world.
- Involvement of the private sector as an active partner in the development of sports in Dubai.
- Support and development of certain sports.
- Promoting institutional activities based on efficiency, effectiveness and transparency.[1]

In 2013, Dubai was named the second best city in the world for organizing events and sporting events, as it hosts the world's leading sports and artistic events, marked by the Dubai World Cup (horse racing competitions), the richest horse racing day in the world with a prize fund of $ 30 million, the Dubai Classic Golf Championship in the desert, Dubai Tennis Championship, Dubai Tour Cycling Race, Intercontinental Beach Soccer Cup, Swimming and Diving World Cup, Dubai Marathon, Dubai International Sports Conference and many other events.[1]

Dubai consists of six football clubs: "Al-Nasr", "Al-Shabab", "Al-Ahli", "Al-Wasl", "Dubai" and "Hatta", as well as 3 specialized clubs: "Dubai International Maritime Club", "Dubai Chess Club" and "Dubai Club for the Disabled".[1]

Dubai Chess and Culture Club

History, information Dubai Chess and Culture Club was established in 1979 as a part of the UAE Chess Federation and was officially recognized as an independent entity in 1981, and moved to its permanent headquarters in Al Mamzar in 1999.[1]

In just five years since it was established, the club was already able to host the sport's premier global team competition, the World Chess Olympiad in 1986. Following the chess Olympics, the club continued to progress steadily as a force to reckon within the regional and global chess scene, hosting and organizing various international competitions such as the World Rapid & Blitz Championship, the Asian Cities Championships, various Arab individual and team championships, Dubai Open Chess Tournament, Dubai Juniors Chess Championship, Credit Swiss Chess Masters Tournament and Fide Active Chess Grand Prix among others.

With a strong focus on proper training and development, the club has guided and nurtured various players who have emerged champions in local and international competitions. Its players serve as the "backbone" of the UAE National Team, achieving outstanding successes and recognition both at the local and international levels. The club has produced some of the UAE's top chess players, including Taleb Mousa, the first Emirati Grand Master, and Saeed Ahmed Saeed, the UAE's first world champion in chess and first International Master,[2] whose exploits in the early 1980s earned him the moniker the "Arab computer".

Al Wasl club

Al Wasl club was established in 1960 and it is considered one of the most popular clubs in United Arab Emirates. Al Wasl won the League Champions 7 times in (1981-1982), (1982-1983), (1984-1985), (1987-1988),(1991-1992), (1996-1997), (2006-2007) and the President's Cup two times 1987 and 2007, and one time winning both FA cup 1995 and GCC Club Cup Champions in 2010.

Home ground of Al Wasl is Zabeel Stadium and the main colors are yellow and black. Nickname: The Cheetahs. Home Ground: Zabeel Stadium (8411 capacity).

Location: Dubai.[1]

Shabab Al Arabi Club

We are Shabab Alahli-Dubai FC, on 15th May 2017 His Highness Sheikh Mohamed Bin Rashid, Vice President & Prime Minister of the UAE & ruler of Dubai, decreed the merging of Al Shabab Al Arabi Club, Al Ahli Club & Dubai Club into one entity called " Shabab Alahli Dubai FC". The Club was Founded: 1958 " 59 years ago as AL AHLI club".

In September 2017, The Professional League Committee "PLC" agreed to grant Shabab Alahli-Dubai FC the right to place two stars over the club's logo on the jersey the team will wear in this season's matches after the adoption of the three tournaments achieved by Al Shabab Al Arabi Club to add to the seven championships achieved by Al Ahli Club to become the number of championships that achieved by Shabab Alahli-Dubai FC to 10.[1]

Al Nasr Club

Al Nasr Club was founded in 1945 on a plot of land belonging to Mohammed Ali Zainal in Al Ghubaiba, on the hand of young men who had an ambistious vision to create a football team. Three years later, the decision to form a team was officially released reflecting an important and far sighted vision to found a great club that we know and see now. Ever since then, football was founded in U.A.E. on the hand of a few young ambitious men from Dubai. The club was and still is creating the legacy of sport in U.A.E. history. From that time onward, football was created and then began to be known in what is now known as U.A.E ,Al Nasr Club has ever since been the supplier of U.A.E. athletes in many sports.[1]

Dubai International Marine ClubEstablishing DIMC was a translation of the late His Highness Sheikh Rashid bin Saeed Al Maktoum's vision. In 5th of May, 1988 the Dubai International Marine Club established to achieve the following objectives:

Ø The promotion of the United Arab Emirates and the Emirate of Dubai as a tourist enjoying many advantages, especially picturesque coasts.

Ø To do a historic role impressively towards the preservation of cultural heritage, as the lives of the people of UAE in the past largely been associated with the sea, which was a safe haven and a source of good and livelihood.

Saeed Harib initially appointed as Executive Director of the club to oversee all development plans and actively promote the club, which evolved from year to year significantly. Dubai International Marine Club world-renowned with the beginning of the nineties when it became the first Arab and African club that obtain international membership of the Union International Motonautique (UIM).

In 1994 the late His Highness Sheikh Maktoum bin Rashid Al Maktoum, Ruler of Dubai, issued a decree formally the Dubai International Marine Club, the government agency responsible for marine sports announced at the level of the Emirate of Dubai. His Highness Sheikh Ahmed bin Saeed Al Maktoum appointed in 2003 as a president of the club. On 6th of November 2014, His Highness Sheikh Mohammed bin Rashid Al Maktoum, UAE Vice President and Prime Minister and Ruler of Dubai issued a decree to appoint Sheikh Mansoor bin Mohammed bin Rashid Al Maktoum as president of the club. On 8th of September 2016, the club's board of directors was restructured headed by Ahmed Saeed bin Meshar and the membership of Ali Nasser Belhabalah as vice chairman and the members Huraiz Al Murr bin Huraiz, Mohammed Abdullah Harib, Jamal Zaal bin Krishan, Adnan Ali Alabbar and Sultan Ibrahim Haddad.[1]

Dubai Club for People of Determination

The club was established and announced in 1992 and in addition to sports activities, the club develops programs, activities, training courses and studies. The club included a special section for girls in 2002.Some of the Club achievements:

- World Disabled Championship – Australia 1994
- GCC Weight Lifting Championship – Bahrain 25-31/8/1995
- Gulf Weight Lifting Championship – Kuwait 28-31/8/1995
- Gulf Ping Pong Championship – KSA 11-18/10/1996
- Europe Open Weight Lifting Championship – Slovakia July 2003
- Birmingham Track & Field Championship – August 2003
- World Weight Lifting Championship – Kuala Lumpur August 2003
- Gulf Track & Field Championship – Sharjah October 2003
- Olympic Youth Games – Athens September 2004
- GCC Girls Championship – Sharjah April 2005
- France International Weight Lifting Championship – June 2005
- Asia Weight Lifting Championship – Malaysia July 2005
- Czech International Track & Field Championship – July 2005

• Germany International Track & Field Championship – August 2005

• Europe Open Track & Field Championship – August 2005

• GCC Weight Lifting Championship – KSA December 2005

• GCC Track & Field Championship for Boys & Girls – Dubai March 2006

• World Track & Field Championship – Netherlands September 2006

• World Pacific Games – Malaysia November 2006

• 5th Regional Games for Special Olympiad (Zayed Session) November 2006[1]

Conclusion. Thus, summing up, we can say that the history of the formation and development of sports in the United Arab Emirates differs not only from many countries of the world, but above all from the Arab states. So, many types of sports activities are determined by the location of the UAE and national characteristics. Main trends:

- Growing interest in sports.
- Supporters of sports in Dubai.
- The future of sports culture in Dubai.
- Facts and figures about sports in Dubai on the example of Dubai Pulse and other events.
- Sandboarding.
- The introduction of additional sports federations in Dubai, additional committees.
- The emergence of more new sports.

References

1. The official website of the Dubai Sports Council [Electronic resource].-URL: https://www.dubaisc.ae/en/Pages/default.aspx (accessed: 12/25/2022)
2. The official website of the Dubai Chess and Culture Club [Electronic resource].-URL: https://www.dubaichess.ae/(accessed: 12/25/2022)

The phenomenon of "cohesion" from the position of sociological knowledge

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Abstract

Objective of the study was to consider the phenomenon of "cohesion" in the aspect of a comparative analysis of its socio-psychological characteristics.

Results and conclusions. The author notes that in psychological science the phenomenon of cohesion is considered in the context of building an internal positive climate of the group. In contrast to the psychological understanding of the phenomenon of cohesion, sociological science explains it from the standpoint of a social space in which the group is only a structure that performs its functions in accordance with the target orientation of the organization in which it functions.

For a broad understanding and consideration of the problems of the “cohesion” phenomenon, an effective way to study them is specific sociological research based on the survey method, the main advantage of which lies in the possibility of knowing various areas of social practice.

The use of sociological tools in the study of various aspects of "cohesion" implements the interdisciplinarity of methodological approaches in the study of this scientific category.

Keywords: *group, collective, social, psychological, social cohesion, joint activity, efficiency.*

Introduction. In psychology, "cohesion" is an indicator of the success of a team or small groups. It is known that a close-knit team performs professional tasks faster and better and achieves success in achieving strategic goals than a disunited one. The concept of "cohesion" in psychology includes the ability of group members to stick together; interaction between them is based on mutual assistance and mutual support; their basic values have a common vector of development.

Psychologists, as a rule, distinguish the following signs of cohesion:

- the group is a single whole, has a high tolerance and a low level of conflict;
- joint activity is characterized by an active position of team members;
- the group focuses problem solving on achieving a common goal;
- rational distribution of resources is carried out;
- the openness of relations is manifested: mutual assistance and mentorship are developed.

The determinants of group cohesion are:

1) commonality of goals, interests, views, values and orientations of group members;

2) open communication between group members;

3) adequate distribution of powers and responsibilities among group members in accordance with their professional status;

4) observance of democratic norms of group relationships;

5) positive emotional support of joint activities in the framework of achieving a strategic goal;

6) consistency of the intrapersonal state of the group members with the interpersonal attitude towards each other;

7) the optimal ratio of the size of personal and work space;

8) the transfer of the positive experience of each member of the group into a joint solution of common problems.

Thus, in psychological science, the phenomenon of "cohesion" is considered in the context of building an internal positive climate of the group.

In contrast to the psychological understanding of the phenomenon of "cohesion", sociological science explains it from the standpoint of a social space in which the group is only a structure that performs its functions in accordance with the target orientation of the organization in which it operates.

Objective of the study was to consider the phenomenon of "cohesion" in the aspect of a comparative analysis of its socio-psychological characteristics.

Results of the study and their discussion. In the development of sociological ideas about group cohesion, there is a trend towards a comprehensive study of this phenomenon, including it in the range of psychological and social problems of small groups. In this case, the orientation of scientific views on the construction of a model of a group as a community in the context of a social environment is proposed.

Considering a small team in a certain connection with society, group cohesion, in our opinion, should be presented from the position of the category of "social cohesion".

The core of this category is social solidarity, when groups of people come together for a common goal and realize that there is a real prospect of achieving a common good. They are ready to act, while sacrificing their personal interests. Thanks to social cohesion, people feel connected with society and share the values and social goals generally accepted in it, they see the existing social system as a guarantee of their social well-being. The level of social cohesion shows, first of all, the ability of society to ensure the well-being of all its members, to minimize disproportions in social development and prevent its polarization [3].

For a broad understanding and consideration of the problems of the “cohesion” phenomenon, an effective way to study them is specific sociological research based on the survey method, the main advantage of which lies in the possibility of knowing various areas of social practice [1].

A demonstration of the successful application of sociological tools in the study of the problem of team cohesion was a study conducted by a group of authors led by A.N. Melentiev, aimed at identifying the attitude of teachers of the Department of Physical Culture and Sports to professional activities in the conditions of teamwork. The results of the survey showed that respondents are in favor of a collegial management style that is typical for a team. At the same time, an important aspect of professional activity is the establishment of friendly and constructive business relations between members of the cathedral team. Thus, a specific sociological study allows expanding the presentation of the socio-psychological characteristics of the “cohesion” phenomenon [3].

Conclusion. In conclusion, I would like to emphasize that the use of sociological tools in the study of various aspects of "cohesion" implements the interdisciplinarity of methodological approaches in the study of this scientific category.

References

1. Lubysheva L.I. Sotsiologicheskiye issledovaniya kak faktor upravleniya sotsialnymi protsessami v sfere fizicheskoy kultury i sporta [Sociological research as a factor in the management of social processes in the field of physical culture and sports]. Teoriya i praktika fizicheskoy kultury. 2022. No. 11. p. 103.
2. Melentiev A.N., Rakovetsky A.I., Sorokin D.V., Malinin A.N. Professionalnaya deyatelnost kollektiva kafedry fizicheskoy kultury i sporta v aspekte sotsiologicheskogo analiza [Professional activities of the staff of the department of physical culture and sports in the aspect of sociological analysis]. Teoriya i praktika fizicheskoy kultury. 2023. No. 1. pp. 104-106.
3. Nikolaev M.E. Sotsialnaya splochennost rossiyskogo obshchestva [Social cohesion of the Russian society]. Available at: https://nikolaev-centre.ru/news/264 12/05/2022.

Professional activity of the staff of the department of physical culture and sports in the aspect of sociological analysis

UDC 796.077.4

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Abstract

Objective of the study was to identify the attitude of teachers of the Department of Physical Culture and Sports to professional activities in the conditions of teamwork.

Methods and structure of the study. 72 teachers of physical education departments of the Plekhanov Russian University of Economics and Russian Timiryazev State Agrarian University took part in the sociological study. The sample was determined by the main array method and amounted to 70% of the general population.

Results and conclusions. As the results of the survey showed, 57% of the staff of the department is in favor of a collegial management style characteristic of the team. Joint decisions help to increase the motivation to perform professional duties based on mutual assistance, mutual assistance and respect for each other. At the same time, an important aspect of professional activity is the establishment of friendly and constructive business relations between members of the cathedral team. According to the opinion of 87% of teachers, communication outside working hours contributes to the establishment of a favorable psychological climate in the team. Most of the teachers (52%) are in favor of granting equal rights to team members in determining the strategic objectives of the department, while 8% of respondents leave the right to make organizational decisions to the head of the department. It is noted that an important component of achieving the strategic goal of the department is mentoring, which involves the transfer of experience from colleagues with long work experience to young teachers.

Keywords: *professional activity, physical culture, professional competence.*

Introduction. As modern negative trends in the field of professional activity of physical education departments, the psychological climate in teams is noted, which can be expressed in tense relations between teachers, poor organization of teaching work, functional imbalance, which in turn leads to a decrease in the level of university education.

In this regard, it becomes relevant to search for ways to improve the organization of the professional activities of teachers in the framework of the departmental work and conduct sociological research on this issue [1-3].

Objective of the study was to identify the attitude of teachers of the Department of Physical Culture and Sports to professional activities in the conditions of teamwork.

Methods and structure of the study. 72 teachers of physical education departments of the Plekhanov Russian University of Economics and Russian Timiryazev State Agrarian University took part in the sociological study. The sample was determined by the main array method and amounted to 70% of the general population.

The distribution of respondents by gender and age composition is presented in tables 1, 2. According to the tables, it can be seen that in the Russian Timiryazev State Agrarian University at the Department of Physical Culture and Sports, the predominance of the male staff is noticeable, in comparison with the Plekhanov Russian University of Economics. The largest age group of both teams of the studied departments are teachers whose age is from 60 years and above,

Table 1. *Gender composition of teachers*

University	men, %	women, %
Russian Timiryazev State Agrarian University	65	35
Plekhanov Russian University of Economics	40	60

Table 2. *Age groups of teaching staff*

Age groups (years)	<30	<40	<60	>60
%	10	28	30	35

Table 3. *Work experience of teachers*

Work experience (years)	Less than 5	5 to 10	10 to 20	Over 20
%	15	20	15	45

and, accordingly, the work experience is more than 20 years (Table 3).

Results of the study and their discussion. The obvious question always arises before the head of any team: how to manage it? What kind of leadership should be within a team aspiring to be a team? According to the survey, 57% of respondents were in favor of a democratic form of government, while 19% of respondents did not decide on their preferred leadership style. However, 23% of respondents believe that in some problematic work situations, personal responsibility is required when making a managerial decision, therefore, in this case, a one-man management style is preferable. At the same time, most of the department's employees do not recognize the absolutely authoritarian style of team management, believing that it will lead to the destruction of the team [4].

It is important to understand whether the staff of the department would like to maintain personal relationships along with business? The results of the survey showed that 57% of teachers supported only working relationships with colleagues, while 19% of the respondents were in favor of establishing friendships along with professional ones. At the same time, 24% of respondents would like to selectively approach the establishment of communications, based on personal sympathies and professional needs.

In this regard, 87% of the teachers of the department supported the idea of holding joint corporate events, for example, in the form of field trips. In their opinion, communication outside of working hours contributes to the removal of tension within the team, the prevention and prevention of conflict situations.

One of the important points in the activity of the department is the question of the distribution of rights and obligations in the work team. A sociological analysis showed that the majority of respondents would like to be able to freely express their opinion and influence the choice of the head of the managerial decision he makes. Thus, 52% of teachers spoke in favor of granting equal rights to team members in determining the strategic objectives of the department, while 8% of respondents leave the right to make organizational decisions for the head of the department, in particular, to draw up a schedule, vacation schedule, duty, etc.

Some researchers believe that the team should be formed by specialists with a high level of professional competence, others consider such personal qualities as mutual assistance, mutual assistance should be a priority for the effective work of the department. 35% of the respondents spoke in favor of the importance of professional competence, while 35% of the respondents were in favor of mutual assistance. In their opinion, the work team is not always people with high competence, it is a team that rests on friendly, emotional ties based on mutual assistance and mutual respect.

In organizing the work of the department, the head always faces the problem of selecting like-minded people, in particular, inviting new specialists or finding compromises with an already established team of employees. As the study showed, 19% of respondents expressed their opinion about attracting new personnel, abolishing the entire old team, while 27% of respondents were in favor of retaining part of the team. Nevertheless, the majority of survey participants preferred the following option: the efficiency of the department will be higher while maintaining the entire existing staff of teachers, while it is necessary to develop communication with constant prevention of conflict situations.

The solution of professional tasks by the staff of the department is sometimes associated with the need for interchangeability of personnel, the readiness of colleagues to assist in the performance of individual labor functions or the joint performance of work that goes beyond the established norms. When asked about their readiness to help other members of the department team, 21% of respondents confirmed their intention to always help their colleagues at work, 35% of respondents negatively reacted to any manifestation of support for their colleagues if this is done to the detriment of their personal and working time, the rest of the department staff spoke for assistance depending on the situation.

It is known that teachers devote the second half of the working day to methodological work at the department. In this regard, according to the majority

of respondents (76%), it is important for them to have comfortable ergonomic working conditions and a favorable psychological climate in the team. Their expectations from the administration of the university include the availability of modern equipment, spacious premises and household appliances. They see relations between colleagues in the creation of a relaxed atmosphere, a constructive dialogue on professional issues and the discussion of personal plans [5].

Conclusions. The study showed that the survey is an effective sociological tool for obtaining a subjective assessment of the professional activities of teachers in a university department.

As the results of the survey showed, the staff of the department stands for the collegial management style that is characteristic of the team. Joint decisions help to increase the motivation to perform professional duties based on mutual assistance, mutual assistance and respect for each other. At the same time, an important aspect of professional activity is the establishment of friendly and constructive business relations between members of the cathedral team.

An important component of achieving the strategic goal of the department is mentoring, which involves the transfer of experience from colleagues with long work experience to young teachers.

The staff of the Department of Physical Culture and Sports is a multipolar world that reflects the moods, the level of professional competencies, expectations and values of teachers, who are united by the strategic goal of improving the quality of physical education of students. The optimal ratio of all vectors of interaction within the framework of professional activity contributes to the effective achievement of the goal.

References

1. Lubysheva L.I. Metodologicheskiye printsipy postroyeniya sovremennoy sistemy podgotovki fizkulturnykh kadrov [Methodological principles of building a modern system for training physical culture personnel]. Teoriya i praktika fizicheskoy kultury. 2021. No. 8. p. 103.
2. Lubysheva L.I. Podgotovka sportivnykh kadrov: shirokiy professional ili uzkiy spetsialist? [Training of sports personnel: a broad professional or a narrow specialist Teoriya i praktika fizicheskoy kultury. 2020. No. 9. p. 95.
3. Lubysheva L.I. Sotsiologicheskiye issledovaniya kak faktor upravleniya sotsialnymi protsessami v sfere fizicheskoy kultury [Sociological research as a factor in the management of social processes in the sphere of physical culture]. Teoriya i praktika fizicheskoy kultury. 2022. No. 11. p. 103.
4. Melentiev A.N., Rakovetsky A.I., Nikitchenko S.Yu. et al. Kategorii «komandoobrazovaniya» v postroyenii instrumentariya kontent-analiza informatsionnogo massiva po fizicheskoy kulture i sportu [Categories of “team building” in the construction of tools for content analysis of the information array on physical culture and sports]. Teoriya i praktika fizicheskoy kultury. 2022. No. 11. pp. 30-32.
5. Yarullina L.R. Psikhologiya sotsialnogo vzaimodeystviya [Psychology of social interaction]. Part 2. Kazan: ministerstvo obrazovaniya i nauki Rossiyskoy Federatsii. Kazanskiy gosudarstvennyy arkhitekturno-stroitel’nyy universitet publ., 2013. 127 p.

Innovative approach to improvement of the professional and applied section of physical culture in university using means of single combats

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Abstract

Objective of the study is the scientific and theoretical substantiation of the professionally applied section of physical culture at the university, based on martial arts.

Methods and structure of the study. Within the framework of the scientific experiment, the curriculum was supplemented with a professional-applied section aimed at the formation of applied knowledge, the development of skills and abilities of a practical orientation, as well as the education of the leading psychophysical, social and personal qualities of future specialists. Various types of martial arts act as an effective means of high school professionally applied physical culture.

In the course of the study, a survey and an experiment were conducted, in which students of the Russian Timiryazev State Agrarian University, divided into control and experimental groups of 20 people each. The control group was engaged in the traditional curriculum in physical culture, the experimental group - in the innovative program with the inclusion of an applied section related to martial arts.

Results and conclusions. As the results of the study showed, an innovative curriculum aimed at using martial arts technologies based on spiritual historical practices, transferring the elements of motor actions of martial artists into the physical readiness of future specialists, allows you to effectively form applied knowledge, skills, and educate psychophysical, social and personal qualities.

Keywords: *innovative approaches, physical culture, professional and applied section, universities.*

Introduction. In connection with the intensive sportization of military physical education and other types of physical activity that did not initially belong to sports, physical education began to enter more and more into a state of crisis [3]. In this regard, scientists and practitioners, as a way out of the crisis, began to turn to sports activities as an effective means of developing specialized education and upbringing [4]. Thus, the historical process of sportization was opposed by a pedagogical technology adapted for children of school age, without a total orientation towards the sport of the highest achievements [1].

The sports approach was quite within the framework of the general theory of physical culture, as one of the sections of which was considered the integrative theory of sports [6]. However, in the context of this interpretation, professionally oriented types of physical culture, such as industrial gymnastics, professional and applied training of employees of law enforcement agencies, faded into the background and were poorly cultivated in the actual practice of combat, operational and civil labor activity [2, 5].

Along with sportized models of applied physical culture, their types were developed, close to real combat and labor practice [7]. However, during periods of peaceful development, such realistic models were actively suppressed, showing their significance only during periods of military confrontation or on the eve of the last [3].

To date, the current political confrontation between Russia and a number of unfriendly countries has actu-

alized the development and implementation of simulation tools for applied physical culture related to martial arts.

Objective of the study is the scientific and theoretical substantiation of the professionally applied section of physical culture at the university, based on martial arts.

Methods and structure of the study. The pedagogical experiment was organized at the Department of Physical Culture of the Russian Timiryazev State Agrarian University from February 2021 to December 2022. In the course of the study, a survey and an experiment were conducted, in which university students took part, divided into control and experimental groups of 20 people each. The control group studied according to the traditional curriculum in physical culture, the experimental group - according to the innovative one, which included an applied section related to martial arts. Based on the results of a sociological study, an experimental version of the curriculum was formed, containing an applied section, which was based on the ontokinesiological concept of V.K. Balsevich [1].

The innovativeness of the professional-applied section of the curriculum lies in the orientation towards the bodily-motor and mental development of students, taking into account their future military service. Various types of martial arts can act as the leading means of university professionally applied physical culture.

In the theory of professionally applied physical training, psychophysical readiness for successful labor and military activity is defined as a goal, to achieve which it is necessary:

- form applied knowledge,
- master applied skills and abilities,
- educate applied psychophysical, social and personal qualities.

The innovative approach presented by us assumes that the development of applied knowledge is based on the study of the history of martial arts. Its peculiarity lies in the fact that, along with theoretical knowledge, value meanings, norms laid down in the spiritual practices of martial arts are mastered.

When forming applied skills and abilities, one should take into account the methodical principle of transferring the elements of motor actions of martial artists into the physical readiness of future specialists, which is associated with the commonality of morphological, biochemical and functional changes in the body under the influence of exercises in the development of sports qualities.

Applied psychophysical qualities can be formed in the classroom in various sports. In the context of improving professionally applied physical training, martial arts are an effective means that have a significant impact on the content of socially significant values of a future specialist, serve as a kind of model for the formation of leading physical qualities, such as speed, strength, endurance, flexibility and dexterity.

The basis of professional-applied physical training based on martial arts are spiritual practices that are traditionally present in each type of this group of sports disciplines.

Results of the study and their discussion. The results obtained during the experiment showed that the level of mastering professional skills in the experimental group is higher by 10-12% compared to the control group. The revealed differences are connected with the use in the experimental group of an expanded arsenal of bodily-motor techniques and martial arts, as well as with a great variety and psychological and pedagogical synthesis of educational methods provided for by the experimental program of professional-applied physical training.

In the experimental group, a high degree of educational impact is stated, expressed in a more conscious and purposeful attendance by students of classes, the effect of which is directly related to the reproduction of specific situations of real life.

In the experimental group, a higher level of motivation was shown to choose classes in the sports sections of martial arts and martial arts, while in most cases students do not enjoy the right to be exempted from physical education classes.

Along with the orientation towards sports activities, the students of the experimental group showed an increased interest in applied physical education classes.

Conclusion. An innovative approach to the construction of the curriculum, aimed at using martial arts technologies based on spiritual historical practices, transferring the elements of motor actions of martial artists into the physical readiness of future specialists, allows you to effectively form applied knowledge, skills, and educate the psychophysical, social and personal qualities of students.

References

1. Balsevich V.K. Konversiya vysokikh tekhnologiy sportivnoy vospitaniya i sporta dlya vsekh [Con-

version of high technologies in sports education and sports for all]. Teoriya i praktika fizicheskoy kultury. 1993. No. 4. pp. 21-23.
2. Konikov S.L., Peredelskiy A.A., Orishev A.B. et al. Sotsialnyy kontekst razvitiya boyevykh iskusstv i yedinoborstv v sovremennoy Rossii [The social context of the development of martial arts and martial arts in modern Russia]. Teoriya i praktika fizicheskoy kultury. 2022. No. 7. pp. 50-52.
3. Lubysheva L.I., Romanovich V.A. Sportivnaya kultura v starshikh klassakh obrazovatelnoy shkoly [Sports culture in the senior classes of the educational school]. Teoriya i praktika fizicheskoy kultury i sporta. Moscow, 2011. 240 p.
4. Lubysheva L.I. et al. Sportizatsiya v sisteme fizicheskogo vospitaniya: ot nauchnoy idei k innovatsionnoy praktike [Sportization in the system of physical education: from scientific idea to innovative practice]. Moscow: Teoriya i praktika fizicheskoy kultury i sporta publ., 2017. 200 p.
5. Mandzyak A.S. Boyevyye iskusstva Yevropy [Martial arts of Europe]. Minsk: Sovremennoye slovo publ., 2005. 352 p.
6. Matveev L.P. [General theory of sports and its applied aspects]. Textbook for universities of physical culture.5th ed., corr., add. Moscow: Sovetskiy sport publ., 2010. 340 p.
7. Peredelskiy A.A., Vitkevich N.N., Konikov S.L. et al. Boyevoye prikladnoye dvizheniye [Fighting motion]. Bryansk, 2011. 200 p.

Mixing sports and political journalism: modern communication technologies

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Abstract

Objective of the study was to identify communication technologies that are used to broadcast political discourses in the sports field and in sports journalism.

Methods and structure of the study. During the work on the article, the methods of theoretical and system analysis, participant observation were used. The relevance of the work lies in the fact that in the context of globalization, sports and sports journalism are becoming important political, social and economic factors that require an interdisciplinary and systematic approach when studying.

Results and conclusions. A hypothesis has been developed about the changing role of sports journalism due to the fact that sports events and sports content are engaged by geopolitical brands, media business and focused on solving strategic and operational external and internal political tasks. The communication technologies that are used to mix the discourses of sports and political journalism are defined. These communication technologies include: branding technologies, creation of special events, storytelling and infotainment technologies.

Keywords: *sports journalism, communication technologies, media sports, special events, storytelling, branding.*

Introduction. The role of journalism in the modern world, which is constantly changing and developing mobile at top speed, is difficult to overestimate. Today we can talk about the development of a sharp struggle of discourses in the public media space, each of which represents the interests of certain political, commercial or non-commercial communities. The sports sector and sports journalism are fully involved in these processes. Discourses develop in the public media space. Journalism represents current discourses, captures publicly broadcast meanings in verbal and visual languages of communication.

British researcher of mass communication Denis McQuell in his scientific work "Journalism and Society" emphasizes that the power of the press lies in the strength of its influence. He distinguishes the following types of influence: persuasion and attitude change; formation of public opinion; impact on public image and reputation; creating a public agenda; formation of public interpretation of events; informing the public and structuring "public knowledge"; differentiated "strengthening" of news and images [9, p. 34]. How does this happen, what communication technologies are used for this? We will reveal these issues in this article, announcing the story of such communication technologies as: technology for creating special events; branding and co-branding technology; storytelling and infotainment. The indicated aspects confirm the relevance of studying this issue and determine the research interest of the authors of the article.

Objective of the study was to identify communication technologies that are used to broadcast political discourses in the sports field and in sports journalism.

Methods and structure of the study. During the work on the article, the methods of theoretical and system analysis, participant observation were used. The relevance of the work lies in the fact that in the

context of globalization, sport becomes an important political, social and economic factor that requires an interdisciplinary and systematic approach in the study.

Results of the study and their discussion. Sports journalism, covering sports events, forming the news agenda, revealing the history of sports victories, offering images of sports heroes, influences the formation of national identity. The basic function of journalism - informing, today is embodied through the use of a number of communication technologies for initiating and developing public discourse. The question of the initiation of public discourse is also relevant, who sets the issues and the tone of informing, forms the images of sports heroes. Here you can put a debatable question about a political request.

Today one can observe the thoughtful creation of a personal brand of an athlete, a sports club, a team. There is a planned cultivation of the symbolic assets of the subjects of the sports sphere, and the further use of their created symbolic capital in political discourses. Building strong brands is now a typical communication technology used in the political arena as well. Brands of countries, political alliances, political leaders are being developed and promoted.

When brands unite their symbolic capitals, proclaim the unity of worldviews and values, the co-branding technology begins to work. There is a cooperation of corporate goals and values, and most importantly, the target audience is expanding. Each brand essentially shares its target audience and there is a synergistic expansion of audiences. Such an expansion of the audience and the transmission of a sense of trust, provided by the interest of the audience in the brand, makes it possible to effectively use co-branding by mixing the interests of sports and political brands. Fanclubs of sports brands are an important audience, and cooperation with them through informational influence and the creation of special events allows us to broadcast current foreign and domestic political messages.

Sports journalism, both in theory and in practice, as the researchers note, has always carried out the most important social mission - the promotion of physical culture, which contributes to the development of a strong nation.

Sport at all times has been directly or indirectly dependent on politics, no matter what ideological doctrine is dominant at a particular historical moment in time, be it communist, socialist, democratic capitalist or any other. If we talk about the social function of sport, it is assumed that it promotes a healthy lifestyle, and this is important both for the country and for the person himself, but more importantly, through sport, you can form a person's national identity, unite the nation, by informing about the achievements of athletes and national teams.

When a country obtains the right to host a prestigious international competition or an athlete wins, teams also activate the patriotic feelings of citizens, unite the nation, and act as an effective means of integrating society. All this allows the political elite to use sport as an instrument of political influence on society.

The most important communication technology that is used to draw attention to sports and position sports itself as a significant socio-cultural phenomenon and as an important element in the life of the state is the so-called special event technology. Under special events, as Professor E.A. Kaverin is understood as the creation of symbolically organized actions aimed at solving a cascade of corporate brand tasks (information, reputation, image, anti-crisis) [5]. Creating special events as a communication technology has the power of emotional engagement; allows legitimizing the meaningful meanings of the initiators of the event; to rally the community around the broadcast and symbolically designed idea of the event; create and present heroes; generate a significant number of newsworthy stories – all this creates rich content for sports journalism.

It is important to note that in the field of sports journalism, discourses are embodied that are significant for both foreign and domestic policy of the state. Sports, national sports achievements of athletes, covered regularly, have a great social impact on citizens, on the formation of national identity, unity, common ideological values. This is where the communication technology of creating a meaningful social image and model, a new social norm and a proposed lifestyle is at work.

One of the significant Russian examples of this is the actualization in the media, starting in 2014, of the theme of promoting the sports complex "Ready for Labor and Defense". Broadcasting of sports events and informing about the victories of national athletes generates interest in sports, actualizes the understanding of the value of a healthy lifestyle and emphasizes the limitless possibilities of a person, even in situations of limited physical capabilities.

Communication technologies storytelling, namely the emotional narration of personal stories of defeat, and the experience of overcoming this, developing

willpower and further victories, can have a deep motivating existential impact on people in difficult life situations. In the indicated areas, the state order for sports content and the impact on the amount of broadcast time in the broadcasting schedule of state channels, and the purchase of motivating sports content for broadcast to a wide public audience is of strategic social importance.

Let's go further in our story and note that the topic of buying sports content today unfolds in the context of the very possibility of audience access to content. We can say that the topic of free and paid sports content today also applies to topical socio-cultural, economic and political issues. Since there is a contradiction between the declared human right to access to information and the right to own information. Sports information, or, in other words, the content of sports journalism, may be the property of media business entities.

The content of sports journalism is becoming commercial, and here we can already talk about infotainment technologies (integration of entertainment and informational approaches in journalistic content), which are used to form public interest in a sporting event, technologies should lead to a further desire to buy access. Today, free access to sports content is limited and we can talk about a mature media business industry that uses various communication technologies aimed at increasing sales of sports content.

The struggle for the right to host major international sports competitions and, consequently, for the opportunity to form the dominant information discourse is being fought not only among states, but also among the media business, representing the political and / or economic elite of both a separate country and global media corporations. And if we consider obtaining the right to broadcast international sporting events for various international audiences, various countries, then not only the financial aspect, but also the political one is clearly manifested here - the lack of equal information access for people from different socio-economic strata, as well as different countries to sports achievements .

Here the following debatable question arises - whoever has broadcasting rights has media influence, he can attract audiences or alienate audiences, form a “black” list of countries that, for one reason or another, do not fall into the pool of countries “worthy” to see key world sports events . This is a serious socio-cultural and political problem, since it raises the issue of alienating some people from access to the international human heritage, in this case reflected in sports achievements.

Conclusions. In the theory of journalism, sports and political journalism are two different areas of journalism. At the same time, discourses and meanings that are revealed in these different directions are clearly and latently intertwined. Today, more than ever before, modern sport is also an arena of political competition, and sports journalism is a sphere of information where political meanings are broadcast.

The sphere of traditional and new media (a vast pool of various social networks) today has an unprecedented impact on the formation of public opinion in terms of audience coverage and intensity of messages [8]. Sport itself has become a media phenomenon, the concept and phenomenon of “media sport” has appeared, which is characterized by the germination of political information in sports topics [2, p. 41]; corporate sports media are actively developing and capitalizing, having a large audience coverage, which makes them even more attractive for interaction with political goals. Communication technologies such as technology for creating special events; branding and co-branding technology; storytelling and infotainment are actively and productively used to achieve a wide range of both foreign and domestic political goals.

References

1. Alekseev K.A., Ilchenko S.N. Osnovy sportivnoi zhurnalistiki [Fundamentals of sports journalism]. Study guide for university students. Moscow: Aspect Press publ., 2016. 240 p.
2. Bekurov R.V., Lingzhi Lai, Maryina L.P. Mediastrategii professionalnykh futbolnykh klubov [Media strategies of professional football clubs]. Teoriya i praktika fizicheskoy kultury. 2022. No. 5. pp. 40-42. Available at: https://cyberleninka.ru/article/n/mediastrategii-professionalnyh-futbolnyh-klubov (date of access: 08.10.2022).
3. Blokhin I.N. Etnozhurnalistika v politicheskikh protsessakh: rolevoy analiz [Ethnojournalism in political processes: role analysis]. Doct. diss. abstract. St. Petersburg, 2009. St. Petersburg State University. Available at: http://www.dissercat.com/content/etnozhurnalistika-v-politicheskikh-protsessakh-rolevoi-analiz#ixzz2piU8ZpZU (date of access: 08.15.2022)
4. Volodina A.A. Aktualnost GTO v Rossii, problemy provedeniya GTO i ikh resheniye [The relevance

of the TRP in Russia, the problems of conducting the GTO and their solution]. Nauka i sotsium [Science and Society]. Proceedings national scientific-practical conference. 2019. Vol. 11, Part 2. pp. 169-173.
5. Kaverina E.A. Sobytiynyye kommunikatsii v koordinatakh sovremennosti [Event communications in the coordinates of modernity]. Mezhdunarodnyy zhurnal issledovaniy kultury. 2017. No. 2. pp. 54-65.
6. Kim M.N. Zhanry sovremennoy zhurnalistiki [Genres of modern journalism]. Moscow: Mikhaylov V.A. publ., 2004. 366 p.
7. Korkonosenko S.G. Osnovy zhurnalistiki [Fundamentals of journalism]. Textbook for universities. Moscow: Mikhaylov V.A. publ., 2005. 389 p.
8. Kostikov V. Tekhnologii ispolzovaniya novykh media v prodvizhenii sportivnykh brendov [Technologies of using new media in the promotion of sports brands]. MediaAlmanakh. 2017. No. 1. pp. 47-56.
9. McQuell D. Zhurnalistika i obshchestvo [Journalism and Society]. Moscow: MediaMir; Fakultet zhurnalistiki MGU im. M.V. Lomonosova publ., 2014. 255 p.
10. Mikhailov S.A. Sportivnaya zhurnalistika [Sports journalism]. St. Petersburg: Sankt-Peterburgskiy universitet publ., 2005. 255 p.