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2. Improving the training of athletes of different qualification.
3. Biomedical Aspects of Physical Education and Sports.
4. Human health, physical rehabilitation and physical recreation.
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Historical, theoretic-methodological foundations of the recreational activity of different population groups

Abstract. Purpose: to justify and to develop historical, theoretical and methodological foundations of the recreational activity for satisfaction of the leisured need of different population groups. **Material and Methods:** analysis and systematization of the special scientific and methodological literature and informational Internet resources; comparative method, historical analysis; systemic approach. The study involved school and college students and adults, in total of 1150 persons. **Results:** historical backgrounds of formation and development of recreation in the world and Ukraine are analyzed. Theoretical generalization of certain concepts of motivation in the area of physical recreation is provided, as well as theoretical and organizational principles of leisure and recreation in foreign countries are discussed. **Conclusions:** historical backgrounds of the development of knowledge about recreation are identified and conceptual approaches to the development of the theoretical and methodological foundations of recreational activities of various population groups are determined.

Keywords: physical recreation, activity, principles, population, background, leisure, methodology.

Introduction. The subsequent improvement of theoretical bases of physical recreation, despite of a big empirical material, demands qualitatively a new form of the organization of knowledge about it. It needs a scientific research of the essence, the nature and specifics of the development of knowledge about physical recreation, characteristics of its main signs, the subject and functions, conceptual models and the analysis of the world experience of the organization of activity in the sphere of a physical recreation.

The sphere of physical recreation develops dynamically, and its formation falls on the middle of the XX century which is confirmed by the considerable volume of scientific publications in foreign and native magazines, special scientific literature, available dissertation researches and so forth [1; 3; 7; 8]. In different countries of the world systematic basic and applied researches of this subject are carried out, groups of scientists whose researches significantly influence a content and directions of studying of the recreational perspective are formed [1–6; 9; 10]. Numerous research institutes of problems of leisure and recreation are created in different countries of the world.

The need of allocation of a problem of physical recreation in independent branch of scientific researches is predetermined by three main reasons [7]. The first is connected with strengthening of a need for the practical actions directed on the improvement of health of a person, the increase of its social activity, educational and cultural levels. The second – with allocation of the perspective of physical recreation not only in systems of physical culture and the general recreation, but also outside these systems, allocation of its specific patrimonial signs that allows define accurately its subject domain, scope of carrying out concrete scientific researches. The third – predetermined to attempts to pass from descriptive and explanatory knowledge of physical recreation to allocation of new, yet not studied facts, scientifically to comprehend such theoretical and practical problems which can't be given and solved for the designation of earlier known phenomena, a conceptual framework. The analysis of theoretical works of foreign and native scientists concerning the development of physical recreation allowed finding out new opportunities of the recreational activity of different groups of the population [1; 3; 7–10].

Communication of the research with scientific programs, plans, subjects. The work is performed according to a subject of the Built plan of the RW in the sphere of physical culture and sport for 2011-2015. "Improvements of the scientific principles of sport for all, fitness and recreation" (number of a state registration is 0111U001735) and the state budgetary subject of the Ministry of Education and Science of Ukraine for 2012-2015. "Historical, theoretic-methodological principles of the formation of the recreational activity of different groups of the population" (number of a state registration is 0112U007808).

The objective of the research: to prove and to develop historical, conceptual and theoretic-methodical principles of the recreational activity for the satisfaction of the leisured requirements of different groups of the

population.

Material and methods of the research: according to tasks of the scientific search the complex of the interconnected research methods, among which is used: analysis and systematization of philosophical, psychological-pedagogical and scientifically methodical literature, special literature on physical culture, recreation and information resources of a network Internet for the clarification of a conceptual framework of the research and the definition of essence and structure of physical recreation; standard and programmatically methodical documents in the sphere of physical training, education and culture; a comparative method for the purpose of comparison and the analysis of foreign and native experiment on the studied problem; abstraction, logic-theoretical analysis, historical analysis, content analysis of theoretical and methodical works, system approach.

Persons of different age categories took part in the researches. The limits provided by physiologic age classification were in the basis of dividing into age groups. Pupils, students, persons of the mature age, in number of 1150 persons took part in the researches generally.

Results of the research and their discussion. Crises which periodically happen in science are caused by the development of theoretic-logical and practical-active culturally-civilizational development. Crisis which arose concerning different categories of the population to physical culture is a natural phenomenon in a change of conditions of entry of a person into the world surrounding him. For the sake of it the analysis of historical prerequisites of the formation and the development of the recreation in the world and Ukraine are carried out, attempt of theoretical synthesis of separate provisions concerning the analysis of motivational theories in the sphere of physical recreation, theoretical and organizational bases of leisure and recreation in foreign countries are carried out and the possibility of application of their experience in practice of recreational and improving activity of different categories of the population of Ukraine which characterizes the paradigm approach is presented, which is widespread in modern diversified scientific researches.

The review of historical prerequisites of the emergence and the development of knowledge of physical recreation shows that sources of this knowledge are rather various; they arose in many spheres of activity of people and at different stages of the historical development had an unequal degree of the priority [4; 5; 7]. At the first stage of the development of knowledge of physical recreation the main attention was paid to its biological signs (adaptation-renewal signs, compensativeness of physical recreation). The allocation of group of the signs connected with character, contents and conditions of the motive activity became alternative approach – voluntariness, independence of the motive activity which is carried out according to the age psychophysiological development, a state of health, not regulated (has no tough standard rules and existential restrictions, difference of contents and forms of the recreational activity from professional, household and public, their conditionality hierarchy of requirements, specificity of means and methods), is shown mainly in a game form and characterized to variety of forms, means, ways of its implementation. Other research paradigm is the understanding of physical recreation as one of forms of the organization of rest, leisure of a person. In particular, physical recreation is considered as a component of the industry of leisure, the organization of activity of leisure of people in the course of carrying out spectacular mass actions, by providing different sports services. It is identified with the game activity of leisure in which physical, motive activity connected with a receiving satisfaction from the process of the performance of physical exercises prevails. The following approach consists in perception of physical recreation as to means of renewal of physical and spiritual forces spent in the course of the professional work, study. Some researchers consider physical recreation from positions of its valuable aspect. Thus, the physical recreation is considered from positions of several methodological approaches – as the activity directed on rest and the organization of leisure; as means of renewal of forces spent in the course of work; as means of acquisition and realization of vital values. There is a conclusion in the course of the analysis of the main methodological directions that all of them don't have contradictions among themselves, and supplements each other.

It is established that the problem of the organization of recreational classes and the attitude of the population towards them is studied insufficiently because of changes of social and economic conditions. In literature features of the organization of the recreational activity are most fully reflected in historical aspect [4; 5]. The analysis of dynamics of organizational forms of spending of free time of the population testifies that an absence of continuity, scientific justification of directions and forms of activity, stereotype, and a lack of orientation to recreational interests and requirements of different segments of the population are observed

in their functioning. However during the noted period it was based and introduced a wide range of viable, perspective innovative forms of the recreational activity. Unfortunately, these positive initiatives didn't find a sufficient administrative support and legislatively a standard justification though could become a basis of an innovation and reforming in the branch of physical recreation. There are data of modern researches differ in inconsistency, discrepancy, insufficient illumination of questions of advantages of different categories of the population in inquiries to improving technologies that testifies to backwardness of culturally anthropological methodology concerning the theory of physical recreation. Culture-anthropological methodology is an analysis of situation in a certain society of a person with a concrete political and economic way, and therefore the maintenance of a recreation, its technology, are defined by many welfare factors, including economic recession, commercialization of the recreational sphere, and destruction of traditional production structures. The recreational choice of the population was affected significantly by a recession of a standard of living when there are unsatisfied primary needs of a person, and spiritual interests of the increase of educational level, creative activity, cultural rest become ultrahigh and unrealized. The traditional nature of the recreational activity of the population changes significantly under such circumstances. As a result of the conducted researches the common and excellent features in the motivational sphere and ways of spending free time, the recreational activity of different groups of the population are established. As a result of the research it is established that most of respondents spend free time with a family (tab. 1). These data testify to the existence of resistant need for cultivation and support of family relations through the system of recreational and improving actions, and also confirm the research [6]. The subsequent places in priorities of spending free time are defined by a desire of respondents to spend leisure-time with acquaintances and friends, and practically among all age categories, and also in amateur and organized groups.

Table 1

Forms of spending free time to which persons of different age provide advantage, n=1150

Forms of spending free time	Quantity of answers,%					
	Pupils	Students	Persons of the first period of the mature age		Persons of the second period of the mature age	
			Women	Men	Women	Men
With a family	82,8	63,6	60,9	55,7	15,3	19,6
With acquaintances and friends	32,2	64,5	21,3	7,8	8,2	7,2
In amateur group	32,2	18,5	11,9	6,8	15,2	24,8
In organized group	61,0	66,3	63,2	32,7	41,3	51,7
Loneliness	6,3	8,9	43,1	47,9	54,0	57,9

The subsequent analysis of results specifies that respondents, who represent pupils and students, feel a strong need for the establishment of public contacts which is realized through recreational actions as a part of the informal amateur and organized groups. The greatest number of persons interested to spend free time with acquaintances and friends is observed at the students and school ages (64,5% and 32,2% respectively).

At the same time a significant amount of pupils (6,3%) and students (8,9%) spends active leisure-time on loneliness that is obvious caused by the need to stay alone by a psycho-emotional fatigue.

The percent of people who spend leisure-time on loneliness grows with the age, that is avoid contacts more often both with friends, and with family members if in the first period of the mature age among men of such are 47,9%, among women of 43,1% of respondents, already in the second period of the mature age – 54,0% of women and 57,9% of men avoid carrying out active leisure in groups.

It is known that the modern rhythm of life extremely negatively influences a psychophysical condition of a person at any age which demands renewal (recreation) of a bioenergy potential of an organism [7]. However the range of motives of rather recreational and improving classes can be rather wide. Considering it we united the main motives of recreational and improving classes in groups on the leading orientation of activity: improving (care about health, improving procedures); educational-cultural (contact with the nature, knowledge of culture, visit of clubs, participation in amateur performances, reading books, learning of foreign languages, excursions, etc.); adaptation-renewal (regeneration of forces, escape from a daily occurrence, passive rest, rest outdoors, road out to the country); social (public contacts, communication, meeting with friends); entertaining (hobby,

visit of discos); personal (self-improvement of an attempt to be allocated, self-confirmed, to reach as much as possible); sports and physical (classes on physical exercises, classes in fitness-clubs, independent recreating-improving classes, walks); extreme (aspiration of adventures, classes on extreme types of a recreation); house and family (spending free time with a family, purchases, revision of telecasts, levee of guests at home, help with economy, work on a personal plot, visit relatives).

When studying motives of recreational classes of persons of different age it is necessary to consider that the individually-psychological originality of each subject generates the variety of motives of communication. However there are general motives which combine different subjects in groups, define the content of their communication and relationship. As a result of the research priority motives of subjects in sports and recreational activity are defined, hierarchy of motives at visitors of recreational actions of sports and improving associations is investigated; a number of external and internal factors which influence the formation of valuable orientations of subjects of the recreational activity are allocated.

As a result of the research it is established that most of pupils as the priority provide an advantage to such groups of motives as entertaining, physical and sports, extreme, house and family. At the same time persons of student's age elect social, educational-cultural, entertaining, personal groups of motives.

The major motive is the adaptation-renewal motive for every second participator in recreational and improving classes at the first mature age. It unambiguously indicates to the most intensive rhythm of today's life which is the reason of psychophysical fatigue. In this case the requirement is traced to narrow the sphere of communication to the level of a family and to compensate deficiency of physical activity which is caused by the urbanized environment. During the recreational actions of the person of this age in which, as a rule, there are juvenile children, owe opportunity to develop their outlook, to form at them morally strong-willed qualities, and also to carry out improvement in natural environment.

It draws attention, that family and health is the major values and one of the major motives – approximations to the natural environment for persons of all age groups. Such state of affairs is completely justified as in natural environment there is an integration of the knowledge acquired in the course of study to practical experience of rational behavior and as result – the formation of culture of health, emotional and ethically esthetic spheres of the personality [6]. The modern civilization gives the chance to choose the most various forms of active recreation and to satisfy any needs of people of different age, sex and state of health in the motive activity. The obtained data testify that most of people realize the importance of the recreational activity in their life. Thus only 21,5% of persons of the first mature age, 14,0% – the second mature age consider that the motive activity for them is a very important value. Characterizing persons of the first period of the mature age, it should be noted that the greatest percent of people provides advantage to passive rest (rest near water) during summer holiday. Something less people of this age use rest with the low physical activity (walks, bathing, recreational games) which is generally coordinated with the data obtained by native and foreign authors [6]. However in general persons of young age choose active types of a recreation which gives the chance to raise indicators of a physical and psycho-emotional state. In the age category of the second period of the mature age years the popularity of walks is characteristic for three of fourth populations. The considerable popularity of passive rest among all studied age groups can be explained with certain traditions concerning the organization of rest. In each age category and in all forms of recreation the clear advantage of irregular recreational activity over the systematic is observed. Besides, with the age activity decreases that is coordinated with the data obtained on the foreign continent [6]. However interest grows with the age (at general recession of the recreational activity) to safe and moderated concerning intensity kinds of recreational and improving physical activity at the same time financially not of the expensive. It can testify to the need of the search of forms of activity which are the most available on the one hand, and on the other hand – give the chance to keep aerobic opportunities of an organism at the sufficient level. According to the existence in the structure of free time of the classes which are different by orientation and influence on the development of the personality, during work the following types of its use (tab. 2) are found.

It is established that passively contemplate type of the use of free time (nearly a third of all respondents) prevails among all categories of respondents.

The considered questions don't take out all problems of the recreational activity. The leading international experiment on questions of the involvement of the population to recreational and improving classes are not generalized yet, the technology of design of the recreational and improving activity in scientific researches on

the recreational activity isn't proved.

Table 2

Types of the usage of free time of persons of different age, %

Type of the usage	Pupils (n=540)	Students (n=181)	Persons of the mature age (n=210)
Rational-active	7,9	27,5	17,1
Rational -consumptive	29	31,2	33,8
Passively contemplate	35,0	31,8	32,4
Not rational	28,1	9,5	16,7

Unfortunately, existential-anthropological methodology which provides studying of personalized interest of subjects of a choice of the recreational activity as to means of self-affirmation, self-identification isn't enough used. Such approach provides the application of sociological, psychological, pedagogical methods of the research. It would give the chance to study and form needs of different groups of the population for self-organization of the free time depending on objective opportunities of their satisfaction, and also attractiveness of different types of recreational classes. Recreational projects have to provide the volume of knowledge, skills which various professional and age groups of the population, not uniform by social and financial status, and also those categories which demand medical-prophylactic care.

As a result in the considered theoretic-methodological principles of physical recreation it is emphasized that the way of thinking, its form, the approximate purposes and the ascending principles of the research, make methodology of the cognitive activity. Change of eras leads to change of a way of thinking. The scientific methodology is constantly enriched with the achievement of versatile sciences about the world and a person in it, and therefore can't be sainted in any form. Creativity – is the main component of the scientific methodology which concentrates in the special theory of knowledge– epistemology. Concerning the recreational activity epistemology as a social theory of knowledge, provides the use of various methodologies in the only integrative paradigm approach which gives a complete image to an object of the research – recreation, – at each concrete stage of the development of the culturally-civilizational process.

Conclusions. The theoretical analysis of the scientific works of foreign and native scientists showed that the systematic basic and applied researches concerning the recreational activity of the specified subject are carried out in many countries. From positions of the modern methodology of studying of difficult systems and data of the theoretical analysis it is expedient to consider the recreational activity as an elaborate system. The carried-out analysis of the historical experience and the modern perspective of the recreational activity testify that in its development it is possible to allocate some periods connected with the formation of other public institutes and the system of values of the society. It is established that the recreational activity has no appropriate effect yet at the present stage. Considerably it is predetermined by the incompleteness of the development of conceptual ideas and provisions of the formation of contents, organization, standard and staffing of such activity; insufficient systematization of factors which define an orientation of recreational actions. In noted conditions the foundation and the implementation of the concept of the recreational and improving activity of different groups of the population is actual which has a great practical and scientific value.

Prospects of the subsequent investigations in this direction. The obtained data open opportunities and prospects of the usage of the recreational and improving activity in Ukraine for the growth of the population involved to physical activity for the purpose of satisfaction of the leisured requirements.

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Biological age as a determining factor of individualization of physical education of children

Abstract. Purpose: to examine the existing methods of determine biological age of the children and choose the most affordable for the population. **Material and Methods:** theoretical analysis and generalization of literary sources. **Results:** the article presents a comparative analysis variety methods for determining the biological age. The qualitative component ratio of the body structure without its total volume and weight of body weight is the most effective method of determining the quality indicators of biological age. **Conclusions:** the main indicator of the biological age should be considered as a function of weight formation (weight) of the body that is associated in meaning with average population values.

Keywords: physical education, physical development, biological age, chronological age, types of constitution.

Introduction. The problem of individualization of physical education presumes first of all an account of age-specific habits of the developing organism. The traditional approach of an account of age-specific rates of physical growth and development is based on the average screening survey indexes of basic signs of differentiation and maturation of the certain systems of the organism. Such criteria are: skeletal age, dental age, the age reached by the shape of the body, secondary sexual characteristics chronological age and some others.

A significant drawback of this approach in the determination of the biological age is chronological inconsistency of these indicators for a single person. The choice of statistical indexes on the marked signs of biological age enables to create a model of an coincident chronological and biological age of the personal growth that satisfy the requirements. However in real terms in the criteria of biological development there is no coincidence with a chronological model of normal physical development. Taking into account an importance of problem solving, there were conducted an analysis of the scientific literature on this issue, an analysis of the statistical data of the examined contingent, the development of theory for building indicative semantic spaces with an introduced measure of their elements closeness, on the basis of what was installed a unified model that reflects the structure relations of the signs which characterize the biological age.

Connection research with academic programs, plans, themes. Research was conducted according to the thematic plan Kharkiv state academy of physical culture of research work: «Scientific methodical bases of the use of information technologies at the preparation of specialists in the area of physical culture and sport» (state registration number 0113U00120).

Purpose: to examine the existing methods of determine biological age of the children and choose the most affordable for the population.

Materials and Methods: theoretical analysis and generalization of literary sources.

Research results and their discussion. In construction of the healthy lifestyle system the national system of physical education is one of the main components, which should be based on the results of a permanent monitoring of physical population development, it's physical readiness and physical state.

Current stage of construction of the physical education system implies obligatory systematic monitoring of physical development and the features of its individual manifestations, which determine the necessary and sufficient level of the physical readiness. This requires for one's turn the development of tools and methods to ensure the physical load for each physical development age level, which arsenal should meet the necessary requirements that are determined by the individual physical development characteristics.

First of all it is necessary to take into account the biological organism maturation and the true biological age. Physical person development is an exclusively multilateral concept. The doctrine of physical development is one of the most soon formed independent directions in physical anthropology. In a modern anthropology by the physical development it is comprehended the complex of morphological and functional organism properties which determinate the reserve of their physical potentialities, a measure of active capacity, as well as the process of formation of the basic morphofunctional and somatic indicators itself that can be monitored to assess their

development. In the study of the human health it plays a large role [1].

In the basis of the characteristics of physical development are commonly used signs that reflect the “structural-functional” properties of the organism. The correlation of morphological and functional aspects of the biological person status constitutes the central anthropometric constitutiology issue, since the constitutional concept is based on the unity of form and function. The need for a comprehensive approach to the person body constitution is justified by the existence of common factors that determine the integrity of the developing, mature and aging organism, which corresponds to the integral principle in the study of the biological person status.

The correlation of constitution types with a predisposition to certain diseases is part of the general problem of the relation between the characteristics of morphofunctional person organization and of the organism reactivity and resistance to environment alternating factors, as well as the study of «individual reaction norm» of the organism. Different variants of individual norms in the relevant least reflect different types of adaptive behaviour, which are equal evident at both individual and population levels. Constitutional variety of populations reflects the measure of it's reactions to the influence of the environment. The concept of «predisposition» is the basis of extreme variants allocations of deviations morphofunctional organization in normal human populations and marked in them shifts represent the ontogeny of a number of diseases. This allows using constitutional typology as diagnostic and predictive characteristics, as relatively high sensitivity to certain environmental factors, as well high resistance to other environmental factors.

One of the main tasks of the sports anthropology is the study of the influence of different means of physical activity on physical development and somatic body features that determines success in various kinds of sports specialization, as well as on morphofunctional status of the youth generation in general. Not less important task is the organization of children and adolescents development monitoring in different environmental conditions with the delineation of the extreme values of these conditions for each category of the surveyed contingent, which in turn requires the tests standardization that evaluate the physical readiness and physical development level.

In medicine which is the main branch of practical human biology as extirpation of infectious diseases is increasingly paid attention to the constitutional diseases. Behncke as one of the first who studied the somatic constitution formulated in 1881 the goal of this direction with the following expression: «Different constitutions and the resulting different resistance degree of the organism pave the way for the development of certain diseases, if the individual is in adverse conditions. No need to explain how important is this point of view for general hygiene and therapy. With the correctly identifying of the various constitutional types and realizing of their physiological differences we can help people to walk safely through all the vicissitudes of life» [2].

In turn, speaking about the development process, Dearest, Göriach, Koch showed that with increasing of tissue energy is broken the correlation between growth and form. The formation accelerates so, that ends with a nanoid growth [1]. Considering the process of development, Geoffroy Saint-Hilaire pays attention to the need to distinguish the growth from formation (Paris, 1836) [3]. Thus, the basic factor of the development process is the body growth – its mass formation rate, which is in compliance with the study of this process takes place on a strictly defined regularity [4]. As a consequence of this process it is involved a differentiation of tissues by the accumulation of a certain mass, which is reflected in the formation of the body structure. By the imaging of the body structure as a three-dimensional object you could say about its growth in three directions [5, 6], which is reflected in shaping body volume. The most convenient indicator of this is shaping body length. The ratio of the two signs, reflecting the process of development, is most revealing of its representation, which reflects all the variety of possible somatotypes structures[7].

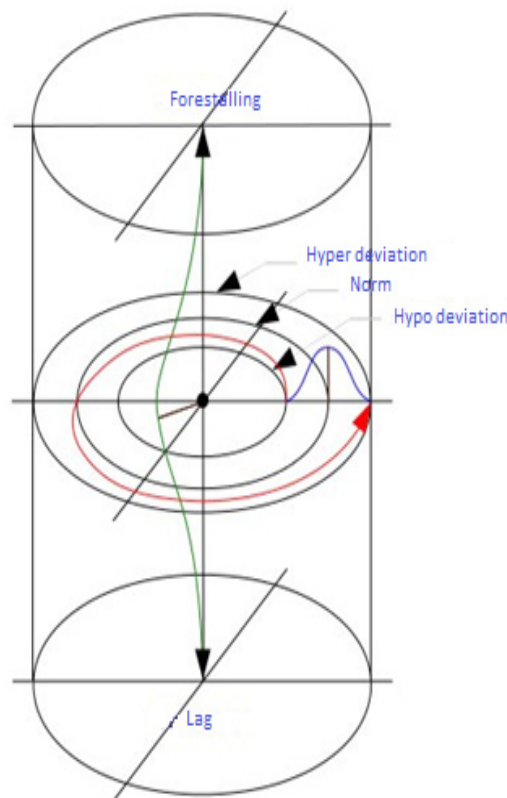
Based on the process of a body mass formation rate, relatively to the principles of course of its trend to each its value, by comparing the shape of the body, you can observe all the variety of variations of its structures occurring in the interval from a minimum monitored object to the maximum occurring [8; 9].

In the process of the body development and the formation there is their maturation, which is an indicator of their chronological development. It occurs because a metabolic processes course feature by the different hormonal ratio, which is expressed in the external body structure, leads to various speed of ripening of selected markers of biological evolution. If the average characteristics of used biological evolution (age) indicators will be taken as a standard which corresponds to the weight growth standard, then relative to this standard all leading and lagging in ripening time signs of biological development can be ranked in order of their deviations from the

minimum value of development speed to the maximum. This relation can be represented in multidimensional sign semantic space with an introduction of a single function action (pic.).

Thus, the widely used concept of skeletal, dental age, age reached by the body shape and other observed by a particular individual, reflects a qualitative feature of the body form building from the same volume of formed body mass.

The ratio of body parts to the total growth is qualitative structure of the body formation of the body. By the coincidence of the structure relations of the compared object with a standard of relations for all body parts, their ratio is equal to one, which allows to represent the standard as a circles with unit radius, to which each body part has its place, united by the radius vector [10].



Pic. Semantic space of qualitative morphofunctional relations reflection and assessment of biological age

By violation of synchronicity in the observed relation coherence of running morphofunctional processes will be observed forestalling and lag in the speed of ripening and corresponding form-building of parts of the whole. (In this case, the full amount of the whole form-building corresponds to one biological age, and parts of it to different). Deviations in both sides define the boundaries of interaction inconsistency or tolerance of semantic space that displays observed processes.

Within limits of functional optimum such deviations retain a sufficient level of viability, but determine the possible trend of systematic errors accumulation and transfer of this accumulation in a specific pathology. If the diversity has no systematic unidirectional accumulation and stores in a given area, such effect determines the level of inconsistency and equally likely development of violations which acquire strengthening of their direction depending on the conditions of interaction with the surrounding educational environment [11].

The more systematic interacting processes consistency heterogeneity is, the lower is the resistance of the organism in general and higher the liability to any violations. In this case, the determinating role plays the sensorial system of control over the current state of the interacting morphofunctional processes. The forestalling and lagging area in the history of the development of parts determines the allometry of their development and equity importance in general, which is the basis of prenatal diagnostics.

In the three-dimensional space such dynamics of the running process creates toroidal spiral by using of the polar coordinate system. In a rectangular coordinate system it is a pulsating sphere, which increases its volume. By the accumulation of systematically appearing violations it becomes apparent in the protrusion of its separate areas.

The quality ratio of the body structure components without taking into account the volume and mass of the body is the most effective method of the biological age quality characteristics determining. The estimation of the development speed using the shaping of the individual body structure components are fairly widely used in the assessment of biological age. It is used the concept of skeletal age, dental age, reached by the shape of the body age.

The dispersion of estimation of biological age parameters in each of the separate method of its assessment indicates the need of their generalized representations in the solution of the biological age assessment issue, since we are talking about shaping of the existing body weight. Practically this process is associated with the quantitative accumulation of body shaping components in its overall growth.

Correct equity ratio of shaping determines the most viable overall body structure which has the necessary stability, reliability and reproducibility (maintainability). Any deviation from this condition reduces the duration of existence, but this structure cannot be considered outside the stay environment.

In a practical manner the biological age in comparison with chronological plays a role of the synchrony development violations measure in the most viable holistic formation and in all cases this is a measure of remoteness from the average value, which is a population norm of optimal environmental cooperation «object – stay environment».

Conclusions:

1. The main index of the biological age should be considered as a function of body weight formation which value is compared with an average population value.
2. A common deviation from the average age norms of the population values of any of the biological age indicators points on the deviation in the mutual provision of functional systems, which argue the certain predisposition to constitutional diseases.
3. A system of evidence which reflects the biological age in a presented semantic space can be increased depending on the required accuracy of diagnostic conclusions about the features of the qualitative indicator of arising deviations.

Prospects for further research is to find effective ways of implementing chosen by us method for determining biological age in the process of physical education of children.

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Optimization of accelerated learning technique sport diving students of higher educational institutions

Abstract. Purpose: *optimizing the learning process engineering sport diving students of higher educational institutions on the basis of experimental detection features changes leading factors in teaching swimming. **Material and Methods:** the study involved 102 students of higher educational institutions. Kharkov. All subjects were divided into groups: experimental and control. Methods: theoretical analysis and synthesis of data specific scientific and methodological literature, educational tests, methods of functional diagnostics, pedagogical experiment, methods of mathematical statistics. **Results:** according to the results of peer reviews of sports engineering methods of navigation, the best results achieved experimental group students. Performance analyses of functional tests that assess the cardiovascular and respiratory systems were higher in the experimental group students than the control. **Conclusions:** developed an innovative system of accelerated learning technique sport diving students, creates favorable conditions for the improvement of physical development and physical fitness, providing a faster increase athletic performance.*

Keywords: *training, equipment, swimming, student.*

Introduction. The rational system of movements is understood as a technique of sports swimming which allow reaching the highest sports results. The technique of sports swimming is extremely variable, it develops constantly and updates on each of preparation stages [3; 4; 8; 9].

The main signs of technical skill – are effective, qualitative, with big “step”, economic and reliable swimming movements which are carried out at optimum speed with the maximum use of power and physical capacities of a sportsman [2; 7].

According to data of the special literature, the method of the improvement of components of technology of swimming – a speed and a step of a stroke proposes their consecutive solution – at the beginning the work directed on the increase in a step of a stroke by the improvement of dynamic and kinematic characteristics of the main movements at rather stable speed, the increase of power opportunities of muscles is performed, then the accent of the work is displaced towards the increase in the rate of movements at an aspiration to keep the reached step level [1; 5; 6; 10].

The long-term experience on training of students of higher educational institutions by sports ways of swimming gives the grounds to claim that the traditional approaches to training in swimming which developed so far for a number of reasons are insufficiently effective. It is connected, first, with the absence at coaches in a certain degree of due consideration to the initial motive experience of students, their preparedness for successful mastering of skills of swimming, and, secondly, with ignoring of the fact of variability of modern technique of sports swimming. The formation and the increase of technical skill of students in swimming depend on the development of their functionality, the growth of physical and psychological fitness. It is known that the structure and the nature of movements come to a harmonious compliance with morphological and functional features of an organism engaging swimming. The crucial importance is gained by well thought over the modern system of the bringing and special technical exercises in water helping to create a complex of necessary feelings, perceptions and motive ideas of an optimum option of movements.

Considering and using these features, we developed and experimentally proved the methodical scheme of complex training in technique of sports swimming which is allowing teaching students to float quicker and more effectively. The improvement of technique of sports swimming was carried out further in the conditions of the specially organized training process constructed on the basis of a wide use of micro and mesocycles of a selective orientation [3; 8].

Communication of the research with scientific programs, plans, subjects. The research is executed

according to the plan of RW of National law university “Yaroslav the Wise law academy”.

The objective of the research: to optimize the process of training in technique of sports swimming of students of higher educational institutions on the basis of the experimental detection of features of change of the leading factors in training in swimming and structures of preparedness of sportswomen.

Material and methods of the research. 102 students of Kharkov higher education institutions who chose the specialization swimming took part in the researches which were conducted during the academic years 2013–2014. During the real research the following methods were used: theoretical analysis and synthesis of data of special scientific and methodical literature; control and pedagogical tests; methods of functional diagnostics; the analysis of indicators of a state of health of students on medical records (Rose’s questionnaire); the stating and forming pedagogical experiment; methods of mathematical statistics.

The scheme of the accelerated training of students in technique of sports swimming includes five elements which solve specific objectives by the application of the specific training means. The duration of grade levels varies depending on the digestion of educational and methodical material by students. The differentiated system of the accelerated training of students in swimming is based on complex, simultaneous training in technique of all sports ways of swimming. The complete-separate approach to the development of basic elements of technique of sports swimming is used. The accelerated training in swimming has an advantage over a traditional (parallel-serial) method of training at the expense of the increase in the general (till 97%) and motive (till 72%) density of each practical classes, and also the increase for a course (on 45%) of the applied technical exercises.

The development of technique of sports ways of swimming by students of the control group was carried out by a parallel-serial method. The technique of swimming at examinees was estimated in the sports way on a 5-mark scale by seven experts in the system developed by us.

The expert assessment of technique of swimming was carried out by a crawl on a breast on 29 components, a breast stroke – 25, a crawl on a back – 24, a dolphin – 23 components (the technique of movements by hands, by feet, by breath, by coordination of movements, etc. separately was defined).

Results of the research and their discussion. By results of expert estimates 8,9% of engaged in the experimental group, 41,8% of engaged in the control didn’t master the technique of swimming in all sports ways. Students of the experimental group authentically in a large number mastered the equipment of a dolphin (on 8%), a crawl on a back (on 12,8%) and a breast stroke (on 14%), in comparison with epy representatives of the control group. The students of the control group studying the technique of sports ways of swimming on a parallel-serial method had lower marks. They mastered the technique of start from a starting curbstone, technique of turns much worse. It is established that they need an extra time for the high-quality development of technique of sports ways of swimming (table).

Results of expert estimates of technique of swimming at students of the experimental group (n=52) and the control (n=50) group

Way of swimming, distance	Number of the students who mastered:							
	Ways of swimming, %			Starts, %				
	EG, n=52	$\bar{X} \pm m$	t	p	EG, n=52	$\bar{X} \pm m$	t	p
Crawl on a breast, 25 m	EG, n=52	98,5±1,1	2,12	<0,05	EG, n=52	96,3±1,1	2,59	<0,05
	CG, n=50	95,1±1,2			CG, n=50	92,1±1,2		
Crawl on a back, 25 m	EG, n=52	99,6±1,2	2,92	<0,05	EG, n=52	98,4±1,2	2,44	<0,05
	CG, n=50	95,8±1,1			CG, n=50	94,1±1,3		
Breast stroke on a breast, 25 m	EG, n=52	99,0±2,5	3,51	<0,01	EG, n=52	99,3±0,9	2,5	<0,05
	CG, n=50	84,6±3,3			CG, n=50	95,8±1,1		
Dolphin, 25 m	EG, n=52	94,1±1,9	2,6	<0,05	EG, n=52	99,1±1,1	2,17	<0,05
	CG, n=50	86,1±2,3			CG, n=50	95,4±1,3		

The detailed analysis of the obtained data showed that the best development of the technique of sports ways of swimming happened at the students of the experimental group (at the expense of the increase (for the whole course of studying) of time allowed for the studying and the improvement of technique of exercises (on 16,6%), and the significant increase – on coordination of movements (on 75%)).

The effectiveness of the compared training methods most accurately is expressed in an integrated indicator – the time of overcoming of control distances at the end of training. The analysis of indicators at a control distance of 25 m at the examinees who are trained on a method of the accelerated training and parallel-serial, revealed essential distinctions. The students of the experimental group have an average time of overcoming of a distance of 25 m a dolphin on $2,1 \pm 0,32$ s, a breast stroke – on $1,9 \pm 0,51$ s less, than the control group. Distinctions are statistically reliable ($P < 0,05$). Indicators of a special endurance at students of the experimental group are much higher in comparison with data of the control group. Results of total time in exercises of 8x50 m freestyle which are on 5s less testify to it. It indicates the higher level of technical preparedness and high-speed endurance, and also the stability of movement skills which remain at students of the experimental group at intensive loadings.

The interrelation and interdependence of the structure of movements in water and the level of the development of physical qualities is an important methodical condition of the improvement of technique of sports swimming. The development of the power potential realized in the conditions of the water environment has a crucial importance for the improvement of movement skills, the increase of working capacity and sports productivity in swimming. It is experimentally proved that the draft force in water in full coordination of the movement developed by students of the experimental group is more when swimming by a breast stroke on a breast on $3,2 \pm 1,95$ kg and $3,4 \pm 1,81$ kg when swimming by a dolphin, than at students of the control group. Coefficient of coordination is reliable above at the students of the experimental group when swimming by a dolphin on 10%, a breast stroke – on 8%.

The testing was held for perspective sportswomen right after the termination of a course and the students are selected for classes in the group of the increase of sports skill.

The improving and training orientation of the developed innovative system of the accelerated training in swimming is confirmed by more expressed positive changes in a state of health of students of the experimental group, in comparison with the control group. Incidence, during researches, at students of the experimental group, in comparison with the control, was on average on 19,5% lower. At 82% from them a rather good mood, a health and a dream, desire to do swimming were observed. During the pedagogical experiment the gain of indicators of a complex total score of the level of health at students of the experimental group made 27% and was authentically above (on 7%), than at students of the control group [2].

Results of the analysis of the functional tests used in the pedagogical experiment revealed the changes connected with the formation of a syndrome of «economization of functions» and indicate the best adaptability of the cardiovascular system at examinees of the experimental group when performing physical activities.

The considerable improvement of the activity of respiratory functions is defined at students of the experimental group. Their indicators of a vital index increased on $16,5 \pm 0,78$ ml·kg⁻¹ after a course and initial sports preparation that is reliable above, than at students of the control group ($8,2 \pm 2,50$ ml·kg⁻¹).

A breath delay duration on a breath increased on $17,6 \pm 2,64$ s, and an exhalation on $14,5 \pm 1,91$ s and was authentically best of all, than at students of the control group. The informative indicator of a functional state (PWC170) was authentically above (on 6,4%) at examinees of the experimental group after the termination of the second year of sports preparation.

Conclusions. The offered method of the accelerated training in technique of sports swimming and further sports training promote the strengthening of health of students, create favorable conditions for the improvement of physical development and physical fitness, provide a fast gain of sports results in swimming.

It is expedient to use this system of practical training of students in the educational process in higher educational institutions.

Prospects of further researches. It is supposed to investigate the influence of the offered technique on the growth of sports results of swimmers.

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BEZVERKHNYA G., MAYEVSKIY M.

Pavlo Tychyna Uman State Pedagogical

Motivation of students pedagogical skills to physical education

Abstract. Purpose: to describe the motivation to physical education of pedagogical skills girls in the context of motivation to study and motivation to succeed. **Material and Methods:** 90 second-year students of pedagogical specialties were researched (30 girls from pre-school education, philological and economic faculties) Pavlo Tychyna Uman State Pedagogical University. **Results:** described the motivation of students in physical education by the analysis of involvement of subject and the target set. Student's motivation to learning activities and their level to success motivation were additionally investigated. **Conclusions:** is outlined reason of not formed internal motivation of students' physical training in general psychological orientation of the girls that sufficiently shown in context of motivation to study and progress.

Keywords: students, physical education, motivation, education, specialty.

Introduction. Nowadays the psychological perspective in the branch of physical education and sport only confirms the importance and the relevance especially with student's youth. The fundamental task remains a studying of their motivation for the successful involvement of students to classes by physical culture and sport as knowledge of the initial level of motivational installations allows scientists to predict rather precisely possible behavior in this direction through views of own healthcare. It should be noted that the motivational subject is popular not only for native scientists in studying of actual problems of physical culture and sport of student's youth, but also is particularly acute enough in foreign special literature [13–17]. Ukrainian scientists investigate fundamental directions in the motivational perspective with this contingent: it is both a search of concepts of personally focused physical education of students [1], and technologies of the formation of professionally pedagogical motivation [4], and gender features of the formation to classes by physical training at students [2], and the formation of physical culture of students in the system of higher education [8; 10], and ways of the optimization of physical activity of student's youth [5; 11], and dynamics of motivation to classes by physical culture for the entire period of study in HEI [9] and so forth.

The consideration of motivation to classes by physical culture and sport of students of pedagogical specialties is almost a significant problem. It is caused that an opportunity to realize itself in the professional activity as an active and healthy expert, and still giving of an example for pupils in the orientation to sports and improving actions will depend on motivation to classes by physical culture of future teachers. And, as shows the research of T. S. Ermakova who acquaints the Ukrainian scientists with the experience, the structure and the system of training of future teachers of schools in Polish educational institutions [6], a great value also have similar questions from the formation of physically healthy and motivated students of HEI on motive activity for Poles.

The relevance of the research is caused also by the insufficiency of works in which the motivation to classes by physical culture at student's youth would be considered taking into account the motivation to study and the motivation to success. As showed to the researches G. I. Gonchar, a structural basis of the motivation to study and the increase of professionally applied physical fitness of students first of all dependent on interest in the professional activity, the motivation to success and achievements, tendencies to the professional activity [3]. And the dissertation work of V. V. Tsibulskaya found the structure of motivators which influences the activity of independent classes of students. There are the adequacy of self-assessment of physical capacities, the motivation to success, the motive of knowledge acquisition and mastering a profession, the empathy to children in this structure [12]. Therefore, it is very important the motivation to classes by physical culture not to be considered separately from other motivational installations, in particular from the motivation to study and the motivation to success. Only having a complete motivational picture it is possible to understand rather objectively the reasons of the low motivation to the subject "physical education" of students of pedagogical specialties.

The objective of the research: to consider the motivation to a subject matter “physical education” of students of pedagogical specialties, considering the motivation to study and the motivation to success.

The tasks of the research:

1. To analyze the degree of preparedness and practical achievements in the motivational perspective of students according to references.

2. To characterize the motivation to classes by physical education, the motivation to study and the motivation to success of girls of pedagogical specialties in the context of their educational activity.

Materials and methods of the research. 90 students of the second year of pedagogical specialties (on 30 girls from faculties of preschool education, philological and economic faculties) of Pavlo Tychyna Uman State Pedagogical University are investigated.

Methods of the research were chosen: the analysis and synthesis of data of scientific literature, psychological techniques of studying of the motivation to study (according to T. I. Ilyina) and to success (according to T. Elers), questioning.

Results of the research and their discussion. The analysis of the motivation of students of three pedagogical specialties to classes by physical training will be considered in the context of their attracted to a subject and purposes (tab. 1-2). So, from answers of students to a questionnaire blank “How often do they miss class on physical education” (tab. 1) comes up that in most of students it happens very seldom and only 10% of students of preschool faculty and 13,3% of philological give the affirmative answer to this question. Three-four times for a semester students of the same faculties dare to miss classes: 13,3% confess on preschool, and on philological – 10%. 40% of girls of preschool and philological faculties and 43,3% economic almost don’t miss classes on physical education. Only because of disease classes aren’t attended on 36,7% of future philologists and teachers of preschool study and 56,7% of economists. The comparison of three faculties shows that students of the economics department are allocated by the highest self-discipline who doesn’t dare to miss classes on physical training without good reason.

Table 1

As often students miss classes on physical education

Variants of answers	Faculties					
	Preschool		Philological		Economic	
	n=30	%	n=30	%	n=30	%
Almost don't miss	12	40	12	40	13	43,3
Only when I am ill	11	36,7	11	36,7	17	56,7
3–4 times per semester	4	13,3	3	10	0	0
Often	3	10	4	13,3	0	0

The research of the purpose of visit of classes on physical education of students (tab. 2) found out that a third of girls preschool (30%) and economic (30%) faculties and a half philological (56,7%) attend classes on physical education with the purpose to protect themselves from possible problems with certifications and offset. So, the purpose of classes on physical education only for offset is inherent for 23,3% of girls of preschool faculty, 20% of economic and 50% of philological faculty. The avoidance of debt on a subject induces to classes in 6,7% of students of preschool and philological faculties and 10% of students of the economics department.

Classes are visited by not so many students through understanding of an advantage of physical exercises: 13,3% on the philological faculty, 16,7% for economic and 20% on the preschool. Even less students attend classes because of their interesting carrying out: 3,3% on preschool faculty and 6,7% on the philological.

There was no student at three faculties who would attend class on physical education with the purpose to learn new exercises; only on one student on economic and philological faculties (on 3,3%) attend class for the sake of a discharge of intellectual loading, and on the economic – for consultations of rather independent classes. Education of strong-willed qualities as the purpose of classes established at 6,7% of girls of philological and 10% economic faculties.

The pragmatic purpose – to increase physical fitness which is found at 23,3% of students of preschool and economic faculties. The increase of physical activity as the purpose of classes on physical education which is most expressed at students of preschool faculty – 23,3% and less (on 13,3%) at girls of philological and economic one.

Table 2

The purpose of visit of classes on physical education by students

The purpose of visit	Faculties					
	Preschool		Philological		Economic	
	n=30	%	n=30	%	n=30	%
I know that it is useful	6	20	4	13,3	5	16,7
For receiving an offset on PE	7	23,3	15	50	6	20
It is interesting on classes	1	3,3	2	6,7	0	0
Educate strong-willed qualities	0	0	2	6,7	3	10
For consultation on self-dependent classes	0	0	0	0	1	3,3
To increase PT	7	23,3	0	0	7	23,3
Not have debts	2	6,7	2	6,7	3	10
To learn new exercises	0	0	0	0	0	0
For discharge of intellectual loading	0	0	1	3,3	1	3,3
To improve motive activity	7	23,3	4	13,3	4	13,3

The analysis of the purpose of visit of classes on physical training of students of three faculties of pedagogical higher education institution indicates the shortage of an internal conscious motivation on physical culture. The vast majority of respondents consider physical training only as a program need, and it testifies to the absence at them the created values on physical culture. From here the external motivation (receiving a test but other) is dominant.

As physical education of students of three faculties which is mainly latched within a subject, we will stop in more detail on their motivation to study in general, after all this kind of activity is main and defining at this stage of their life. Studying of the educational motivation takes an important place in pedagogical researches, after all to count on the effective social-pedagogical interaction extremely difficult without an objective understanding of motives to study. One business when a student motivated studies because realizes his advantage for the society and wants to become a good expert, and another – when avoids problems (he is afraid to remain without a grant) as it was revealed in the motivation to classes on physical training. Baggage of knowledge of students with such motivational directions on the termination of higher education institution will be cardinally different.

We received results (tab. 3) which say that only girls of preschool faculty have more or less adequate motivation to study (only they have high points in a scale of knowledge acquisition and respectively 1 rating place from 77%) while future philologists and economists have it actually unacceptable during the analysis of results of the research separately on each of motivation scales (knowledge acquisition, mastering a profession, receiving of a diploma). Students of the philological and economics department in motivation to study showed especially pragmatic interest, after all for them the motive of receiving to a diploma (1st place) prevails over motives of knowledge acquisition (the 2nd place) and mastering a profession (the 3rd place).

Only the prevalence of motives behind the first two scales of the motivation to study testifies to an adequate choice of profession and satisfaction with it. We didn't reveal full compliance even at girls of preschool faculty, after all motive "receiving to a diploma" at them on the 2nd place and mastering a profession on 3 the 3rd place. But after all a cognitive interest to a profession is dominating at them which they get. So, the number of students who independently study a number of the subjects that are necessary, in their opinion, for a future profession, following: 40% among economists, 60% of philologists, and most of all among girls of faculty of the preschool study – 70%. Equally carefully it is necessary to study all disciplines for full mastering a subject of 73,3% on economic and preschool faculties and 56,7% on philological.

Table 3

Motivation to study of students of pedagogical higher education institution

Scale of motivation	Faculties					
	Preschool (n=30)		Philological (n=30)		Economic (n=30)	
	%	place	%	place	%	place
Knowledge acquisition	77	I	62	II	64	II
Mastering a profession	61	III	53	III	61	III
Receiving to a diploma	67	II	82	I	77	I

The motivation to study of students to a certain extent displays their motivation to achieve a success – to graduate and to receive the public status with it is defined. Motivations of the achievement of a success of students of pedagogical specialties, is rod, after all it leaves from the needs of an individual to achieve success in the put tasks. As far as an individual is focused on a success, so he is active, purposeful and also capable to plan own vital purposes and to go in the direction of their realization and respectively to take responsibility for the best performance of actions.

Results of a technique on studying of the motivation to success, according to T. Elers, (tab. 4.) show the prevailing average level of motivation (on philological faculty of such 60%, on faculty of preschool education of 63,3%, for economic 76,7%). The low level of motivation to success of the identity of future expert is found in students of all faculties, however most of all expressed at future teachers of preschool study and philologists (in both cases on 36,7%). Among girls of the economics department with the low level of motivation 23,3% that is the lowest indicator from all selection are revealed. From here the motivation subsystem to a success isn't created at all in a third of students of preschool and philological faculties. According to the average level, it informs on the partial formation of a subsystem of an orientation of an expert.

Table 4

Motivation to success of students of pedagogical higher education institution

Level of motivation	Faculties					
	Preschool (n=30)		Philological (n=30)		Economic (n=30)	
	n	%	n	%	n	%
Low	11	36,7	11	36,7	7	23,3
Average	19	63,3	18	60	23	76,7
High	0	0	1	3,3	0	0

High level of an assessment of the motivation to success of the identity of a future expert which lights about a full formation of a subsystem of an orientation of the personality, was established only at one student of philological faculty (these are only 3,3% from their selection).

As showed results of our research which included a rather detailed analysis of questions of the technique of Elers, students with the low level are not initiative, low-active, try to avoid obstacles, prefer as lungs and physical exercises which aren't needing the persistence generally which are carried out easily and everything to protect themselves from criticism from fellow students for possible awkwardness. Concerning girls of three faculties of pedagogical higher education institution with the average level of motivation to success, in classes on physical training it has the manifestation that their activity, though productive, but to a certain extent dependent on external control: on the one hand – an accurate orientation only to own forces, but, as for making efforts, here students approach to the offered by the teacher on classes by physical training of a task without excess enthusiasm; obstacles, depending on the degree of their complexity, can try both to overcome, and to avoid, that is without persistence and will.

Our research confirms the data of O. O. Bilichenko [2] and M. A. Isachenko [7] that the low level of aspiration to self-development, feeling of uncertainty in itself, the low motivation to systematic classes are those factors which limit the motivation to classes by physical education.

Thus, the direction of motivation of the educational activity of students and the level of their motivation to success which showed the orientation to the inhabitant, explain the prevalence in most of girls of pedagogical specialties of the external motivation on classes by physical education and unambiguous shortage of internal, truly driving motivation.

Conclusions:

1. It is established that a third of students of preschool (30%) and economic (30%) faculties and a half of philologists (56,7%) attend classes on physical education with the purpose to protect themselves from possible problems with certifications and offset and has no student at three faculties who would attend class on physical

education with the purpose to learn new exercises.

2. The research of motivation to study showed that students of the faculty of preschool education understand the importance of knowledge acquisition from a future profession for the personal and professional growth best of all therefore it aren't limited to a framework and requirements of the program. At students of philological and economic faculties at whom the motive of "obtaining a diploma" is the priority in motivation to a study, the cognitive interest is concentrated in the sphere of professionally focused subjects. It certifies that the fact that the low motivation to systematic classes is one of factors which limit the motivation to classes on physical education.

3. The domination of the average level of motivation to success is revealed which is shown by that their activity, though productive, but dependent on the external control on classes on physical education at students. On the one hand the accurate orientation is only to own forces, but as for making of efforts, here students approach to the offered classes by the teacher on physical education of a task without excess enthusiasm; obstacles, depending on the degree of their complexity can try both to overcome, and to avoid, that is, without persistence and will.

Prospects of the subsequent researches consist in a search of effective forms of the organization of physical education with students of pedagogical specialties who could influence the internal motivation more effectively. Despite of the existence of researches from studying of motivation before classes on physical culture of students of pedagogical specialties, after all students of faculties need more detailed studying on which the female sex prevails traditionally.

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BOYCHENKO N.

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Model technical and tactical training karate a «game» manner of conducting a fight

Abstract. Purpose: optimization of technical and tactical training karate «gaming» the manner of conducting a duel.

Material and Methods: analysis and compilation of scientific and methodological literature, interviews with coaches for shock combat sports, video analysis techniques, teacher observations. **Results:** the model of technical and tactical training karate «game» manner of conducting a duel. Selection was done complexes jobs matching techniques to improve athletes 'game' in the manner of conducting a duel «Kyokushin» karate. **Conclusion:** the model of technical and tactical training fighters "game" manner of conducting a duel, which reveals the particular combination technique karate style «Kyokushin». Selection was done complexes jobs matching techniques to improve athletes 'game' in the manner of conducting a duel «Kyokushin» karate, aimed at improving the combinations with the action on the response of the enemy.

Keywords: technical and tactical training, model, style, fight, combination techniques.

Introduction. An individual manner of conducting a fight, and respectively, still individual tactics are formed depending on identity of a sportsman, creation of his body, physical development, temperament, will, motor ability inherent only to him [1; 2; 4; 8; 10].

In combat sports the identification of a manner of conducting a wrestle of a sportsman is carried out behind the physical qualities dominating in him: ability to manifestation of force characterizes "weightlifter", endurance - "temper", ability to technical and tactical defeating - "player". These manners of conducting a wrestle are standard in combat sports. But each separate type of single combats has specific additions to them, and sometimes allocates the manners which characteristic is defined by specifics of the competitive activity.

The researches which were conducted in "kyokushinkai" karate in recent years, [3; 9] allowed to establish that for sportsmen of "kyokushinkai" style the application of three manners of maintaining a fight is characteristic: percussive attack (power domination, tempo, domination at the coordination of actions, in the management of motive reactions of a rival), combinational attack and provocative maneuvering. Percussive attack is characterized by a constant aspiration of both fighters to the capture of a tactical initiative at a distance choice. When drawing all kinds of blows to a fight aspire, carrying out an impact, to overcome a rival. Series of blows and a combination of blows wrestlers want to finish in blow which knocks out. The considerable part of a fight is in the middle and short distances, and distant is applied seldom and generally to carrying out blows by feet. For combinational attack a wide application of threats, wrong and preparatory attacks are characteristic. The basis of this manner is made by a call at a rival of a reaction of switching at his defeating change to a sector of drawing blows, rate of their performance, but other. A provocative maneuvering is characterized by granting an opportunity to a rival of the application of the actions elected by him in unprofitable conditions, active application of various preparatory and productive actions without a transition to attack (a provoking and a call). For this manner of a fight the application of defeating, change directly lines of attack and length of a distance, a call on prosecution but other are peculiar.

The connection of the research with scientific programs, plans, subjects. The work is performed according to the plan of the RW of Kharkov state academy of physical culture.

The objective of the research: optimization of the process of technical and tactical training of karatekas of a "game" manner of conducting a fight.

The tasks of the research:

1. To create a model of technical and tactical training of karatekas of a "game" manner of conducting a fight.

2. To carry out a selection of complexes of tasks for the improvement of combinational technique of sportsmen of a "game" manner of conducting a fight in "kyokushinkai" karate.

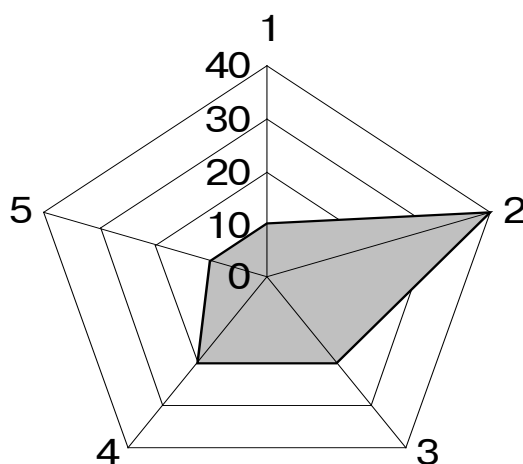
Material and methods of the research. For the solution of the put tasks such methods were used: the analysis and synthesis of these scientifically methodical references, conversations with coaches-teachers of percussive types of single combats, the analysis of videos of techniques, pedagogical supervision.

Results of the research and their discussion. For the purpose of the optimization of the educational-training process and the achievement of the planned result, using strengths of a wrestler, it is recommended to adhere to an individual approach, considering a manner of conducting a fight of a sportsman.

A wrestler of a “game” manner of conducting a fight it is necessary to pay attention to the improvement of wrong attack actions, threats, pauses and application of delays of blow in a combination, to have the counter combinations connected to maneuvering, change of the line of attack and pushing in an arsenal.

It is known that series and combinations of techniques in each type of single combats are carried out taking into account specifics of the competitive activity. So, for “kyokushinkai” karate is expedient the performance of five types of combinations [3]: combinations with change of sectors of a defeat; with action on reaction of an opponent; with repeated blows; with application of an impact of an opponent; with application of an impact on an opponent.

The analysis and synthesis of these scientifically methodical references, conversations with coaches-teachers of “kyokushinkai” karate, the analysis of videos of techniques of karatekas, pedagogical supervision, allowed to create a model of technical and tactical training of sportsmen-juniors according to a manner of conducting a fight (pic). At the improvement of combinations of techniques karatekas of a “game” manner of conducting a fight paid more attention to combinations with action on reaction of an opponent (40%), with application of an impact of an opponent (20%), with repeated blows (20%), with change of sectors of defeat (10%), with application of an impact on an opponent (10%), with emphasis on the creation of inconvenient situations for a rival.



Pic. Model of technical and tactical training of sportsmen-juniors of a «game» manner of conducting a fight:

- 1 – combinations with change of sectors of a defeat (%); 2 – with action on reaction of an opponent (%);
 3 – with repeated blows (%); 4 – with application of an impact of an opponent (%);
 5 – with application of an impact on an opponent (%)

Being guided by the analysis of special literature [3; 5–7] and on the created model, the selection of complexes of tasks was carried - out for the improvement of combinational technique of sportsmen of a “game” manner of conducting a fight in “kyokushinkai” karate, in particular combinations with an action on the reaction of an opponent. The improvement of combinations of techniques happened in the main part of the educational-training classes.

The improvement of combinations with an action on the reaction of an opponent.

Without a partner (by means of a boxing bag):

1) satisfactory performance of series of blows with the use of a wrong attack (a pause, a micropause, a delay of blow, threat) before a series, in a series, before the last blow, before a series and before the last blow;

2) satisfactory performance of series of blows behind a coach-teacher's signal, a wrong attack and the following counterattack by a series of blows with a change of a defeat sector;

3) satisfactory performance of series of blows behind a coach's signal, a pause (micropause) and the following counterattack by a series of blows.

With a partner (by means of a boxing pillow):

1) tasks 1-3 are the same as with a boxing bag, but a circular kick in the gentle level is directly struck to a rival's hip;

2) performance of series of blows in a movement, at the rival's impact with a pillow – a defense and a counter counterattack by a series of blows with imitation of a wrong attack (a pause, a micropause, a delay of blow) before the last blow;

3) at a retreat of a rival with a pillow – an attack by a series of blows with imitation of a wrong actions (a pause, a micropause, a delay of blow) before a series, in a series, before the last blow, before a series and before the last blow (1 attack – 2–3 series; 3–4 series).

Example:

- defense – a direct stroke by a left hand in the average level (breast) – a direct stroke by a right hand in the average level (breast) – blow from below a left hand in the average level (stomach) – a pause – blow from below a left hand in the average level (stomach);

- from a left-side rack a circular blow by a left foot in the average level – a direct stroke by a right hand in the average level (breast) – a wrong attack by a direct stroke by a right hand in the average level (breast) – blow from below a left hand in the average level (stomach) – circular blow by a right foot in the lower level with a step forward.

With a partner (by means of boxing paws):

1) performance of series of blows in paws, provoking on a protective action of a rival with paws by means of a wrong attack actions and a counterattack in the opened sector;

2) performance of series of blows in paws, by means of wrong attack cancellation of a defensive action of a rival with a paw and a counterattack in the opened sector;

3) performance of series of blows in paws, by means of a pause, a micropause and a delay of blow, a call of a retarded reaction in defensive actions of a rival with a paw and a counterattack in the opened sector.

Example:

– from a left-side rack a wrong attack in a circular blow of a right foot in the lower level – a circular blow by a right foot in the average level with a step forward – a direct stroke by a hand – a circular kick in the lower level with a step forward;

– from a left-side rack a wrong attack in circular blow of a left foot in the lower level – a direct stroke by a left hand – a direct stroke by a right hand – blow from below a left hand – a circular blow by a right foot in the lower level with a step forward – a threat by a direct stroke of a right hand – blow from below a left hand.

Fixing of the studied material is recommended during a free fight.

Conclusions:

1. The model of technical and tactical training of martial artists of a "game" manner of conducting a fight which opens features of a combinational technique of karatekas of "kyokushinkai" style is created.

2. The selection of complexes of tasks for the improvement of combinational technique of sportsmen of a "game" manner of conducting a fight in "kyokushinkai" karate, directed on the improvement of combinations with the action on reaction of an opponent is carried out.

In the subsequent it is planned to create a model of technical and tactical training of karatekas of a "power" manner of conducting a fight.

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Features of high-speed and strength qualities development in young biathlonists aged 14–15 in the preparatory period

Abstract. Purpose: to substantiate a methodology of high-speed and strength qualities development of young biathlonists aged 14–15 during the preparatory period. **Material and Methods:** young biathlonists aged 14–15 from control and experimental groups took part in the research. There were 12 athletes in each group. Pedagogical methods and methods of mathematical statistics were used in the work. Pedagogical methods of researches were used for level definition of high-speed and strength qualities development of young biathlonists. **Results:** reliable increase of motive qualities and polydynamometry results testing of young biathlonists from the experimental group due to implementation of the experimental methodology in the preparatory period is established. **Conclusions:** application of the developed complexes in the preparatory period in the experimental group of young biathlonists aged 14–15 allows to raise indices of motive qualities and polydynamometry testing statistically significantly.

Keywords: young biathlonists, testings, motive qualities, polydynamometry.

Introduction. The characteristic manifestation of complex forms of high-speed abilities in difficult motive acts, such as ability to the achievement of high level of remote speed, ability quickly to gather speed on start, to carry out with a high speed of the movement, connected with firing, dictated by the course of a competitive fight in the training and competitive activity in cross-country skiing and biathlon [1; 2; 4; 7]. The level of high-speed abilities is influenced by features of muscular tissue – a ratio of different muscular fibers, their elasticity, tensile properties, and a level of intramuscular and muscular coordination [3]. The manifestation of high-speed abilities is closely connected with a level of the development of force, flexibility and coordination abilities, the improvement of sports technique, opportunities of biochemical mechanisms to the fastest mobilization and resynthesis of alaktate anaerobic suppliers of energy, a level of strong-willed qualities [5; 6].

The objective of the research: to prove a technique of the development of high-speed and power qualities of young biathlonists of 14-15 years old during the preparatory period.

Material and methods of the research. Young biathlonists of 14-15 years old of the control and experimental groups in number of 12 sportsmen in everyone took part in the research. Pedagogical methods of researches of the definition of a level of the development of high-speed and power qualities of young biathlonists and methods of mathematical statistics were used.

High-speed and power exercises were used within two main methods in the course of physical training of young biathlonists of the experimental group – continuous and interval. The continuous method is characterized by a single performance of physical exercises which was used at an all-preparatory stage of an annual macrocycle. The interval method provided a performance of exercises with the regulated rest pauses.

Exercises were carried out as in uniform and variable modes during the usage of these methods.

Biathlonists applied a big set of exercises which can be divided into groups conditionally for the development of force of muscles and speed of their reduction. The first group – power exercises which are carried out with big weightings:

- crouches with a bar or a partner on shoulders (till the near limit weight), jumping with a weight on shoulders (20–30 and more kilogram);
- exercises with weighting and resistance for the selective development of force of separate muscular groups: muscles which bend a foot; muscles of an abdominal tension; back muscles; muscles of a back surface of a hip; muscle-benders of fingers of hands; muscle-benders of hands in an elbow joint;
- exercises on apparatus and climb a rope on hands; exercises on wall bars.

The second group – is high-speed and power exercises, which are carried out with small encumbrances, but with as is possible bigger speed. Exercises with an easy bar which are carried out at fast speed belong to this group, but the main group is formed by throwing of apparatus of different weight, different ways.

The third group – is jumping exercises with different extent of encumbrance, and also in conditions which trouble their performance (a soft ground, an increase in amplitude of bending of joints of a foot, pushing away from a high running start).

The fourth group – is jumping exercises which are carried out without encumbrance (different jumps and many-gallops).

The first four groups of exercises were used at the all-preparatory stage of an annual macrocycle, the following – is on the specially-preparatory stage.

The fifth group joined special exercises.

Young biathlonists of the experimental group applied to the purposeful development of high-speed and power abilities: special high-speed and power training with application of apparatus and exercise machines; high-speed and power training on ski-rollers; complex of imitating and preparatory exercises; change of the mode of a remote work.

High-speed and power trainings on apparatus and exercise machines were carried out by a circular method: bending and extension of hands in an emphasis on parallel bars; jumping up from a crouch; simultaneous work as hands on the exercise machine; a trunk raising from lying position on hips; jumps in attack with change of feet; attack aside to sit down, a push of a foot to transfer weight on other foot; alternate work as hands on the exercise machine; arching in a back, lying on hips; knee-bend with encumbrances; bending and extension of hands in lying position; transition from the provision of a deflection to situation hung, having bent.

The mode provided the performance of exercises with the greatest possible frequency that allows keeping a structure and amplitude of movements. The time of an exercise performance is 30 s; a rest-hour – till 1 min; quantity of series – 3; a rest-hour between series – 5–7 min.

Specially- preparatory exercises were aimed not only at the development of power and high-speed and power abilities, but also at the increase of extent of their realization in the competitive activity.

Exercises for the improvement of quality of firing after loadings in complex and shooting trainings were also used in training classes of young biathlonists of the experimental group.

As tests what answered the direction of the training process were used at stages of an annual macrocycle. The researches were conducted during 2010-2012 in two stages. At the first stage (2010-2011) two groups – control and experimental on 12 sportsmen of 14-15 years old who were distributed by results of testing of motive qualities and indicators of a functional state took part in the research.

The noted tests answer tasks of trainings of 14-15-year-old sportsmen in the preparatory period.

Results of the research and their discussion. The testing of motive qualities of young biathlonists of 14-15 years old of the control and the experimental groups held at the end of the preparatory period found an essential difference between results of tests (tab. 1).

Table 1

Results of testing of motive qualities of biathlonists of 14-15 years old of the control and the experimental groups at the end of the preparatory period (October in 2010) (n1=n2=12)

№	Indicators of testing	Control group	Experimental group	Assessment of probability	
		\bar{X}_1+m_1	\bar{X}_2+m_2	t	p
1.	Pulling up on a cross-piece, quantity of times	8,4±0,48	10,5±0,50	3,04	<0,01
2.	Bending and extension of hands in lying position, quantity of times	24,1±1,22	28,6±1,24	2,59	<0,05
3.	Raising and lowering of direct feet from a deflection on a cross-piece, quantity of times	12,3±0,74	14,8±0,75	2,36	<0,05
4.	Long jump from a place, sm	196,4±3,14	208,7±3,17	2,75	<0,05
5.	Shuttle run of 4x9 m, s	12,1±0,94	10,8±0,86	1,02	>0,05
6.	Cross run of 3000 m, s	678,2±3,10	668,1±3,08	2,31	<0,05

So, the received results of indicators which answer the general training of biathlonists, are much higher in the experimental group. If a statistically reliable difference in indicators didn't exist at the beginning of the researches, they have an essential difference at the end. In the experimental group the average result in pulling up on a cross-piece made 10,5 times, while in the control group 8,4 times ($t=3,04$; $p<0,01$), in bending and extension of hands in lying position 28,6 times against 24,1 ($t=2,59$; $p<0,05$) control, raising and lowering of direct feet from a deflection on a cross-piece respectively 14,8 and 12,3 times ($t=2,36$; $p<0,05$), to a long jump from a place of 208,7 sm and 196,4 sm ($t=2,75$; $p<0,05$), to cross run on 3000 m 668,1 s and 678,2 s ($t=2,31$; $p<0,05$). That is the program which was applied in the experimental group and provided the solution of the main task at the beginning of the stage of the previous basic preparation – the increase of the level of the general physical fitness, – allowed it to solve in a bigger measure, than in the control one.

Near it the level of special power and high-speed and power preparedness of young biathlonists of 14-15 years old was defined by us as a result of the training process.

The conducted measurements didn't define an advantage of one of groups at the beginning of researches ($p<0,05$).

Results of training improved in both groups after carrying out the educational and training process in the preparatory period (from May to October).

At the same time during the experiment in the experimental group (tab. 2) indicators of force of pushing away by two hands ($t=2,93$ statistically significantly improved; $p<0,05$), forces of extensions of the lower extremities ($t=2,50$; $p<0,05$), absolute value of explosive force of hands ($t=3,22$; $p<0,01$), maximum explosive force of feet ($t=5,31$; $p<0,001$), and high-speed and power to an index of explosive force of feet ($t=2,54$; $p<0,05$) why more considerable use of the sets of exercises aimed at the development of power and high-speed and power qualities which in the subsequent will provide high-speed and power potential at the movement on skis with the skating courses promoted.

Table 2

Comparative characteristic of indicators of power preparedness according to polydynamometry at young biathlonists of 14-15 years old of the experimental group at the end of experiment (October) ($n_1=n_2=12$)

№	Indicators of testing	Control group	Experimental group	Assessment of probability	
		\bar{X}_1+m_1	\bar{X}_2+m_2	t	p
1.	Pushing away force by two hands, kg	26,8±1,4	32,8±1,5	2,93	<0,05
2.	Pushing away force by a foot, kg	26,3±1,8	30,7±1,7	1,77	>0,05
3.	Force of extensions of the upper humeral belt, kg/body weight	3,8±0,2	4,2±0,23	1,33	>0,05
4.	Force of extensions of the lower extremities, kg/body weight	4,2±0,27	5,1±0,25	2,50	<0,05
5.	Absolute value of an explosive force of hands, kgm	22,3±0,52	25,1±0,70	3,22	<0,01
6.	Maximum explosive force of feet, kgm	101,4±2,0	116,1±1,92	5,31	<0,001
7.	High-speed and power index of an explosive force of feet, $kg \cdot s^{-1}$	242,2±6,4	266,3±7,00	2,54	<0,05

At biathlonists of the control group statistically significant shifts are received only in an absolute value of explosive force of hands ($t=2,33$; $p<0,05$) and maximum explosive force of feet ($t=3,55$; $p<0,01$) which increase is received for the account of the use of special means of trainings.

Conclusions:

1. The application of the developed complexes for the development of motive qualities (speed, force, high-speed force, coordination of movements) in the experimental group of young biathlonists of 14-15 years old allowed receiving the highest results, than in the control group in indicators: pulling up on a cross-piece

($t=3,04$; $p<0,01$), bending and extension of hands, in lying position ($t=2,59$; $p<0,05$), raising and lowering of direct feet from a deflection on a cross-piece ($t=2,36$; $p<0,05$), long jump from a place ($t=2,75$; $p<0,05$), cross run on 3000 m ($t=2,31$; $p<0,05$).

2. The carried out training process in the experimental group of young biathlons of 14-15 years old allowed raising indicators in pushing away force by two hands ($t=2,93$; $p<0,05$), force of extensions of the lower extremities ($t=2,50$; $p<0,05$), absolute value of explosive force ($t=3,22$; $p<0,01$), maximum explosive force of feet ($t=5,31$; $p<0,001$), and in high-speed power index ($t=2,54$; $p<0,05$), but in high-speed power index ($t=2,54$; $p<0,05$) while indicators only of an absolute value of explosive force of hands raised in the control group ($t=2,33$; $p<0,05$) and maximum explosive force of feet ($t=3,55$; $p<0,01$). Near it the reliable difference between groups is received in an indicator of force of pushing away by two hands ($t=2,46$; $p<0,05$) in interests of the experimental group.

In prospects of **the subsequent researches** the representation of results of influence of the training process for sports results in the competitive (basic) period is planned in the preparatory period.

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Comparative analysis of physical recreation of Chinese youth as a means of Anhui Province sports tourism

Abstract. Purpose: to analyze the recreational facilities of Anhui Province, contributing to the development of the sports tourism in China. **Material and Methods:** analysis and generalization of literature and electronic sources, official web-sites, survey. **Results:** revealed the interest of young people to cultural and leisure activities in Anhui Province and the increase in the number of tourists at different ages. Development of sports tourism indicates an increase in mass and popularity among the population. **Conclusions:** addressing public interest in the development of sports tourism in China leads to the enhancement of the role of cultural holiday in physical development and rehabilitation of youth.

Keywords: sport, tourism, China, UNESCO, recreation.

Introduction. Functioning, mass and development of sport and wellness tourism is due to the system of organization and management. Especially important are the optimal choice of organizational form for the region, in particular, Anhui province (China), where it is necessary to consider the entire range of local peculiarities in the development of sport tourism (tourism opportunities, material and technical base, etc.). The study of the role and types of sport tourism, which determine the effectiveness of recovery of Chinese youth, devoted quite a lot of work [1–3; 6; 7], while existing research in this area were mainly aimed at the study of individual tours in different way influencing the level of health of a person. Sport and wellness tourism has a significant place in modern society. The value of sport tourism, affecting the health of young people is rather high, so the analysis, development and effective development of tourism requires proper scientific justification.

Natural resources of China contribute to the development of sport and wellness tourism, which adapts to the needs of modern Chinese youth. Sport and wellness tourism combined activities that effectively affects the physical and psychological recovery. A substantial core of education in the sports and wellness tourism is the combination of physical and spiritual-moral upbringing.

Purpose: a comparative analysis of recreational facilities, Anhui Province, contributing to the development of sports tourism in China.

Objectives of the study:

1. Based on the analysis of the literature to consider the objects of tourism, Anhui province (China) for the development of sport and wellness tourism among the youth and other segments of the population.
2. Identify objects sports tourism and their importance for the improvement of the population of China.

Material and Methods: analysis and generalization of literature and electronic sources (books, articles, dissertations and abstracts of conference proceedings), analysis of official web-sites, survey.

Research results and their discussion. Anhui is a Chinese province, located in the South-Eastern part of the country, adjacent to the provinces of Zhejiang, Jiangxi, Hubei, Henan, Shandong and Jiangsu (pic. 1, 2). Takes Anhui vast territory, which is almost 1,5% of the total area of China. Land of the province extend 570 km North to South and 450 km from East to West, and its area is slightly less than 140 thousand km². The population of Anhui province has about 67 million people.

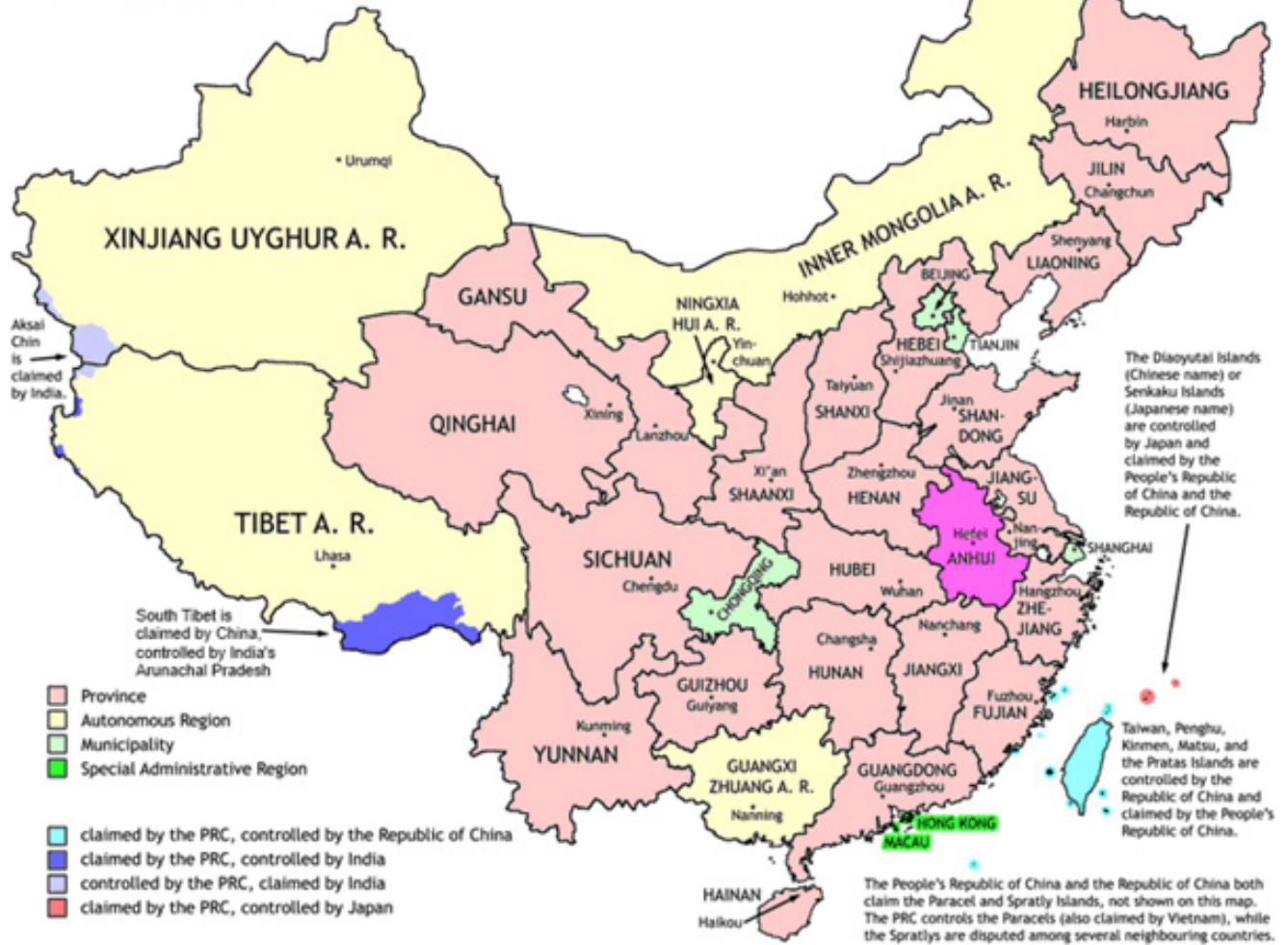
The relief of Anhui is diverse. From West to East have their water river in South of the Yangtze and Huaihe river in the Northern part of the province. Very broad and majestic Huaihe adorns its waters North Anhui. Pool of this river is a huge part of the great plain of China. Not the least noticeable on the river South of the Yangtze river, originating between hills and mountains, and closer to the middle and lower turning on flat terrain.

South of the river the landscape is decorated with majestic mountains. The main mountain ranges of the province are Tangjiashan, Dabestani, Jiuhuashan and Huangshan, and the highest point of one of the peaks of Huangshan mountain called Languages. Height Languagea – 1873 m above sea level. In General, the province

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is divided into the 5 main natural zones: plain along the Yangtze river, the plain Huaibei, mountainous area of Dabashan in the West, rolling hills, Canhui and the mountainous area in the South.

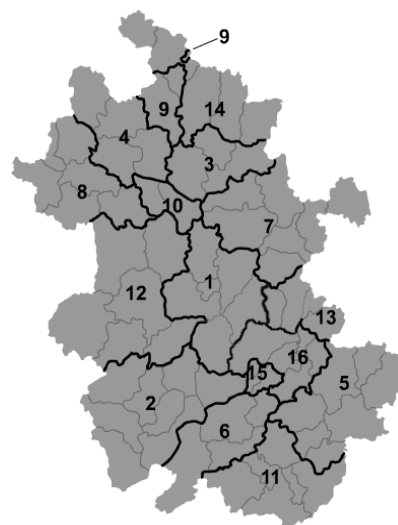
**People's Republic of China (PRC):
Administrative Divisions**



Pic. 1. Administrative division of China



Pic. 2. Geographical location of Anhui Province in China



Pic. 3. Urban district of Anhui Province

Anhui is one of the richest Chinese provinces in terms of tourism resources. There are more than 290 different tourist attractions, from state to local level. These include 5 state, a huge area, landscaped areas, 3 historical and cultural settlements, 9 most important for the province of cultural monuments, which are under the protection of the authorities, 3 large state reserve, 23 Park area, as well as mountain ranges Jiuhuashan and Huangshan, which is the tourist centers of the southern part of the province. Areas of Anhui wonderfully combine with panoramic mountain views, colorful valleys of the rivers and a large number of monuments of culture. Jiuhuashan is considered one of the four most famous Chinese Buddhist mountains, Huangshan attracts travelers from around the world with its bizarre stones, warm springs, sea of clouds and big beautiful pine trees. Lungshan long been a center of pilgrimage for Taoists, and located near the river Sinanitsa and Taiping lake, included in the gallery of painting “rivers and mountains”. In Anhui are many well-preserved ancient architectural monuments.

The province is divided into 16 urban districts (pic. 3): Anqing, Bozhou, Bengbu, Lu’an, mA’anshan road, Suzhou, Xuancheng, Tongling, Wuhu, Fuyang, Huaibei, Huainan, Huangshan, Hefei, Chizhou, Chuzhou. The district, in turn, are divided into 43 districts, 6 cities of County level and 56 counties.

The main attraction of Anhui province, a picturesque mountain Huangshan (Yellow mountain). Huangshan, a UNESCO world heritage site and have an internal rating of AAAA (highest). Huangshan is rightly considered one of the most beautiful mountains in China and the world, they are sealed in many Chinese picturesque and poetic works. In the mountains is more than 140 places available to visit, mountains attracts more than 15 million tourists annually. A popular event is the sunrise on the top of one of the mountains.

Major attractions and cultural sites of Anhui province are as follows:

1. Memorial Bogun. Memorial Bogun is located on the hill of Fragrant Flowers in Baohe Park. The memorial hall has a statue of Lord Bao, and stone reliefs, cultural relics and other materials. Next to the hall there is a pavilion, which is located inside the well is called the Well’s Integrity.

2. Mountain Huangshan. Huangshan is located in the South of Anhui province. The name of the mountain is translated as “yellow mountain”, it appeared in 747, the Area of mountain Huangshan district is 250 km². The mountain is one of the most famous natural attractions of China and is widely known throughout the world. The main splendor of mount Huangshan rocks and create beautiful peaks. Among them the most popular 72 peaks. The three highest peaks – Lotus peak (1873 m), a Brilliant peak (1841 m) and the summit of the Celestial Capital (1810 m). Another mysterious force attracts people from all over the world – famous hot springs of mount Huangshan. Already used by over 1000 years. They never dry up and overflow. The water temperature in 42°C ideal both for bathing and drinking. Water is saturated with carbon dioxide, which gives a noticeable effect in the treatment of diseases of the digestive system, nervous system, blood circulation. Tourists can climb to the top of the snow Goose by cable car. The project to install the cable car participated Japan and China. It runs at 773 m above the ground. National Park Huangshan was awarded the Melina Mercouri for contribution to the protection of natural attractions. In 1990, Huangshan was listed as a world heritage site by UNESCO. Since then, the local administration was undertaken numerous efforts to preserve natural landscapes.

3. Mount Jiuhua. Mount Jiuhua is one of the 4 sacred Buddhist mountains in China. The other three – Wutai in Shanxi province, Emei in Sichuan, and Botosani in Zhejiang. All year round Jiuhuashan was visited by strangers. It was called “The Magic city of Buddhist Kingdom”. But to present days, preserved on mount 78 monasteries with 1500 images of Buddhas. The temple of Sweet Dew, one of the 4 Buddhist temples on mount Jiuhua, is located mid-way to the top. Now here is a Buddhist school. Area mountain area Jiuhuashan is 120 km². From 99 tops of the highest peaks are considered Tiantai (1,325 m), Lianhua, Tianzhu, Sivan. The greatest height reaches mount Sivan (1342 m). Mountain Jiuhua is a tourist attraction and a sacred place for Buddhists for over 2000 years. On the rocks by 1996, preserved only 40 original label.

4. Precious hall Rebirth of Bodhisattva. Precious hall is located on the top of Shangguan, to the West of the monastery Huachansu. Here is a pagoda Rebirth. The pagoda was built to conduct services. And the place was called the Hall of rebirth. Inside the pagoda is 8 tiny rooms, which houses more than 100 statues of the Bodhisattva Salvation. In the mountains in 94 monasteries currently home to about 600 monks and nuns.

5. The bridge over the Yangtze river «Uhu». The bridge width is 21,5 m. In this area the width of the river reaches 2192,7 m. This is the second two-level bridge across the Yangtze river in the East. The first bridge over the Yangtze river in Nanjing.

6. County Sousan. County Sousan known as the «underground Museum». There are more than

160 cultural relics and historical sites. In the Museum district contains more than 6000 excavated objects that belong to different dynasties. There are articles of gold, silver, bronze, iron, ceramics, jade.

7. Huntung and Sidi. In 2000 UNESCO made the village of Hunchun and stay in the world heritage list. Near the village of Hunchun is the mountain Laihanen shaped like a cow's head. Here ancient trees. Another attraction of the village is the water system, which is used for hundreds of years. Narrow channels are connected all the houses of the village. Water system suffered 2 fire. And with each generation it was getting better and better.

Tourism is the most effective means of meeting recreational needs, as it combines various types of recreational activities – health, cognition, restoration of the productive forces of man. Tourism is an integral part of health, physical education, the means of spiritual, cultural and social development of the personality.

Statistics shows that most of the tourist-recreational mobility are people aged 30 to 50 years. Not less than 1/5 of all the tourists are young people who are financially sufficient, have a good education and strive to satisfy a kind of educational interests, lead an active process of self-discovery, self-expression. The results of the survey showed that the older generation often choose travel routes with moderate physical exercise, but definitely try to visit the foot of Huangshan and Jiuhuashan, monasteries, memorial Bohun and County Sousan and famous village of Hunchun and Sidi. Young people prefer a more active view of the tourist routes in the vicinity of mountains and rivers.

Conclusions. In China developed many systems of physical training that includes methods and means of active resistance to adverse factors of environment, sustain and enhance human performance.

The leisure activities of young people is significantly different from leisure other age groups because of the specific needs and inherent socio-psychological characteristics of the “youth of consciousness”, heightened emotionality of perception and reactions. In the basis of its content not only entertainment, but also solutions to life's problems. Value orientation on cultural and leisure activities depend on the satisfaction of personal needs. A distinctive feature of youth tourism is the fact that teenagers are the most unassuming socio-demographic group.

Prospects for further research. The involvement of Chinese youth to the knowledge of the proximity of Anhui province will be able to increase recreational activity in the context of sport tourism all over China for the population of any age that will improve physical fitness and vitality of people. Further studies will help to establish the importance of tourism for young people with physical training in the school and higher education institution.

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Personal development of junior students from deprivation of sensory systems in special boarding school

Abstract. Purpose: to identify ways and a content of the personal development of younger pupils with sensory deprivation in the process of adaptive physical education (APE) of a special boarding school. **Material and Methods:** the content of the personal development of younger pupils with sensory deprivation systems was opened with the help of the analysis and synthesis of the literature. **Results:** defines the purpose and components of personality formation and primary school children ways for effective student-centered approach to raising a child with special needs and abilities. **Conclusions:** outlines ways to implement the goals and objectives of personal-centered approach in the process of adaptive physical education in the primary school children with sensory deprivation in a special boarding school.

Keywords: deprivation, sensory system, personal development.

Introduction. The special general boarding school faces a problem of a search of ways of the improvement of study and education of persons with deprivation of sensor-based systems for the purpose of the solution of important pedagogical tasks at the present stage of its development. The attention of a special school is directed on updating of contents and technology of education which changes emphasis on a formation of deeper, than earlier, differentiation and an individualization of the process of study, to the development of vital competence and creative abilities, social adaptation of children (T. A. Basylova, E. L. Goncharov, A. G. Zikeev, T. S. Zykova, O. I. Kukushkina, I. Y. Levchenko, V. I. Lubovsky, L. I. Plaksina, E. G. Rechitskaya, I. L. Solovyova, etc.).

The corectional orientation of the teaching-educational process is one of the principles of the work at special boarding schools for children with deprivation of sensor-based systems, the main theoretical concept of which is studying and understanding of features of the development of a child with limited opportunities, its difficult forming system of the mental activity which displays an individual structure of defect and compensatory processes [1; 2]. In the researches of R. D. Babenkova (1983), I. S. Beritashvili, N. G. Baykina (1992), B. V. Sermeyev (1990), A. A. Dyachenko (2010); O. A. Yurchenko (2013); O. A. Afanasyeva (2014) features of the development of children with deprivation of hearing and sight, their difference in comparison with healthy coevals are noted. Violation of visual and acoustical function limits the personal development and interpersonal contacts with age-mates that leads to the impoverishment of social experience of communication, imperfection of the interpersonal relations; slow rate of the development of social perception and reflection [8–11]. The younger school age – time when to put is improved by motive abilities and to develop personal qualities, become more independent, self-sufficient though the behavior of children of younger school age with special requirements and differs in a situativeness, strong dependence on a life situation (K. G. Korovin, 1995).

In this regard the importance of studying of a problem of the personal development and the interpersonal relations of children with deprivation of sight and hearing grow in a special boarding school [3; 6; 7; 9; 10].

Communication of the research with scientific programs, plans, subjects. The research is carried out according to the Built plan of the RW in the sphere of physical culture and sport for 2011–2015. The Ministries of Education and Science of Ukraine behind a subject 3.7 “Improvements of biomechanical technologies in physical training and rehabilitation taking into account specific features of a motility of a person”, number of the state registration is 0111U001734.

The objective of the research: to define ways and the content of personal development of a younger pupil with deprivation of sensor-based systems in the course of adaptive physical training of a special boarding school.

Methods of the research: analysis, generalization, systematization of references from the studied problem.

Results of the research and their discussion. It isn't simple to create necessary movement skills and abilities, and to bring up and to develop the identity of the child capable to the creative activity to self-development

and self-improvement at the modern special boarding school before the teacher on physical training a task is set [3; 8]. Presently the special school sees the main objective in education of the pupil as unique identity; in the creation of optimum conditions for its formation, personal development; in support on the way of self-determination and self-realization.

Emotional violations (anger, fear, confusion, alarm), violations of behavior (negativism, aggression, cruelty to coevals), quick frustration (hyperactivity, psychomotor violation, concern, nervous tics, spasm of an eyelid), violations of speech (autism, indistinctness, violations of facility of speech), addictions (sucking of a finger, biting of nails) are more shown at younger pupils with deprivation of sensor-based systems. A number of authors notes that the brake type of nervous system over exciting prevails at children with limited opportunities of sight and hearing of children (L. V. Sharipov, V. I. Sultanmurat, 1965; V. M. Rachmaninov, 1988). Changes of visual and acoustical perception are caused by the decrease in motive memory, any attention, especially at pupils of younger school age (T. V. Rozanova, 1978; A. V. Gogoleva, 1981).

At the same time negative personal education of a younger pupil with deprivation of sensor-based systems that appears at this age, is undesirable if it will not be eliminated in time, the prerequisite develop for different negative deformations in the development. Therefore it is important that the special place was taken by the work directed on the prevention and perhaps earlier recognition of negative personal properties of a child, on timely elimination of provocative conditions of the development of negative traits of character in the educational process of younger pupils with limited opportunities of sight and hearing.

The productivity of this work depends on the level of psychological competence of a teacher in many respects, on as far as he is guided not only in practical, but also theoretic-methodological problems of the personal development of children. Traditionally the personality is defined as a rather resistant set of mental properties of a person that appears from inclusion of the individual in space of the interpersonal relations (V. V. Davidov, 1996) in results. These theoretically right ideas of the nature of the personality were rather impressionable, especially in their practical application. However a similar interpretation of the concept "personality" unfairly long formed the basis for the manipulative forming pedagogical practice of a native school. As exit from this situation the concept which actively develops in modern pedagogics, personally focused to an approach in study which essence consists in an extract of the correct knowledge hidden in a person (G.C. Yakimanskaya, 2000).

Within this innovative concept the task of a teacher consists not in creating a spiritual structure of a child on some, let and to noble samples, and in creating conditions for the formation of the identity of each child according to her individually psychological features. In other words, such conditions under which the identity of a child who develops in the course of personalisation (formation), wouldn't block its essence (a kernel of the personality, identity, feature, the universal account) aspiring to an embodiment and, the main thing, wouldn't conflict to it. Scientists of the branch [2; 4; 5; 9] note that the problem of the creation of optimum conditions for the achievement of a personal social maturity, education, ensuring social activity of children with deprivation of sight and hearing has to be solved with the application of an integrated approach to a combination of the process of study, education and classes by physical exercises.

During this period the unconditional acceptance of the child with limited opportunities and special requirements is extremely necessary because in this case the adult refuses the manipulative forming pedagogics. From this relation the understanding of the purpose of personally-focused approach grows to the child – not to create and even not to bring up, and to find, to support, to develop the person in the person and to put in him mechanisms of self-realization, self-development, adaptation, self-control, self-defense, self-education and others, necessary for the formation of an original personal image and worthy human life for dialogical interaction with age-mates, the nature, the culture, the civilization (G.C. Yakimansk, 1993; 1999). It means that the contents personally-focused approach has to include everything that is necessary for the child with special requirements for the formation and the development of own personality, and to have the following components: axiological, cognitive, active-creative and personal.

The axiological component aims at the introduction of pupils to the world of values and providing them help in a choice of the personally-significant system of valuable orientations to them, personal contents. The cognitive component of the contents provides with scientific knowledge of the person, culture, history, nature as to a basis of the spiritual development. The active-creative component promotes the formation and the development in pupils of various ways of activity, creative abilities necessary for self-realization of the personality in knowledge of the world, work, culture, art and other kinds of activity. The personal component provides to

know itself, the development of reflexive ability, mastering ways of self-control, self-improvement, moral and vital self-determination, forms a personal position. The personal component is systemcreative in the contents of the personally-focused approach, and thus significantly differs from the traditional contents systemcreative component of which admits cognitive (V. P. Zinchenko, 1991).

Education of the identity of the child, that is her moral formation which doesn't need imposing and learning by heart any rules built in a certain sequence is key concepts of the individually-focused approach; the term "self-development" entered by the pupil Pestalozzi F. Frebel (1782–1852). There is a need of the personality for self-actualization from self-development positions as main driving force of the development of the personality, according to Charlotte Byuler (1983-1974). However directly the term "self-actualization" began to be used rather recently. In psychology the concept of self-actualization appears thanks to Abraham Maslou's works (1908-1970, the USA). He put a set of contents in this concept, but the most significant is: self-actualization is an aspiration to the creation, to self-actualization of what keeps within quality, potential.

Self-actualization is a desire of a person to self-actualize, namely – his aspiration to become that whom he can be. It is the full use of talents, abilities, opportunities and so on by a person. Maslou represented a self-actualized person not as an ordinary person, to which something added and as an ordinary person at which nothing is taken. Thus, the need of the younger pupil with deprivation of sensor-based systems in self-actualization, self-realization and creativity develops in APE by means of a number of ways by means of the individually-focused approach, and the need for self-actualization acts as a requirement of "growth" unlike requirements of "deficiency" that is extremely important for the child with special requirements (L. P. Kostjuk, 1995; V. V. Serikov, 1994; G. K. Selevko, 1998;).

According to A. Maslou, the tendency to self-actualization is the essence, the center of the personality, it is an aspiration of the person constantly to embody, realize, and subject himself, abilities, essence. Having analysed features of many people, Maslou allocated characteristics of self-actualization: more effective perception of reality and more comfortable relations with it; acceptance of itself, others, nature; spontaneity, simplicity, naturalness, centerness on a task (problem centration); some disconnect and need for loneliness; autonomy, independence of cultural carriers; constant freshness of feeling of participation, unification with others; deeper interpersonal relations; democratic structure of character; distinction of means and purpose, good and evil; sense of humour; self-actualized creativity. Self-organization – is a property of any personality to self-development by means of completion, "peeling", from himself new more vital structures for the purpose of self-improvement and personal growth and development (D. I. Orlov, 1995) is one a quite more important concept of the personally-focused approach in physical training of younger pupils.

Conclusions. The younger school age – is a favorable stage for the formation of the base of the mature personality with deprivation of sensor-based systems. However unevenness of the development of strong-willed qualities and differences in strong-willed regulation of separate kinds of activity, even at the same child are peculiar to children of this age. The purposeful development of the qualities defined as key concepts (self-development, self-actualization, self-organization), allow defining ways of the realization of the purpose and tasks of the personally-focused approach in APE of children of the younger school age with deprivation of sensor-based systems which are that a real interaction between the teacher and the pupil is possible only when it is built on the basis of reference points for the general creativity in study and education that create external nutritious for the environment of manifestation of internal sources of self-development and self-organization, and not just on the basis of usual methods of transfer of knowledge and the formation of experience of behavior.

Prospects of the subsequent researches consist in the development of a program of the correction of the personal development of a younger pupil with deprivation of sensor-based systems by means of adaptive physical training in the course of study at a special boarding school.

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Non-Olympic sport as a social institution at the level of statehood

Abstract. Purpose: to identify and disclose the particular social institution of non-Olympic sports. **Material and Methods:** to determine the goal axiomatic method used and the method of system analysis at the theoretical level. **Results:** the structure and activities of non-Olympic sport social institution at the level of state, which includes: social norms, rules and laws; specialized agencies and institutions; community organizations; system of training; social control are presented. The features of the functions of a social institution of non-Olympic sport, such as: relational, regulatory, political and ideological, integrative, transparent, communicative ones. **Conclusion:** non-Olympic sport in Ukraine has emerged as a social institution that has its autonomy, is subordinated to social laws and performs certain functions.

Keywords: non-Olympic sport, social institution, structure, activity, functions.

Introduction. At the end of the XIX century and the beginning of the XX century sport gradually occupies one of the leading places in a social system and becomes its phenomenon. It acts as an indicator of a level of the development of the society and its culture. Besides, it is used at an opportunity in policy, economy and other areas of life. Sport, on the one hand, defines as a set of achievements of the society in a creation and a rational use of special means, methods and conditions, for the purpose of the purposeful physical and spiritual improvement of a person. On the other hand – it consists in a way and lifestyle of a person concerning his activity which is provided with characteristic peculiar features of a self-expression according to norms and values of a concrete society.

L. I. Lubysheva, N. Y. Mazov, L. P. Matveyev and others note that sport is the sociocultural phenomenon which as much as possible logs in the social relations and is caused by the social and economic development and related factors [4–6]. At the same time, considering that Non-Olympic sport is a part of sport, it acts as a “product”, “goods” and “demand” of this phenomenon which is caused by moral, ethical, creative inquiry of a person, directed on a formation of outlook and a certain public position, promotes education of morally strong-willed, physical, mental abilities of the personality for the purpose of the harmonious development.

The analysis of publications showed that Non-Olympic sport has the features which emphasize it as a socio-cultural phenomenon, it is possible to carry to them: sportization [3], aspects [1], specificity of tasks [2], scientific perspective of the development [7; 9] and so forth.

V. O. Solovyova, O. V. Borisova (2013) specify that Non-Olympic sport got the social development, having taken a certain place in the social society which promoted the formation of social institute which is caused by the specific activity and to which enter social groups are defined [9]. However it should be noted that its structure and functions aren't opened and studied for today.

Communication of the research with scientific programs, plans, subjects. The work is performed according to the subject 2.6 “Theoretic-methodological bases of the improvement of the training process and the competitive activity in a structure of long-term training of sportsmen” of the Built plan of the RW in the sphere of physical culture and sport for 2011-2015 and a direction of researches of Dnepropetrovsk state institute of physical culture and sport behind the subject “Historical, organizational-legal aspects and theoretic-methodical principles of Non- Olympic sport in Ukraine and on the world space”.

The objective of the research: to define and to open the structure and functions of social institute of Non-Olympic sport.

Material and methods of the research: an axiomatic method and a method of the system analysis at the theoretical level were used for the definition of a purpose.

Results of the research and their discussion. The analysis of the research literature showed that the social institute is historically formed, created, purposeful and rather resistant form of the organization of a system of communications and social norms which unites significant social values, satisfies social, economic, political, cultural and other requirements of the society. Social institutes their opportunities influence behavior (instincts)

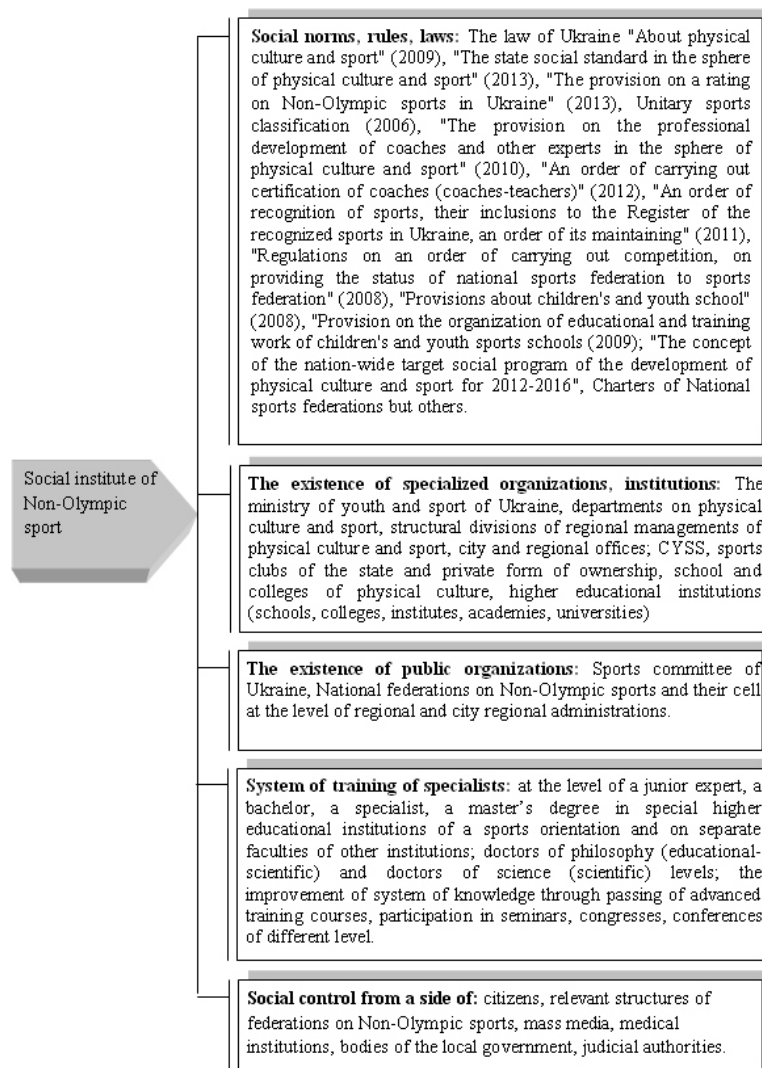
of people on the basis of the established rules.

For the first time a term "social institute" was entered in a scientific turn by the English scientist Herbert Spencer in the second half of the XIX century who, analyzing a structure of the society, in the majority on an ethnographic material of evolution, allocated six types of social institutes: family, educational, political, professional, church and industrial [8]. However during the activity of a person in the society who first of all submits to the political system, certain types of the social activity appear, thus according to it, legal norms that govern and concentrate it. It is possible to refer also Non-Olympic sport to such activity.

Traditionally social institutes are characterized by a citizenship and a particularism first of all, thus are based on the rigidly registered rules of a behavior and pedigree interrelations, and the process of their development becomes more centralized behind the functions and less rigorized in rules and in the context of a behavior [8; 10; 11].

The social system of Non-Olympic sport promoted the formation of social institute which is resistant and has an organized form of the activity of groups of people which provides a functioning of the public relations in Non-Olympic sport and influences its development at the level of the society and the personality.

The social institute of Non-Olympic sport creates favorable conditions for its development, gives an opportunity to satisfy requirements and interests of all members of the society and regulates the activity within the social relations, providing these resistances of public norms of life and integration of aspirations to the improvement.



Pic. The structure of social institute of Non-Olympic sport at the level of the statehood

The activity of social institute of Non-Olympic sport is defined: a set of specific norms which regulate the corresponding types of behavior, integration of its socio-political, ideological, valuable structures of the society which allowed to legalize formally legal basis of its activity; the existence of public institutions and public organizations which carry out the regulatory base and the state orders; the formation of system of training of specialists which provide a social field of the activity of institute; the realization of social control as a criterion of job evaluation (pic). However the activity of institute depends on the influence of endogenous factors, what societies connected with social changes, cultural and personal systems according to accumulation of new knowledge and exogenous factors which are connected with changes in the middle of the structure of institute for the purpose of overall performance, the solution of the set purposes and tasks of a certain social group.

It should be noted that social institute of Non-Olympic sport is not only the set of norms, institutions, material values and the monitoring system, but also the complete system of standards of behavior of particular persons in typical situations which are standardly settled in the certain legitimate and authorized system.

The main functions of this institute are: *relational* which carries out a role activity in structural systems of the public relations in Non-Olympic sport; *regulatory* is connected with a reproduction of the public relations which, on the one hand, provides an activity of structures within a legal system according to the standardized behavior and relationship between their members, on the other hand – defines an admissible framework of independence of members and their actions, in relation to norms of the society and the mechanisms of a social control defined at the level of the state; *ideological and political* which are caused by an ideology of the development of Non-Olympic sport and by the political directions and actions according to the acceptance of the legislative and program-regulatory base concerning its existence, functioning and activity; *integrative* which is connected with social roles of structural units of institute, their interrelations and mutually responsibility, concerning ensuring interests of a social society of rather Non-Olympic sport on the basis of consolidation, mobilization, confrontation and coordination of actions; *transpirative* which allows to form the reliable potential of experts in different structural divisions of institute (a head, a sports manager and a marketing specialist, Presidents and Vice-presidents of public organizations, coaches on sports, organizers on sports and mass work but other); *communicative* which is caused by a specific activity relatively to the distribution of objective information not only for the purpose of a control of the observance of norms, but also for the interaction of all structural divisions.

Conclusions. Non-Olympic sport acts as the sociocultural phenomenon because it has a political and an economic value, influences theformation of cultural, educational and educational values. The intensive development of Non-Olympic sport in Ukraine promoted the formation of its social institute which has its autonomy and includes at itself social norms, rules, laws, the existence of specialized organizations and institutions, the system of training of specialists and social control, carrying out thus relational, regulatory, ideological and political, integrative, transpirative, communicative functions.

Prospects of the subsequent search of scientific research is studying and granting features of the integration of Non-Olympic sport into different fields of the activity of a person and its influence on the development of the international sports movement in general.

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Reducing treatment by means of physical rehabilitation after lower limb amputation

Abstract. Purpose: *the main approaches to the assignment of physical rehabilitation restorative treatment after lower limb amputations. Material and Methods:* *theoretical analysis and synthesis of modern scientific and methodological literature data on methods of comprehensive rehabilitation after lower limb amputations. Results:* *the features of the application of physical rehabilitation after lower limb amputations, tasks and presents the main approaches to the appointment of medical physical training, therapeutic massage and physical therapy in preparation for prosthetics. Conclusions:* *demonstrated that therapeutic physical training, therapeutic massage and physical therapy are effective means of physical rehabilitation of patients after lower limb amputations.*

Keywords: *injury, rehabilitation treatment, therapeutic physical training, physiotherapy, massage.*

Introduction. Nowadays the increase in number of soldiers of anti-terrorist operation of young and middle age is an actual medico-social problem in Ukraine who needs a recovery treatment and a long physical rehabilitation as a result of military operations and a military trauma which will allow to return them to full-fledged life [7].

In the wartime injuries of the musculoskeletal apparatus attached the main place at the application of the mine and explosive devices which are the reasons of permanent violations of functions of an organism which conduct to disability. Injuries of the lower extremities prevail among injuries of the musculoskeletal device (60%), the heaviest of them are destructions, typical for mine and explosive wounds, and separations and, as a result, an amputation of the lower extremity. That fact is also important that disability is established at people of the efficient age who had rather high quality of life before they had trauma, were socially demanded and active. Therefore their rather high harassments on integration into the society have to be considered when carrying out a complex rehabilitation of injured military operations and a military trauma [12].

Medical rehabilitation is the leading direction of a complex rehabilitation of military as a result of military operations and a military trauma which transferred an amputation of the lower extremities [7]. Medical aspects allow the correct an assessment of possibility of renewal of physical activity: a competent carrying out of different types of a recovery treatment for the purpose of the formation of a stump and possible elimination of its defects and diseases, and also renewal or compensation of the lost functions; the correct purpose of a design and a choice of a complete set of an artificial limb for primary prosthetics.

Conservative methods of treatment are a component of a complex recovery treatment of victims after the amputation of the lower extremity that includes: medical physical culture, medical massage, physiotherapeutic procedures [1]. The consecutive and purposeful use of physical methods of treatment allows making active as much as possible patients, most fully to prepare for prosthetics and to teach the use of prosthetic and orthopedic products [2].

Communication of the research with scientific programs, plans, subjects. The work was performed by the priority direction, on the law of Ukraine "About the priority directions of the development of science and technique" by the number 3.5. "Sciences about lives, the newest technologies of prevention and the treatment of the most widespread diseases".

The objective of the research: to consider the main approaches to the purpose of means of physical rehabilitation in a recovery treatment after the amputation of the lower extremities.

Material and methods of the research: the theoretical analysis and synthesis of modern scientifically methodical literary data relatively techniques of complex rehabilitation after the amputation of the lower extremities.

Results of the research and their discussion. One of the leading places in the system of recovery treatment of the lower extremities which were injured after the amputation borrows the medical physical culture (MPC)

[6]. MPC are applied according to clinical and anatomic-functional features of the truncated extremity, according to the motive status of a patient during preparation for prosthetics of means of. During the preparatory period, irrespective of the amputation level, such main *tasks* are solved: the determination of the level of physical activity; the increase of the general tone of an organism; improvements of circulation of the blood and lymph in a stump; the development of force of the truncated muscles of a stump and muscles the high set segments of an extremity; the elimination of contractures and rigidity in joints of the truncated extremity; the development of force of muscles of a trunk and shoulder-girdle; the training of balance and vestibular function; the development of coordination abilities; the improvement of basic function of hands; the development of force of muscles of the kept extremity after unilateral amputations [2].

Gymnastic exercises are the most widespread form of medical physical culture; they own a broad spectrum of the activity on a human body depending on a clinical state. The phantom and impulsive gymnastics, exercises for strengthening of muscles of knee and coxofemoral joints, for the development of coordination of movements and function of balance belong to special exercises. The performance of special exercises is aimed at the development of ability to the differentiation of muscular efforts and any relaxation of muscles. The participation of separate muscular groups in one movement is important when performing exercises. Exercises are carried out in the static and dynamic modes. After the amputation at the level of a hip exercises are necessary which provide an influence on extensors of a coxofemoral joint, after the amputation of a shin – extensors of a knee joint, after the amputation of a foot – extensors of a foot [4,6].

Phantom and impulsive gymnastics – is the isometric tension of muscles of a stump by an imaginary reconstruction of movements by the absent extremity segment. It is one of the few types of training directed on the increase of the function of the truncated stump muscles. The assimilation of this type of gymnastic exercises is demanded by a combination of tension of muscles of a stump to the movements in the kept joints. In the course of a study of tension of muscles of a stump can be followed by bending and extension in the corresponding joint of the kept extremity. The phantom and impulsive gymnastics improves a circulation of the blood and lymph in the truncated muscles, increases exchange processes, and fixes stump muscles. The tension of the truncated muscles has to be dosed by effort and speed. A patient has to achieve the maximum tension, hold it 1–2 s after that it is necessary to apply the maximum relaxation. It is necessary to acquire tension that of one, other muscular group, for example, flexors and extensors, to strain the truncated stump muscles in combination with the performance of movements by all extremity diversely and, in case of need, to keep tension at the fixed position of an extremity under different corners in the relation to a trunk. The phantom and impulsive gymnastics is carried out during 5–10 min, at first individually, then in groups [9; 11].

After the amputation at the level of a hip of tension of the truncated muscles of its back surface it has to be combined with the extension of a stump in a coxofemoral joint. The tension of the truncated muscles has to be dosed by effort and speed of the movement of a stump. The extension of a stump are at a tension of the truncated muscles with different speed and force especially important because it helps to master walking on an artificial limb in the subsequent [2].

Exercises for muscles of the kept extremity. The highest loading is to the kept extremity, than to the amputation therefore to its muscular and copular device the increased requirements are imposed. The lack of purposeful preparation of the kept extremity and the increase in loading are negatively reflected in its functional state. There are joint pains, shin muscles when walking strain, the basic surface of foot is overloaded. In this regard special exercises are used for strengthening of the muscular and copular device for the prevention of a flat-foot. The attention to the development of possibility of any relaxation of muscular groups which needs to learn in different starting positions is paid: lying, sitting, when walking on crutches. Relaxation of these or those muscular groups is reached by means of joggle, swing exercises and exercises on extension of muscles. It is necessary to achieve any relaxation of the kept extremity when walking on crutches and further on an artificial limb, and also a free, not tense situation of a foot. An additional easy plantar bending of a foot promotes the reduction of tension of its muscles [5].

The special important active exercises are directed on the differentiated mastering of the whole scale of muscular activity. It is a study by the minimum muscular tension, renewal of ability to dose muscular tension, the movement speed, the amplitude of the movement and other physical quantities of the movement. Much attention is paid active visual, proprioceptive, acoustical and to other types of control from a patient. Study by purposeful motive acts include in the set of exercises. Each action is carried out at first passively, under visual control of a patient, then 3–4 times actively on a healthy extremity. Further the active movements carry out at the same time both extremities with correction of the movement in the affected extremity. After that the set

movement is done only by the affected extremity. In some cases it is easier to carry out the movements both extremities and alternately healthy and struck not at the same time. Easy actions combine with more difficult [4; 10].

Study to walking – is a difficult process, which progress in many respects depends on the correct stage-by-stage selection of the exercises severely specific to clinical physical action at a specific patient. Special exercises are supplied to the elimination of violations of the coordination of movements. Training of the connected actions in different joints of hands, feet and trunks concerns to them, at the implementation of such important motive acts, as walking, turns on a place and in the movement, movement on the crossed plane (a support inequality, descent and rise, on a ladder, reduction of the plane of a support but other), performance of household and labor purposeful actions. Exercises for renewal and strengthening of functions of balance and special vestibular gymnastics are used [6].

Exercises for muscles of a trunk and a shoulder-girdle. The special exercises are applied which are aimed at the development of force of the weakened muscular groups are turns of the top and lower half of a trunk sideways of the truncated extremity for the prevention of violations of a bearing, elimination of an inclination of a hip, in the frontal plane. Exercises for lumbar muscles – are hip inclinations forward, on the right, on the left. The attention of the development of the basic function of hands is paid that is necessary for providing a support on crutches or reeds [9].

Exercises for the development of coordination abilities. The performance of these exercises promotes the renewal of coordination of movements of the kept extremity and stump, the coherence of movements of different links of the musculoskeletal device. Exercises are carried out in different starting positions, with subjects (dumbbells, stuffed balls, gymnastic sticks) and without them. Imitation of walking in situation can be used, lying on a back, sitting with the movements of hands [8].

Exercises for the improvement of a functional condition of a stump, the development of dynamic and static force. These exercises are carried out in different starting positions: lying, sitting, standing (after the amputation of one extremity), lying and sitting – after the amputation of both extremities. The attention is focused on the development of force of an extensor stump and wire muscles after the amputation at the level of a hip. Simultaneous participation of these muscular groups is important at the performance of movements because it facilitates a further use of an artificial limb. The most intensive influence on these muscular groups needs to be carried out after the amputation of both hips, combining the extension with reduction and internal rotation of a hip [6].

It is necessary to fix extensors and flexors of a knee joint after the amputation at the level of a shin. The attention is focused on those movements which are necessary when walking on an artificial limb. For example, walking imitation is recommended, lying or sitting after the amputation of both shins. The tension flexors of a shin and relaxation of a gastrocnemius muscle randomly increase at the extension in a knee joint; the reduction of a gastrocnemius muscle is carried out when bending in a knee joint. The movements are carried out in turn by each stump. The maximum reduction of muscles is necessary to rotate with their relaxation when performing exercises. Exercises are excluded with a support on a stump, in order to avoid its traumatization in the presence of trophic ulcers, standing out of bone creations [11].

Along with gymnastic exercises the elimination of contractures and rigidity in joints is carried out. The method of a manual redressment is used for this purpose. At the contractures of a coxofemoral joint expressed the bending manual redressment is carried out in situation, lying on a back, thus the kept extremity is bent in a coxofemoral joint; by-pass contractures – in situation, lying on one side on the party of the kept extremity. At bending-drain contractures the patient lies on a back, redressing the movement are directed back and inside, thus the methodologist holds the patient's hip from shift. The redressment can be carried out in situation, lying on a stomach at the insignificant or moderate restriction of extension in a coxofemoral joint. Thus one hand the methodologist squeezes the patient's hip to a couch surface, another covers from below a distal department of a stump and carries out the maximum extension in a coxofemoral joint. Carrying out an annual redressment of a stump demands considerable physical efforts and time. In chamber the patient has to sleep on a rigid bed, more often lie on a stomach, in situation on a back has to try to squeeze a hip stump to a mattress independently or to use additional weight [3; 4].

The manual redressments which are carried out in different starting positions are also carried out t contractures of knee joints, near gymnastic exercises – lying on a stomach, on a back. After their end it is expediently to record the reached result by means of different ortezes. The treatment of contractures is most effectively in combination with physical therapy, in particular, thermal procedures [11].

Physiotherapeutic treatment at a stage of preparation for primary prosthetics. In practical work medical

physical factors are widely used natural (mineral waters and therapeutic muds) and artificial (electrotherapy, light therapy, magnet-laser therapy). It is predetermined, first of all, by that physical factors are natural, physiologic irritants for a human body. As a rule, conservative treatment has a complex character; physical factors are applied in combination with medical physical culture, sports, swimming and other means of kinesitherapy. When using physiotherapeutic procedures the principles of sequence, following adhere, to complexity and multi-staging of treatment which provides the achievement of the greatest possible efficiency and the reduction of terms of treatment and primary prosthetics.

Massage. The use of medical massage prevails from numerous types of massage in the treatment and rehabilitation of disabled people. Dot, segmental, vibration or hydromassage can be applied together with it [6; 7].

Conclusions:

1. The typical wounds of the musculoskeletal apparatus is the destruction and separations of the lower extremity which result in disability of soldiers of the young age at the application of the mine and explosive device in the wartime.

2. The complex recovery treatment allows making active as much as possible the patient, to prepare for prosthetics and to teach the use of prosthetic and orthopedic products after the amputation of the lower extremity.

3. The most effective remedies of physical rehabilitation is medical physical culture, medical massage and physiotherapeutic procedures among conservative methods of the recovery treatment.

4. The conduction of medical rehabilitation actions will give the chance more quickly to carry out return to full-fledged life of young people including the participation in training and competitive process of sportsmen with limited opportunities.

Prospect of the subsequent researches is the introduction of an integrated approach to the creation of the program of physical rehabilitation for patients after amputations of the top extremities.

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Possible ways of cooperation commercial institutions of physical training and sports with the subjects of services

Abstract. Purpose: study and identification of the most promising ways of cooperation between institutions of physical culture and sports of various forms of ownership with the subjects of the service sector in order to attract new consumers of sports and sports services. **Material and Methods:** general scientific (analysis, comparison, generalization), sociological (interview), expert evaluation (n=3). **Results:** possible ways of cooperation commercial institutions of physical training and sports with travel agencies. **Conclusion:** it is proved that the most perspective ways of interaction is to create a reciprocal system of bonuses and accumulative certificates.

Keywords: institutions of physical training and sports, interviews, market research, sports and sports services.

Introduction. The problem of the increase in sale of physical and sports services of institutions of physical culture and sport of different forms of ownership gets a special relevance in conditions of the reforming of the sphere of physical culture and sport which includes changes of functions of executive authorities of the sphere, the growth of a role of public organizations and the distribution of market relations.

One of the directions of the noted problem provides the creation of the marketing process according to needs of consumers and inquiries of a services sector [1; 2].

At the creation of the marketing process in a services sector as S. S. Garkavenko notes, it is necessary to consider four characteristics of service: impalpability, indivisibility, variability and fragility [3].

The marketing process in the sphere of physical culture and sport allows producers of physical and sports services to function the effectively in difficult economic conditions, to master new markets and to provide new services according to a market condition (O. V. Stepanova, 2005; V. I. Zholdak, 2008; A. N. Stasyuk, 2013).

The prospectivity of the research of possible ways of interaction of institutions of physical culture and sport from the subject of a services sector was caused by our research for the purpose of the involvement of new clients to these institutions.

The objective of the research: the foundation and the definition of the most perspective ways of interaction of institutions of physical culture and sport of different forms of ownership with subjects of a services sector for the involvement of new consumers of physical and sports services.

The material and methods of the research: general scientific (analysis, comparison, generalization); sociological (interviews); expert assessment.

Results of the research and their discussion. As O. M. Stepanov marks out, physical culture and sport belongs to the welfare sphere which has a main purpose – a reconstruction of national human capacity [8].

The expansion of number of consumers of physical and sports services aims not only the economic effect for commercial institutions, but also in general at the state.

For the solution of the research objective it is expedient to use the method of expert evaluations, as one of the main methods of scientific and technical forecasting.

An expert estimation is a procedure of receiving an assessment of a problem on the basis of opinion of experts for the purpose of the subsequent decision-making (choice) [6].

It is expedient to use individual estimates, as they are based on the use opinions of the certain experts who are independent one from another.

Managers on sale of the fitness centers-networks “Sport life” (E1), “The planet sport” (E2), “Sportland” (E3) which are located in Kiev acted as experts (n=3). The choice of experts was carried out on the basis of the analysis of the realized physical and sports services that is the got profit.

An expert estimation was carried out in the form of interview. The interview method, according to E. P. Golubkov, is generally applied to the solution of the following research marketing tasks:

– establishment of a portrait and a behavior of consumers;

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- studying of the relation of consumers to goods, trademarks, a producer;
- search of unoccupied niches and development of a new product;
- assessment of compliance of the existing product to requirements of a market;
- testing of advertizing materials [4].

The perspective subjects of a services sector for the interaction with commercial institutions of physical culture and sport were established behind the results of our previous research. The rank subordination of interaction of institutions of physical culture and sport and subjects of the services industry are the following:

- 1) with travel agencies;
- 2) with shops of popular brands;
- 3) with shops (landlords) of sports stock;
- 4) with shops of food;
- 5) with beauty shops, producers and distributors of cosmetics;
- 6) with producers and/or distributors of sports food;
- 7) with producers and/or distributors of special sports stock (bandages, bands, corsets, etc.) [5].

Possible ways of interaction of a commercial institution of physical culture (a fitness center) with travel agencies will be considered in this research, in the subsequent.

Possible ways of interaction of commercial institutions of physical culture and sport with subjects of a services sector were created on the basis of the analysis of works of scientists of rather market researches [1; 6; 7].

The experts used a 3-point scale (0 points – don't approve; 1 point – approve; 2 points – realize) behind the economic feasibility. It was offered to experts to estimate the next possible ways of interaction with travel agencies in the course of interview:

- the mutual advertizing (placements of flyer, boards, advertizing of services which an institution personnel carries out in the course of realization of the service)
- this way of interaction was approved by all interviewers and noted that this interaction is implemented in the cooperation with other subjects of services industry;
- the use of certificates (discounts) – this way of interaction was positively apprehended by all interviewers, it is also worth paying attention that one interviewer (E3) noted that this direction was considered by his institution, as an opportunity for the involvement of new clients;
- the use of coaches of the fitness centers in tourist rounds (the content of interaction is that the travel agency takes in the rounds of instructors of fitness and provides them platforms, stock for carrying out classes with vacationers behind permits of travel agencies) – all interviewers approved a similar way of interaction, however one interviewer (E1) dropped a hint of doubt concerning the possibility of involvement of new clients fitness by the center in the noted way;
- the association of databases of clients and the creation of the only card of clients – interviewers (E1, E3) declared that possible expenses on the realization of similar interaction can exceed profit;
- the creation of a mutual system of accumulative bonuses that discounts – this way of interaction was approved by two interviewers (E2, E3), it is also worth noting that one interviewer (E1) pointed to the realization of this way of interaction.

Results of an expert assessment of possible ways of interaction of commercial institutions of physical culture and sport with travel agencies are given in the table.

The generalized results of an expert assessment of ways of interaction of fitness centers with travel agencies

№	Ways of interaction	Experts			Total points
		E1	E2	E3	
1.	Mutual advertizing	1	1	1	3
2.	Use of certificates	1	1	2	4
3.	Use of coaches	0	1	1	2
4.	Association of databases	0	1	0	1
5.	Creation of a mutual system of accumulative bonuses	2	1	1	4

Thus, for the involvement of new clients to fitness centers expedient interaction with travel agencies by the creation of a mutual system of the accumulative bonuses and the general certificates.

Conclusion. The conducted research allowed to establish possible ways of cooperation of commercial institutions of physical culture and sport with subjects of a services sector (travel agencies) and to note that the most perspective ways of interaction is the creation of a mutual system of the accumulative bonuses and the general certificates.

Prospects of the subsequent researches provide the analysis of dynamics of new consumers of physical and sports services in commercial institutions of physical culture and sport from the realization of the offered ways of interaction with subjects of a services sector.

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Comparative characteristics of anthropometric data and indicators of the cardiovascular system of cyclists of the category MASTERS of different age groups

Abstract. Purpose: *the study of a functional state of athletes-cyclists of the category MASTERS of different age groups.*

Material and Methods: *the study was conducted using anthropometric testing and measurement of the cardiovascular system. Three groups of cyclists of the category MASTERS of different age groups took part in the study: I group 40–44 years old; II group 45–49 years old; group III 50–54 and older. Results:* *the analysis of the research data and anthropometric indicators of the cardiovascular category MASTERS of athletes of different age groups in relation to indicators in active sports shows that significant changes have occurred in larger number of indicators, in addition to growth of athletes. Conclusions:* *test measurements allow enough informative to compare the features of athletes of different age groups and found opportunities for correction and control the training process of cyclists of the category MASTERS.*

Keywords: *bicyclists of the category MASTERS, anthropometric data, indexes of the cardiovascular systems, age group.*

Introduction. Bicycle sport is one of the popular and spectacular sports in the world. It is widely presented in the program of the Olympic Games and the World Cups of types of bicycle sport are held every year [8]. Ukraine has the status of the “sports” state and classes by bicycle sport as traditional, national, public means of the improvement take a special place among means of formation of health of a person characteristic for our country [3].

Bicycle became not less popular as means of carrying out healthy leisure. A large number of clubs appears which purpose is the development and the promoting of bicycle sport, the involvement of veterans to sports activities and maintaining a healthy lifestyle due to the active development of bicycle sport among veterans in recent years, its exit to the international scene. Social activities not only increase efficiency, but also generate a number of new motive functions [9; 10]. In this regard there was a question of need of scientifically-methodical providing, rational planning and creation of the training process in training of sportsmen-cyclists of the category MASTERS.

Many scientifically-methodical works of different scientists (V. M. Platonov, 1988, 1997, 2005; L. V. Volkov, 1990, 1997) are devoted to a problem of a long-term training of sportsmen [2; 7]. In the works scientists represent a long-term training of sportsmen as a process which consists of 4 or 5 stages, the last of which comes to the end with an elite sport. The subsequent sports improvement of sportsmen, that is sport of veterans (MASTERS) is considered in the works of V. V. Mulik, 2002, V. I. Perevoznik, 2004 [5; 6].

The creation of model characteristics of a state of sportsmen-veterans can be used as a substitute of an object that the researches on model will allow receiving new data on the object. When experimenting with a model it is possible to receive the new facts which are a display of structure and function of model, they have a huge impact on the translation of experimentally carried out scientific works to the practical sphere of sport. Such role is played by numerous morphofunctional models at the solution of tasks at the creation of the training process [1; 4].

Communication of the research with scientific programs, plans, subjects. The researches which make the main content of the work, were carried out according to the Built plan of the research work in the sphere of physical culture and sport for 2011-2015 behind a subject 2.8. “Improvements of training of sportsmen in separate groups of sports”.

The objective of the research: to carry out the comparative analysis of anthropometrical data and indicators of the cardiovascular system of cyclists of the category MASTERS of different age groups (40–44 years old; 45–49 years old; 50–54 years old) in relation to the period of their active sports activities.

Material and methods of the research. The research was conducted with three groups of cyclists of the category MASTERS of different age groups: I group of 40-44 years old; II group of 45-49 years old; the III group of 50-54 years old and older, on 10 people in everyone, taking into account the existing rules of age groups of

competitions of bicycle sport on the highway. Sportsmen of all age groups actively participated in competitions on cycling at all stages of long-term preparation. Cyclists of the category MASTERS of all groups and constantly train and take part in competitions now.

Results of the researches and their discussion. Data of testings of anthropometrical data and indicators of the cardiovascular system in different age groups are provided in tab. 1-3.

The analysis of indicators of testing in the first age group of sportsmen of 40-44 years old (tab. 1) in compared to indicators of their active sports found out a substantial increase of body weight of sportsmen-veterans and an increase in heart rate at rest ($p < 0,05$) that is caused by a sharp reduction of training and competitive loads, by a violation of a day regimen and process of food, and also other factors. The reliable changes aren't revealed from other indicators of testings ($p > 0,05$).

Testing indicators in the second age group of sportsmen of 45-49 years old (tab. 2) in compared to the period of active sports authentically changed from such indicators, as: weight of sportsmen ($t = 2,67$); HR at rest ($t = 4,44$); arterial pressure of systolic ($t = 3,19$) and diastolic ($t = 7,91$).

Table 1

The comparative characteristic of anthropometrical data and indicators of the cardiovascular system of cyclists of the category MASTERS of 40-44 years old during active sports activities and after (n=10)

Indicators		During active sports		After active sports (40-44 years old)		Reliability assessment	
		σ_1	$\bar{X}_1 \pm m$	σ_2	$\bar{X}_2 \pm m$	t	p
Length of a body, sm		5,39	176,0 \pm 1,71	5,55	175,8 \pm 1,76	0,08	$p > 0,05$
Body weight, kg		5,80	72,5 \pm 1,84	6,03	78,7 \pm 1,91	2,34	$p < 0,05$
HR at rest, pbm ⁻¹		4,03	52,6 \pm 1,30	4,80	58,9 \pm 1,50	3,18	$p < 0,05$
Arterial pressure mm mer. col.	Systolic	7,09	112,5 \pm 4,24	4,08	116,0 \pm 1,02	0,74	$p > 0,05$
	Diastolic	5,68	71,0 \pm 1,80	4,74	73,5 \pm 1,50	1,07	$p > 0,05$

Table 2

The comparative characteristic of anthropometrical data and indicators of the cardiovascular system of cyclists of the category MASTERS of 45-49 years old during active sports activities and after (n=10)

Indicators		During active sports		After active sports (40-44 years old)		After active sports (45-49 years old)		Reliability assessment	
		σ_1	$\bar{X}_1 \pm m$	σ_2	$\bar{X}_2 \pm m$	σ_3	$\bar{X}_3 \pm m$	t	p
Length of a body, sm		5,39	178,5 \pm 1,83	5,77	178,3 \pm 1,83	5,75	178,0 \pm 1,81	0,08 0,09 0,06	$p_1 - p_2 > 0,05$ $p_1 - p_3 > 0,05$ $p_2 - p_3 > 0,05$
Body weight, kg		5,47	73,1 \pm 2,05	4,88	79,2 \pm 2,18	5,59	79,7 \pm 2,40	2,63 2,67 0,21	$p_1 - p_2 < 0,05$ $p_1 - p_3 < 0,05$ $p_2 - p_3 > 0,05$
HR at rest, pbm ⁻¹		4,39	55,8 \pm 0,76	2,20	59,8 \pm 0,70	1,90	62,5 \pm 0,50	2,58 4,44 2,93	$p_1 - p_2 < 0,05$ $p_1 - p_3 < 0,05$ $p_2 - p_3 < 0,05$
Arterial pressure mm mer.col.	Systolic	6,77	114,5 \pm 2,14	9,20	120,5 \pm 2,91	11,55	128,0 \pm 3,65	1,66 3,19 1,61	$p_1 - p_2 > 0,05$ $p_1 - p_3 < 0,05$ $p_2 - p_3 > 0,05$
	Diastolic	4,97	71,5 \pm 1,57	4,71	81,0 \pm 1,49	3,69	87,0 \pm 2,17	4,38 7,91 3,17	$p_1 - p_2 < 0,05$ $p_1 - p_3 < 0,05$ $p_2 - p_3 < 0,05$

The reliable changes are found in the same indicators in the third age category of 50-54 years old (tab. 3), as in the second age group, but in a bigger difference: body weight of sportsmen ($t = 4,66$); HR at rest ($t = 8,79$); indicators of arterial pressure of systolic ($t = 5,13$) and diastolic ($t = 6,01$).

It should be also noted that length of a body of sportsmen was almost invariable for these periods of time while the increase in body weight of cyclists of the category MASTERS upon the termination of active sports took

place during the period till 50 years old that is naturally connected with a change, and exactly with a reduction of the mode of motive activity.

Table 3

The comparative characteristic of anthropometrical data and indicators of the cardiovascular system of cyclists of the category MASTERS of 50-54 years old during active sports activities and after (n=10)

Indicators	During active sports		After active sports (40–44 years old)		After active sports (45–49 years old)		After active sports (50–54 years old)		Reliability assessment		
	σ_1	$\bar{X}_1 \pm m$	σ_2	$\bar{X}_2 \pm m$	σ_3	$\bar{X}_3 \pm m$	σ_4	$\bar{X}_4 \pm m$	t	p	
Length of a body, sm	5,82	178,3±1,52	5,21	177,6±1,83	5,15	177,1±1,47	5,37	176,9±1,52	0,28 0,49 0,56	$p_1-p_2 > 0,05$ $p_1-p_3 > 0,05$ $p_1-p_4 > 0,05$	
Body weight, kg	5,07	73,3±1,63	4,91	76,8±2,12	5,23	80,9±2,08	4,71	83,5±2,26	1,57 3,30 4,66	$p_1-p_2 > 0,05$ $p_1-p_3 < 0,05$ $p_1-p_4 > 0,05$	
HR at rest, pbm^{-1}	4,31	58,4±0,92	3,50	62,4±0,92	2,73	66,5±0,85	3,35	73,6±0,72	2,27 5,00 8,79	$p_1-p_2 < 0,05$ $p_1-p_3 < 0,05$ $p_1-p_4 < 0,05$	
Arterial pressure mm mer.col.	Systolic	8,17	114,7±2,12	9,13	120,0±1,95	9,51	126,7±2,47	9,34	134,8±2,26	1,37 3,03 5,13	$p_1-p_2 > 0,05$ $p_1-p_3 < 0,05$ $p_1-p_4 < 0,05$
	Diastolic	6,32	67,5±1,50	5,57	71,5±1,71	6,94	78,3±1,45	6,71	85,0±1,70	1,50 3,97 6,01	$p_1-p_2 > 0,05$ $p_1-p_3 < 0,05$ $p_1-p_4 < 0,05$

The complex analysis of a state of health, a type of a constitution, anthropometrical data, a level of the development of physical qualities, properties of the nervous system is necessary for the researches of a functional condition of sportsmen of the category MASTERS which will allow correcting and constructing purposefully the training process individually for each age group.

The analysis of the conducted researches of anthropometrical data and indicators of the cardiovascular system (tab. 4) of sportsmen of the category MASTERS of different age groups in relation to indicators at active sports shows that the reliable changes ($p < 0,05$) took place on a bigger number of indicators, except length of a body of sportsmen.

Table 4

The comparative characteristic of reliability (t) of anthropometrical data and indicators of the cardiovascular system of cyclists of the category MASTERS of different age groups with indicators during active sports (n=30)

Indicators	Age group		
	I group 40–44 years old	II group 45–49 years old	III group 50–54 years old
Length of a body, sm	0,08	0,09	0,56
Body weight, kg	2,34	2,67	4,66
HR at rest, pbm^{-1}	3,18	4,44	8,79
Arterial pressure mm mer.col.	Systolic	0,74	3,19
	Diastolic	1,07	7,91

As for the weight of veterans, the overwhelming gain happened for the first years of the end of sports career, then was stabilized, and at the advanced age tends even to decrease. Length of a body of athletes of reliable changes has no, though its some reduction is observed with age ($p > 0,05$).

Thus, the results of the conducted researches allow drawing the following **conclusions**:

1. Indicators of the cardiovascular system of cyclists-veterans decrease after active performances in competitions, from 40 years old, however the greatest shifts ($p < 0,05$) happen at the age after 45 years old.
2. The greatest changes of indicators of the cardiovascular system of veterans are noted in data of HR (40–

44 years old – $t_1=3,18$; 45–49 years old – $t_2=4,44$; 50–54 years old – $t_3=8,79$), systolic arterial pressure ($t_1=0,74$; $t_2=3,19$; $t_3=5,13$), diastolic arterial pressure ($t_1=1,07$; $t_2=7,91$; $t_3=6,01$).

3. Indicators of length of a body and body weight of cyclists-veterans have the reliable changes in body weight of sportsmen which decreases in relation to the optimum: in 40–44 years old ($t_1=2,34$), 45–49 years old ($t_2=2,67$), 50–54 years old ($t_3=4,66$); at the same time the growth of veterans authentically ($p>0,05$) didn't change.

Prospects of the subsequent researches. The presented results of the researches are an initial link for the determination of features of the creation of training classes of cyclists of the category MASTERS.

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Volleyball in an unsportsmanlike higher educational institution: development trends

Abstract. *Purpose:* the development and the basing of organizational actions for the work of sports groups of volleyball in unsportsmanlike higher educational institutions. **Material and Methods:** analysis and synthesis of scientific literature; analysis of the educational process; pedagogical supervision. **Results:** a curricula and programs are developed and proved for the work of sports groups of volleyball in unsportsmanlike higher educational institutions, test standards and tests are offered and substantiated, the educational manual is created. **Conclusions:** it is expedient to organize classes on physical training in groups with sports orientation taking into account a desire and physical capacities of students in higher educational institutions of an unsportsmanlike profile that is leads to the increase of visit and activity on classes of students to the improvement of their physical fitness and physical development. The program of the specialization "Volleyball" can become a basis for the creation of the Typical program for unsportsmanlike higher educational institutions.

Keywords: volleyball, unsportsmanlike higher educational institution, students, program, physical education.

Introduction. Volleyball – is a game which significantly influences the development of physical culture in our country. However "national volleyball didn't become an object of a scientific research yet" [1], however, and student's one, as its component, too.

Volleyball is included in the program for physical training of students in an unsportsmanlike higher educational institution and is organized, as a rule, in three main directions: classes in special medical groups (improving volleyball), classes in groups of all-physical preparation where a certain place is allocated for volleyball (actually a physical education) and classes in sports sections on volleyball (student's sport).

However by the results of the experimental pedagogical and the physiological researches of experts of classes on the general physical preparation don't solve all complex of the problems facing physical training of students [2]. It was found out that it is more expedient to organize classes in groups with a sports orientation taking into account a desire and physical capacities of students [3]. The creation of groups with a sports orientation led to the increase of visit and activity on classes of students, physical fitness and physical development of the engaged improved. Unfortunately, a uniform approach to training of students in volleyball isn't developed yet till nowadays in higher education institutions. As the work of sports groups on volleyball became, along with others, one of the main forms of the organization of physical training in many higher education institutions, the special attention is deserved by questions of planning of study, scoping and the maintenance of a training material, and also a training technique.

The objective of the research: the development and the foundation of organizational actions for the work of sports groups on volleyball in unsportsmanlike higher educational institutions.

The material and methods of the research: analysis and generalization of scientific and methodical literature; analysis of the educational process; pedagogical supervision.

Results of the research and their discussion. An accession of Ukraine to Bologna process and the corresponding adaptation of the native educational system to the European standards set new important tasks of the modernization of the educational process for the higher school in respect of the expansion of independent training of students and a free choice of subjects within the general course in a higher educational institution.

The chair of physical training and sport of V.N. Karazin Kharkiv National University, since 2005, within classes of the discipline "Physical training", along with the traditional general physical preparation, offers students a number of the specialized courses including game sports, combat sports, athleticism, fitness, aerobics, track and field athletics, etc. [3].

The determination of interest in a certain sport is the beginning of an intelligent choice of the forms of physical activity satisfying to individual physical and psychological needs of students. Such system of a free choice of a specialization on classes in physical training gives to students an opportunity in the course of training

to seize skills of the chosen sport and further to be engaged in it at the amateur level.

At the same time a profound studying of the chosen look demands not only formations of physical skills and abilities, but also the corresponding theoretical preparation which has to include the necessary volume of knowledge of physiology, psychology, history and theoretical bases of this sport.

Volleyball – is one of the most popular in the modern youth environment, however at the same time and one of the most difficult game sports. Thanks to the staginess, effective combinations and prompt movements of players, volleyball for many decades remains a hobby of youth during a rest. However nonprofessional actions of fans of a game, not familiar with bases its technique, quite often lead to injuries both players, and their partners. It is possible to avoid these negative consequences quite simply as the specialization “Volleyball” gives to students an opportunity for rather short term to seize the special physical preparation, game techniques, and also understanding of tactics, both the certain player, and team in general.

We will consider the general principles of training of volleyball players in the unsportsmanlike higher education institution.

The main task of classes by volleyball in specialized medical groups – is assistance to strengthening of health of students. According to physicians, the performance of separate game tricks of volleyball isn't connected with the manifestation of big efforts, sharp movements and static work, that's why a game in volleyball by the facilitated ball and by the simplified rules can be recommended as an addition to medical methods of treatment even for those who has cardiovascular diseases in the first stage of the development. In such groups classes must be held by teachers who are most trained in the methodical plan, knowing a state of health and physical fitness of each engaged student [4]. In specialized medical groups, in comparison with the main groups, the time is extended for a preparatory and a final part.

In sports groups on volleyball training is provided by the principle of improvement. Students as a result of questioning are selected in groups according to their preparedness and taking into account desire to be engaged in volleyball. On classes students get acquainted with volleyball bases for the subsequent participation in mass competitions (superiority of a course, a faculty, a higher education institution), and also increase physical fitness by means of volleyball.

The volume and the maintenance of a training material depend on a year of training. On the first two courses material is various within all-developing, preparatory and bringing exercises, and also within elements of technique and tactics of a game. On older years the main attention is paid to exercises for the development of the general and special physical qualities, for fixing of technique and tactics of a game mastered on initial courses.

The organization of the educational and training work is carried out by the principle of sports improvement in sections of volleyball and is directed on the improvement of technical and tactical skill and further development of motive and functional preparedness [5]. Classes in sports sections of volleyball are given in out of learning time. At the big contingent of the engaged groups, uniform in sports preparedness are created (teams of faculties, courses, etc.). At insignificant number of the students who are engaged in volleyball groups of students of various faculties and various level of preparedness are created. The best sportsmen are invited in a national team of higher education institution which trains separately.

The national team of university participates in the championship of the city, area or Ukraine among higher education institutions and in other competitions, and for the students who are engaged in specialized groups competitions on the superiority of courses, faculties, university are systematically held.

Planning – is one of the main functions of management of the process of training of volleyball players in the system of the higher school. It defines not only the content of all process of preparation, but also the system of work of a teacher. In the system of higher educational institutions planning has two main components: the program of a course of a subject matter which defines its contents, and the plan abstract of each classes which defines the system of work of a teacher of this subject matter.

The existence of special plans allows to avoid spontaneity in actions of a teacher, excessive expenses of time, forces, appliances, i.e. increases efficiency of the educational and training process. The program of training in sports groups on the specialization “Volleyball” which can be a basis for the Standard [6] was developed on the chair of physical training and sport of V.N. Karazin Kharkiv National University.

The main objective of the program of classes consists in instilling of interest in systematic classes by volleyball, aspiration to create prerequisites for successful training of students to a wide technical-tactical

arsenal of a game, achievement of high level of special and general physical fitness.

The work volumes in the educational and training groups of 1st, 2nd, 3rd of training are presented in the program; the content of a material on the main components of: technical, tactical, physical, theoretical integrated training, distribution of time for the listed components on semester; types of training classes in an orientation.

The specific objectives of long-term training of students according to the presented program are:

- strengthening of health, assistance to the correct physical development and versatile physical fitness;
- development of speed, dexterity, high-speed and power qualities, flexibility;
- training in racks and movements in volleyball;
- training in bases of technology of giving, reception and pass, forward of blow, blocking;
- elementary education to tactical actions in attack and protection;
- adaptation to game conditions on a platform;
- implementation of standard requirements for types of preparation.

An educational class in volleyball or training is characterized by a combination of loading of the general and special character. The distribution of time according to several sections of preparation is presented in the program.

The work in educational and training groups of the first year of training has a special value. It is the responsible period of formation of technical skills, instilling of interest in sports activities in general and volleyball in particular.

The main attention on the first year of training is paid to physical and technical training of students. The ratio of separate types of preparation changes. If in 1 semester the volume of physical preparation makes about 40-45% of all time, in the 2nd semester reaches 60%.

The big role is given to outdoor games for ensuring a rather emotional level of classes on the first year of training.

As traumatism prevention the program is most sated with the sets of exercises directed on strengthening of the articulate and copular system of the engaged. At the beginning of each semester it is instructed the safety regulations which are engaged on the performance during classes by volleyball.

A check and an estimation of the reached results take the special place among problems which decision has an essential impact on training improvement of quality. Efficiency of the process of training in many respects depends also on the correct statement of the monitoring system.

The considerable experience is saved up in the field of control of knowledge in a pedagogical practice; there are general requirements to the content of check of results of training, namely:

- purposes of check have to answer the training purpose at all certain levels;
- content of check – to correspond to the content of training;
- means of check have to be adequate to types of educational activity which are formed in a subject matter, and are calculated on the planned level of informative independence;
- performance of tasks has to be described in the system of concrete quality and quantitative indices;
- assessment has to be taken out on the basis of uniform procedure of a ratio of the received indicators with indicators which were planned.

The check is considered as a process of identification, measurement and assessment of results of training. Measurement consists in attributing by the specified rules of numerical values to sizes which characterize this or that pedagogical phenomenon.

Starting point in the development of a technique of control of knowledge, the skills reached in the course of training is definition of the purposes of training. On their basis end and intermediate results of training that reflects the quality of training are established.

Taking into account that the main objective of training of volleyball players is the development of bases of a game (history and rules), training in technique of a game in volleyball and increase of physical fitness means of volleyball, the standards connected with techniques of volleyball and the general physical fitness are gotten out for control in unsportsmanlike higher education institution [7]. Other purposes (educational, pedagogical and developing) are also important and have to be reached.

Standard test standards and theoretical tests which are estimated by a certain number of points are offered on the basis of the stated principles for a subject matter «Physical training» on the specialization «Volleyball» for

measurement and an assessment of results of training, except the current control of preparation (it is estimated by the expert integrating estimates) [6]. The points gained by the student are transferred to a scale of estimation of ECTS and national scales on the system approved by the Ministry of Education and Science of Ukraine [8] and are registered in examination registers.

The whole educational and methodical complex on the specialization «Volleyball» is stated in the manual [6] which will help students to organize an independent work in the course of training.

Conclusions. Thus, it is expedient to organize classes in physical training in groups with a sports orientation taking into account desire and physical capacities of students in higher educational institutions of an unsportsmanlike profile that leads to the increase of visit and activity on classes of students, the improvement of physical fitness and physical development of the engaged. As the work of sports groups on volleyball, along with others, is one of the perspective forms of the organization of physical training in higher education institutions, the special attention is deserved by organizational and methodical practices of V.N. Karazin Kharkiv National University (training programs, tests, educational and methodical materials, etc.). The program of the specialization “Volleyball” can become a basis for creation of the Standard program for unsportsmanlike higher education institutions.

Further researches are supposed to be conducted in the field of the improvement of a technique of training on volleyball of students of unsportsmanlike specialties of higher educational institutions.

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To the question of decision making in physical rehabilitation

Abstract. Purpose: searching for a solution of the problem of coordination in a complex hierarchical systems, and study of the mechanism of decision making in physical rehabilitation. **Material and Methods:** modern approaches to the management of complex hierarchical systems were reviewed; the job descriptions of a physician and instructor of physical therapy were analyzed. **Results:** centers and stages of decision making in physical rehabilitation were defined by decomposition method, ways to improve coordination in decision making were suggested. **Conclusions:** the mechanism of decision making in physical rehabilitation requires improvement.

Keywords: physical rehabilitation, remedial gymnastics, hierarchical system, decision-making, the postulate of compatibility.

Introduction. Physical rehabilitation should be considered as a difficult hierarchical system which works in variable conditions. The definition and the studying of factors of the effective functioning of such systems remains an actual scientific problem which is solved mainly by representatives of physical and mathematical sciences [1–5]. One of the directions of the improvement of functioning of difficult hierarchical systems is the increase of efficiency and flexibility of the mechanism of coordination in an adoption of operational, tactical and strategic decisions [6].

Two manifestations of the complexity of a system are considered: the external and the internal complexities. The external complexity is defined by the complexity of relationship with the environment, the complexity of a control system that potentially estimates on a feedback of system and environment. The internal complexity is defined by the complexity of a set of internal states that potentially estimate on the complexity of management in the system. A subsystem of making a decision has to be always in difficult systems [7]. Its design significantly depends on a type of tasks for which it is developed, available data, information and knowledge, and also from users of a system.

Physical rehabilitation shows the internal and external complexity and therefore has to include a decision-making subsystem. The improvement of coordination of the activity of a doctor and a specialist in physical rehabilitation (an instructor of MPC) in the adoption of administrative decisions can improve the functioning of system of physical rehabilitation. In the research the main attention is paid to the external manifestation of the complexity of physical rehabilitation.

Communication of the research with scientific programs, plans, subjects. The work was performed within the Consolidating plan of the research work in the sphere of physical culture and sport for 2011-2015 on a subject 4.2 “Physical rehabilitation of disabled people with violations of activity of the musculoskeletal system”.

The objective of the research: to find the general solutions of a problem of coordination in difficult hierarchical systems, to describe the decision-making process in physical rehabilitation and to offer options of its improvement.

Material and methods of the research: analysis of references, system analysis, decomposition method.

Results of the research and their discussion. It was established by the method of the decomposition that physical rehabilitation is an open difficult hierarchical system as it consists of the separate interconnected subsystems. At the same time it can be considered as a subsystem in the health system and as an object of its management. Health protection in this case acts as a system of the highest level, or a metasystem. Its elements are a doctor, an instructor of MPC (a physical rehabilitator) and a patient.

Providing rehabilitation services in medical institutions is regulated by the order of Ministry of Health of Ukraine No. 176 of 29.03.2011. Such duties are assigned to a doctor on medical physical culture and a nurse (an instructor) on medical physical culture [8; 9].

Experts, who have a higher sports education, can be also appointed to a position of the instructor on medical physical culture. These experts are considered such who have special preparation on medical physical

culture [9]. Thus, specialists in physical rehabilitation can hold a position of an instructor on medical physical culture.

We analyzed duty regulations of a doctor and an instructor of MPC for the purpose of studying of their role in the rehabilitation process.

According to duty regulations, an instructor of MPC has the following tasks and duties which directly concern carrying out rehabilitation actions (on separate points of duty regulations):

4.1.1. He provides the primary prevention of diseases of a person by methods of fitness training, the correction of the mode of physical activity under the leadership of a doctor.

4.1.2. He competently gives individual and group classes in physiotherapy exercises.

4.1.3. He trains patients with various pathology in techniques of a prevention of diseases and their complications, carries out a selection of complexes of physical exercises for independent classes on physiotherapy and improving exercises, changes a technique of the performance of procedures and their dosage depending on features of a disease, extent of functional violations according to appointments of attending physicians.

4.1.4. He observes patients for the purpose of the studying of their state and the efficiency of classes depending on what changes or supplements a technique of classes, coordinates it with an attending physician.

4.1.6. He makes recommendations about improving systems and programs, about physiotherapy exercises, a motive mode and improving physical training in house conditions.

4.1.9. He does an analysis of a work.

4.1.10. He studies and introduces a positive experience [9].

According to duty regulations, a doctor of MPC has the following tasks and duties which directly concern carrying out rehabilitation actions (on separate points of duty regulations):

6.1. Conducts special examinations of patients which are appointed the physiotherapy exercises by physicians, for the purpose of the definition of a complex of physiotherapy exercises, techniques of procedures and their dosage depending on features of a disease, extent of functional violations.

6.2. He observes patients for the purpose of the studying of their state and the efficiency of classes depending on what changes or supplements a technique of classes, coordinates it with the attending physician.

6.3. He directs and controls a work of nurses (instructors) on physiotherapy exercises (including making up complexes of physical exercises by them for remedial gymnastics and independent classes of patients) and nurses who carry out procedures of remedial and morning hygienic gymnastics.

6.5. He introduces new effective techniques of physiotherapy exercises, defines rational combinations of a course and separate procedures of physiotherapy exercises to other remedies and medical rehabilitation (compatibility, sequence, time intervals).

6.6. He carries out procedures of remedial gymnastics and other forms of physiotherapy exercises with certain patients or groups.

6.7. He makes recommendations about improving systems and programs in physiotherapy exercises, the motive modes and improving physical training in house conditions.

6.8. He does the analysis of a work, studies and introduces a positive experience [8].

On the basis of the stated it is possible to draw a conclusion that tasks and duties of an instructor and a doctor of MPC which directly concern carrying out rehabilitation actions, substantially coincide. An exception is a control function of a doctor MPC and his task is to introduce new effective techniques of MPC.

The analysis of duty regulations showed that there are at least three centers of making decisions in physical rehabilitation: an attending physician, a doctor of MPC and a physical rehabilitator (an instructor of MPC). It is necessary to consider the existence also of the fourth center –patient as its activity directly influences the rehabilitation process.

The existence of several centers of making decisions actualizes a problem of the effective coordination of their activity for the purpose of decision-making of different level for the achievement of the global purpose of functioning of the system.

There are various approaches to a statement and a solution of a problem of coordination in the difficult hierarchically ordered systems. Two approaches which are the basis for models, methods and algorithms of the coordination mechanism are basic. The coordination mechanism which is focused on a task, builds hierarchical model of a control system according to an optimizing task. At the use of the coordination mechanism focused on a control system, the model of a process is considered or in a generalized view, or take into account only

separate parameters of the process [6].

The task of coordination can be solved through the modification of the structure of a control system, i.e. a choice of the optimum scheme of interrelation between centers of making decisions. Another way is a choice of an optimum coordination signal which allows direct and synchronize the activity of the centers of making decisions for the achievement of the global purpose of functioning of the system at the distribution on the established hierarchical structure [6].

We will define the above-mentioned system concepts of physical rehabilitation.

The purpose of functioning of the system of rehabilitation should be considered the restoration of functionality of a patient. Communications which belong to carrying out rehabilitation actions extend from an attending physician to a patient through a doctor of MPC and a physical rehabilitator. Professional information acts as a coordination signal (which can be transformed when passing through the intermediate centers of making decisions).

The coordination mechanism focused on a task leans on methods of the interdisciplinary design optimization. It provides the decomposition of a big task on some simpler and the development of algorithm of their joint decision for the achievement of the optimum decision [10]. In rehabilitation the problem of big dimension is a long-term goal which needs to be divided into a row of short-term, demanding less than time for the achievement.

The decomposition of the global purpose which is recovery of health and functionality, on smaller can happen in two directions.

One way is an interdisciplinary optimization. We understand it as coordination or submission to rehabilitation of the treatment purposes. In such coordination an attending physician has to play a key role. Tasks of a physical rehabilitator – is to decompose the rehabilitation purposes on the basis of the strategy of treatment chosen by a doctor and obligatory to coordinate them with a patient.

Another way is a statement and coordination among themselves of smaller, short-term objectives which can be reached at the same time or consistently in interests of the solution of the big purposes that in turn conducts to the solution of the global purpose –recovery of health and functionality. The coordination has to take place at the level a rehabilitator –patient with possible involvement of a doctor of MPC.

The coordination mechanism focused on the control system is effective at the application in difficult systems with the rather constant hierarchically ordered structure. Its task is the definition of the optimum coordinating signal that allows direct activity of the centers of making decisions of various levels on the achievement of the global purpose of functioning of the system [1-3]. It is necessary to consider an attending physician in the hierarchical system of rehabilitation of the highest level by the center. A doctor of MPC, a rehabilitator and a patient act as the lowest levels.

This coordination mechanism is based on a postulate of the compatibility [5]. According to it, the activity of the center of making decisions (e.g., a rehabilitator) can answer the global purpose if the activity is coordinated according to a problem which is solved at the level of the direct management of this control center. For a rehabilitator such highest center most often is an attending physician, is more rare – a doctor of MPC, for a doctor of MPC – an attending physician, for a patient – a rehabilitator.

Other provision of a postulate of the compatibility concerns the operating center. The achievement of the global purpose will become possible when an operating center (an attending physician) coordinates the elements which are directly subordinated to it (a doctor of MPC or a rehabilitator) according to own purposes and if thus problems of the hierarchical system are compatible.

Thus, the direct management of rehabilitation actions or their carrying out by an attending physician contradicts modern mechanisms of coordination in the decision-making process in the difficult hierarchically ordered systems. Our experience testifies that such practice is unfortunately widespread in medical institutions. Rehabilitators often expect from an attending physician of detailed instructions concerning carrying out rehabilitation actions, and it doesn't belong to his duties and competence.

Being guided by a postulate of the compatibility and the coordination mechanism focused on a control system, it is possible to allocate the following stages of the coordination of the centers of making decisions in physical rehabilitation:

1. An attending physician, acting as a center of making decisions of the highest level, plans the treatment strategy where physical rehabilitation is a component.

2. An attending physician submits information to the lowest centers: to a doctor of MPC or directly a physical rehabilitator. This information has to carry out the function of a coordination signal for the combination of problems of the activity of a rehabilitator with a treatment strategy.

3. A physical rehabilitator, in turn, directs own coordination signal to a patient which combines and coordinates the activity with problems of the activity of a rehabilitator.

4. Coordination signals promote the solution of local tasks at each level according to duty regulations. Information on results of the activity of a patient arrives to a rehabilitator and about the activity of a rehabilitator – to an attending physician (or to a doctor of MPC as to an intermediate center).

5. On the basis of feedback signals, received from the lowest center of making decisions – a rehabilitator (or a doctor of MPC as an intermediate center), an attending physician can change the treatment strategy, define a new coordination signal and send it to a rehabilitator.

However such system of coordination from five stages can't be considered as a universal for the solution of problems of rehabilitation.

The first three stages should be executed for a start of the rehabilitation process, and the following – for its carrying out. It is necessary to carry out the fifth stage only for a full repeated control of a control system according to conditions of the compatibility postulate. The basis is a change of strategy of the treatment which is carried out by an attending physician without or taking into account results of rehabilitation. Such “restarting” can't often happen for the objective reasons.

The coordination purpose in the system of rehabilitation and the metasystem of health protection – are the expeditious adoption of the optimum decision concerning the rehabilitation process and its components by the exchange of information between centers of managements of various levels: an attending physician, a doctor of MPC, a rehabilitator and a patient. Such approach is applied in all difficult hierarchical systems which function in the multitask mode in dynamic conditions [6].

The effective coordinated activity reduces the need for frequent coordination signals of the highest level at each level. The task of each center – is a support of the processes corresponding to the level and stated in duty regulations after all criterion of the efficiency of structures of the management of difficult systems is ability to provide an optimum performance of key processes [6]. Each process has to have the center of making decisions and be provided with the optimum coordination signals of the highest level.

Conclusions. The coordination problem can be solved in two ways at making decisions in the hierarchically ordered systems. The first – is through the modification of the structure of a control system, i.e. a choice of the optimum scheme of interrelation between centers of making decisions. Other way is a choice of an optimum coordination signal which allows direct and synchronize the activity of the centers of decision-making for the achievement of the global purpose of functioning of the system at the distribution on the established hierarchical structure.

Physical rehabilitation can be considered as a hierarchical system in the metasystem of health protection as an object of its management. As the centers of decision-making an attending physician (the highest level), a doctor of MPC, a physical rehabilitator (an instructor of MPC) and a patient which are elements of the system of health protection. Their activity has to be based on a postulate of the compatibility and be coordinated in some stages. The taken in practice a direct charge of rehabilitation actions, or their carrying out by an attending physician, contradict the modern mechanisms of coordination in the decision-making process in the difficult hierarchically ordered systems.

The increase of the efficiency of making decisions in physical rehabilitation can go way of the improvement of activity of all centers of making decisions, the optimization of coordination signals and feedbacks.

Prospects of further researches consist in studying of the maintenance of coordination signals and feedbacks.

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Features and structure of educational work of physical training teacher

Abstract. Purpose: to analyze the peculiarities and structure of educational work of Physical training teacher.

Material and Methods: during the research we used the method of literature analysis. **Results:** defined the peculiarities of educational work of physical training teacher. There were analyzed the types of teacher activities, different approaches to the structure of the study and its separate components. Basic requirements which are considered to be model features of mastering knowledge, abilities and skills, which in turn, provide professional effectiveness of teachers. **Conclusions:** this work allows examine the depth of aspects which promote the potential unleashing of physical training teacher.

Keywords: physical training, professional activities, educational work of a teacher, teacher, physical training.

Introduction. The problem of the improvement of training of specialists in the sphere of physical education and sport becomes more and more actually every year.

Lately some resolutions were accepted in the state which concern reforming of the system of physical education of pupils and student's youth, the Law of Ukraine "About physical culture and sport" (11.2009) where there is a provision on the improvement of quality of training of teachers of physical culture and teachers of physical education.

According to L. Pilipey, today there is a search of ways of the increase of efficiency of the educational process for the maximum approach of graduates of HEI to a model of training of a professional in the education system (L. P. Pilipey, 2011).

Investigating works of N. Moskalenko, we notice that the system of sports education is connected not only with knowledge acquisition, but also with mastering motive skills which demand the corresponding physical preparation, and with abilities to pass on the experience to pupils. In this regard there is a problem of their professionally-applied physical preparation during the study in HEI.

Communication of the research with scientific programs, plans, subjects. The work was performed within a subject "The built plan of the RW in the sphere of physical culture and sport on 2006–2010." of Ministry of Ukraine of family, youth and sport affairs, 3.1.2. Scientifically-methodical principles of the improvement of teaching a discipline "The theory and the technique of physical training", and also the Built plan of RW for 2011-2015. "The improvement of programmatically - standard bases of physical training in educational institutions".

The objective of the research: to analyze features and the structure of professional activity of a teacher of physical training, considering different views of scientists of rather structural qualification.

Material and methods of the research: analysis of references.

Results of the research and their discussion. The pedagogical activity is considered as the professional activity of a teacher in which the task of study and education are realized by means of different means of influence on pupils. The pedagogical activity is presented in a general view as a special, many-sided and multidimensional kind of activity connected with study and education [7] which is caused by the level of special psychology and pedagogical knowledge and abilities, professionally significant personal qualities, abilities, psycho-physiological opportunities of a teacher [10].

There are different approaches to the studying of a structure and separate components of the pedagogical activity: some researchers consider functions of a teacher [10], others [1] – motivators, such as requirements, a purpose, motives, incentives, and an installation.

The structure of the pedagogical activity differs a little in the components in works of scientists. So, V. Teslyuk allocates five primary activities: pedagogical, scientific, qualification, public and not regulating [10].

M. Rozenova allocates seven types of the pedagogical activity: training, educational, organizing, propaganda, administrative, advisory and self-educational [7]. Other authors allocate four types of the pedagogical activity at school: planning, organization, directly pedagogical activity and control.

Investigating the structure of the activity of a teacher, V. Nebesna came to a conclusion that all kinds of the

activity form three main components: organizational (A), communication (B), scientifically creative (C). However all listed components are ambiguously presented in the structure of one personality. Different variations of components where one is a conduct and others are background cause a difference in a model of a teacher and differ in the professional tendencies [6].

1. Organizational tendency can be presented by a model of a type (A < - > B < - > C) who answers the structure of the activity of a master of the mass-health-improvement work.

2. Communicative tendency has two models: (B < - > A < - > C) – more typical for a master of the educational work and (B < - > C < - > A) which displays a ratio of psychological components of the identity of a teacher – master of the educational work.

3. Scientifically creative tendency is also presented by two models: (C < - > B < - > A) that answers the structure of a coach of HEI, and (C < - > A < - > B), more expressed identity of a teacher-master of the research and scientifically-methodical work.

According to the researches of authors [6], ratios of psychological components, in the structure of the identity of a teacher are such:

- 1) an organizational component (A) – 43,4%;
- 2) a communicative (In) – 40%;
- 3) a scientifically-creative (C) – 16,6%.

This approach is rather variable that gives the chance to estimate and find a creative approach in training of a specialist in physical training.

Being guided by the educational standard, the main requirements which are considered as model characteristics of mastering knowledge, skills, for the use in the professional activity are allocated. However a transition from qualification model to a competitive is widely discussed in literature that is focused on the sphere of the professional activity. The need of such transition by contradictions of the system of vocational training which are shown in the following locates:

- growing requirements to the level of the professional activity of a teacher and discrepancy of its actual state;
- between the approved new type of the professional activity of a teacher with the prevalence of a creative orientation of pedagogical thinking and the created model of the professional education focused on knowledge, ability and skills;
- between the need to react quickly to the changeable personal and individually creative potential of subjects of the educational process and discretely local character of the existing system of training of a teacher;
- between the social order for a highly competent expert and inertness of the most part of teachers in the increase of the qualification according to modern requirements of the professional study.

Developing the theory of competitive approach, L. Kulikova allocates creative types of the professional activity of a teacher:

- predictive which consists in a prediction and forecasting of results of the pedagogical activity and modeling of the pedagogical process;
- projection and constructive – design and planning of the pedagogical process;
- organizing – the organization of pedagogical actions of a teacher and pupils;
- communicative – consists in the creation of interpersonal interaction and the relations which allow to organize the pedagogical process effectively;
- reflexive that allows to carry out the analysis of results of the pedagogical activity.

Forming model of a specialist in physical culture and sport, T. Fendel and S. Gorbunova include such competence:

- key competence (information, communicative, social-legal, competence of activity and self-improvement);
- general - professional competence (competence of carrying out monitoring of achievements and problems of pupils, in design of the teaching and educational process, organization, interaction, with its participants, competence of professional self-education);
- special competence (academic and practical).

Without rejecting competitive approach in the professional education, E. Mozhaev pays attention to the

identity of a teacher as the main central figure of the pedagogical process. Characteristic features of the structure of the identity of the expert are socially significant qualities of a teacher, social norms of a profession, valuable orientations, relations, positions, professional ability to study and professional self-development, social lines of the professional growth and the professional activity.

Many researchers [7; 8] pay attention to the identity of a teacher. The main psychological requirement to the identity of a teacher is the love to children. The second basic requirement is the existence of special knowledge in that sphere in which he teaches children, and also knowledge psychology and pedagogical character (regularities of the age development of an organism and the identity of a child, possession of different pedagogical receptions, etc.). E. Mozhaev specifies that there are such qualities as an optimum sociability, an aspiration to achieve success in business, strong-willed qualities (courage, persistence), a high level of harassments, a choice of heavier and honorable purposes – actions on the verge of risk, the previous premeditation, careful planning at the head of a personal model of the pedagogical activity in the sphere of physical culture and sport.

According to M. Rozenov, the additions of characteristics of the identity of a teacher are: pedagogical erudition, pedagogical relay of a purpose, pedagogical thinking, pedagogical intuition, pedagogical improvisation, pedagogical step, pedagogical empathy and pedagogical creativity [7].

A number of authors [11–14] such as diligence, organizing abilities, aspirations to continuous self-improvement, culture of behavior and appearance, ability of prediction and forecasting, administrative qualities, communicativeness, language skills, sharpness, efficiency, combination of personal interests, with interests of society, social maturity and activity are also allocated in the structure of the identity of a teacher.

Interesting data are provided in the research of T. Dichek about characteristics of teachers and coaches from students. From the point of view of students the most important qualities of teachers is the emotional component of the personality which is expressed in requirement of informal, cordial relations, attention, support, recognition of a student as a person. The professional competence of a teacher is also important for students.

Five schemes of the professional activity are directed in the researches of E. Klimova: The person – the Nature”, “the Person – the Technics”, “the Person – the Sign”, “the Person – the Image”, “the Person – the Person”. The pedagogical profession belongs to the last category and includes the manifestation of such universal values, as: a need for communication; an opportunity to put yourself to the place of another; a resistant, good health in the course of work with other people; an ability to store information on personal qualities of other people; a fast understanding of intentions and opinions of other people.

The essential value has the list of contraindications which are regulated by professional requirements in the analysis of the professional suitability. Contraindications to work on this group of professions “the Person – the Person” is: defects of language, the plainness of language; isolation; physical defects are expressed; the indifference to destiny of other people; the lack of signs of the disinterested attitude towards people with whom you communicate.

In the researches of Yu. Kovalenko the structural components of preparedness of future experts for physical training of children of the preschool age are: motivational (formation of interest and requirements to a future professional activity, to a healthy lifestyle); cognitive-action (professional knowledge, skills); personal component (professionally significant qualities of the personality); healthcare (a condition of physical health, a level of functional preparedness of an organism).

Analyzing the data of scientific literature, it is possible to agree with E. Mozhaev’s opinion that a system creating element of personal potential of a teacher is motivational- demanding kernel of the personality. All kinds of the activity which are carried out by a person are the result of satisfaction of his requirements. On the one hand, they play the defining role in the productive professional activity of a person, and on the other hand – they are formed in the course of this activity.

In a generalized view the structure of personal potential of a teacher on physical culture includes: spirituality, educational potential, motive readiness, creative activity, and intellectual potential, pedagogical abilities, general and professional culture.

Spirituality is considered as an orientation of a person on ideal values.

Spiritual education is an integral part of vocational training of an expert, his professional and social formation because spiritual human life is directly connected with intellectual, emotional and moral activity [3].

Conclusions. Thus, we come to a conclusion that it is impossible to be guided only by educational-qualification characteristics of a graduate in the organization of the educational process at training of specialists

on physical training and sport: it is necessary to develop humanistic approaches which would promote disclosure of potential of the personality, to increase of his competence, preparedness to show the creativity which will allow to go beyond a standard activity.

Prospects of the subsequent researches. In the subsequent the studying of the motivational structure of students who acquire a profession of a teacher of physical culture, its dynamics, in the course of study in HEI is planned.

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Social aspects of teaching and training Special Olympics football in Ukraine

Abstract. Purpose: definition social effect of sports for footballers with abnormal mental development. **Material and Methods:** the study was conducted based on a survey of parents of players of Special Olympics (n=45). **Results:** there were analyzed the importance of joint with healthy peers training sessions for players with disabilities mental development. Football training sessions are seen as a means of social integration for this contingent. There were identified social relationships in the system: «athlete – an athlete», «athlete – coach». **Conclusions:** the necessity of implementing «Unified Sports» program in training process for people with disabilities mental development, which significantly contributes to the social integration of persons with disabilities. Develop social skills and relationships in the team are due to mutual understanding and cohesion of the team.

Keywords: Special Olympics, social impact, social integration, the players with disabilities mental development.

Introduction. The number of people with disabilities mental development (DMD) increases every year [6; 13]. The number of people with such disorders has exceeded 300 million according to the World Organization of Health (WHO) in 2013 year. “Special Olympics” is the largest international organization which providing training and competitive experience by summer and winter sports for people with DMD. Football is one of actively developing priority sports in the program “Special Olympics of Ukraine” (A. Perederiy, A. Pavlos., 2014).

The new and effective ways of social integration for these persons is finding recently by many experts in the field of correctional pedagogy, special psychology, adaptive physical education. Most authors believe that sport is one of the most effective means to achieve this goal [1; 4; 7-10; 12]. T.R. Tenkachova (2014), I.A. Kohut, S. Primenko (2012-2014), K. Vasilyeva, Y.D. Boychuk, L.V. Green, S. Yermakov (2012) conducted social integration researches for persons with DMD; P.Y. Korolev (2009), N.L. Babich, V.A. Rymak, E.M. Kalenyk (2007) T.V. Voskresenska (2011), O. Chernyavska (2012) involved issues of social adaptation for persons with disabilities mental development by means of physical culture and sport; A.N. Nikiforov (2012) analyzing psychosocial adaptation of athletes with abnormal mental development by specially-organized football playing; E.S. Karasev (2013) studied impact of training sessions with a mini-soccer interpersonal communication for young people with moderate mental retardation; F. Baran, A. Aktop, D. Özer, S. Nalbant, Ađlamış E., S. Barak, Y. Hutzler (2012-2013) studied the impact of the program “Unified Sports” on indicators of anthropometry, physical and special training and psychosocial characteristics of athletes with DMD and healthy partners.

This problem is not enough investigated for people with DMD in society through active involvement in sports. This tendency is particularly acute in Ukraine, where from 1 million of people with such disorders involved in various sports only about 19 thousands according to Ukrainian public organization “Special Olympics of Ukraine”.

Communication with scientific programs, plans and subjects. The work is carried out in accordance with the “consolidated plan of research in the field of physical education and sport for 2011-2015 years” on the topic of 1.10 “Social and humanistic foundations of adaptive sports in Ukraine» opened by Ministry of education and sports of Ukraine (state Registration is 0113U004011).

The aim of the research is definition social effect of sports for footballers with abnormal mental development

Tasks of the research:

- 1) To analyze the importance of joint training sessions with healthy peers for players with disabilities mental development.
- 2) To identify the impact of the training process at the level of social integration for Special Olympics players.

Material and methods of the research. Such methods were used for the solution of the put tasks: the analysis and synthesis of the specific and methodological references, materials of the Internet; interview,

methods of the observation, comparison and analysis the social aspects of the training process for Special Olympics players.

There were surveyed 45 parents of players with DMD to determine the social impact of football playing. The survey was carried out during the competition "14th European Football Week Special Olympics Europe / Eurasia in Ukraine" in Kharkov. The age of the surveyed respondents children was in the range from 9 till 19 years; sport experience averaged from 3 to 4 years; 51.1% of players had mild degree of DMD, 35.6% – moderate; 11.1% – heavy; 2.2% – deep. The sportsmen had other diseases too: 42,2% had Down Cyndrom; 34,4% – autism; 11,1% – cerebral palsy; 6,7% – phenylketonuria; 2,2% – Martin Syndrom; 2,2% – Apert Cyndrom; 2,2% – Prader-Willi Syndrome.

Results of the research and their discussion. The European Union (EU) is an active supporter of integrated education and calls on its members and countries that want to join the EU and create conditions for improving the quality of life of people with disabilities by creating opportunities for learning in regular classes with healthy peers together. Inclusive education has been progress around the world, ranging from full inclusion where students with DMD study together with their healthy peers in regular classrooms, and in some classes in secondary schools and specialized institutions [3; 11].

Europe has significant achievements in this direction. For example, most students with DMD are educated together with their healthy peers in inclusive classrooms in Austria. Poland provided opportunities for people with these disorders to study together with healthy peers. Romania has started to promote the integration of students with disabilities in regular schools, but now includes a comprehensive process only for people with mild DMD. Slovakia is working on the implementation of inclusive education at special schools, which still remain the norm for the majority of students. Many countries of the post - soviet space are observed a similar trend, including Ukraine [2; 5].

Inclusion is considered as a complex process to facilitate the integration of people with disabilities but it is not only one means to achieve this goal. Experience of inclusion in the United States shows that the physical location of students with the DMD in regular classes will not lead to theirs social integration. Students with DMD isolated from their healthy peers. Practical experience for over 30 years has shown that young people in the United States perceive students with these disorders, as much "other" and does not want to socially interact with them. There are many problems in promoting social integration at school and United States with many other countries began to consider alternative ways of attracting healthy peers and people with DMD to work together outside classrooms, also including through sport. International organization "Special Olympics", as a global leader in providing opportunities to attend training sessions and participate in competitions for people with DMD, has developed a volunteer program to promote social integration for this category of people that's called "Unified Sports". This program combines healthy people and those have DMD with similar age and ability to train and compete on an equal footing in the sports team. The program "Unified Sports" was approved in three sports: bowling, softball and volleyball in 1988 year [14; 15]. Positive results has contributed to its integration in other sports, including football. The critical factor in improving the efficiency and quality of the Special Olympics training process is to develop social skills and positive relationships in the team.

There were determined the effect of athletes with DMD by a survey of parents: 75.6% of respondents gave their children to football section in order to improve their health; 48.9% – consider playing football as a form of social skills and relationships; 15.6% – wanting that their children acquired football skills; were observed at the team that is able to give a positive social experience. Social skills are one of the most important skills that may be required according to people with disorders in the life, because people are social and need to communicate with their peers. There were identified the basic social skills of Special Olympics players during conversations with parents: the ability to observe personal hygiene; to talk about their feelings and emotions; recognize risky situations; know and be able to use the rules of communication, but also be able to find ways to resolve conflicts; have the skills to listen and have a conversation with someone, analyzing the information; to make decisions; avoid wrong behaviors (smoking, alcohol, conflicts, etc.); respect themselves, have self-regulation and emancipation.

A survey of parents of Special Olympics players showed the presence of certain trends that may affect the possibility of building a positive attitude to sport these athletes in Ukraine (fig. 1).

A small number of players (6.7%) are not willing to attend training sessions due to the fact that they have considerable difficulties in communicating with peers and it's mostly people who suffer from severe autistic

diseases spectrum; 17.8% of parents say that their children attend training sessions with more bad mood; 23.8% of people with these disorders are mostly have good mood; 51.7% of children attend training sessions with a good mood.

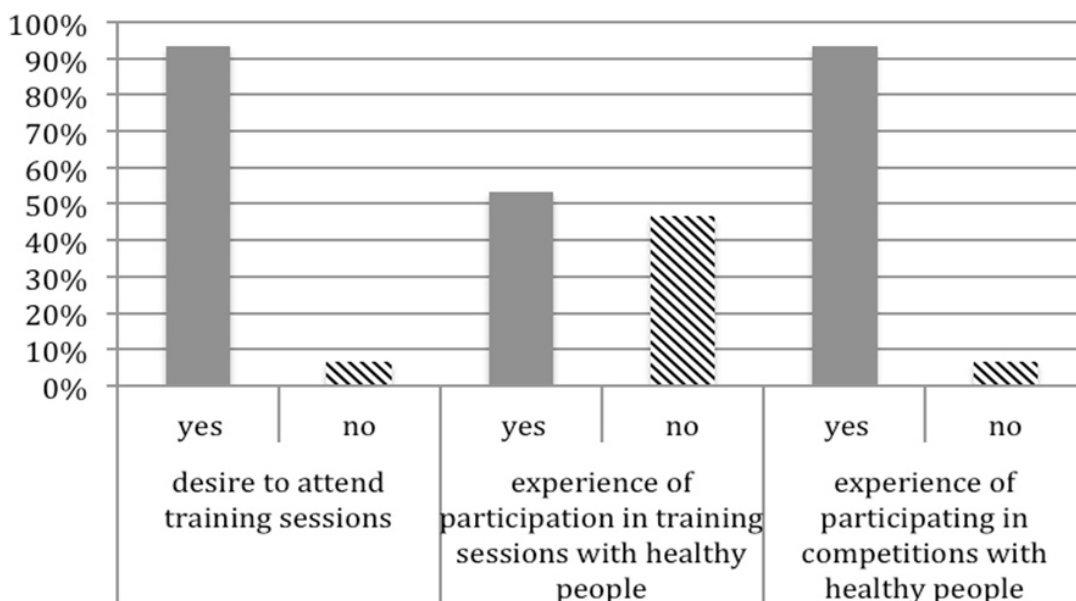


Fig. 1 Players positive attitude in sports (according to the survey, n = 45), %

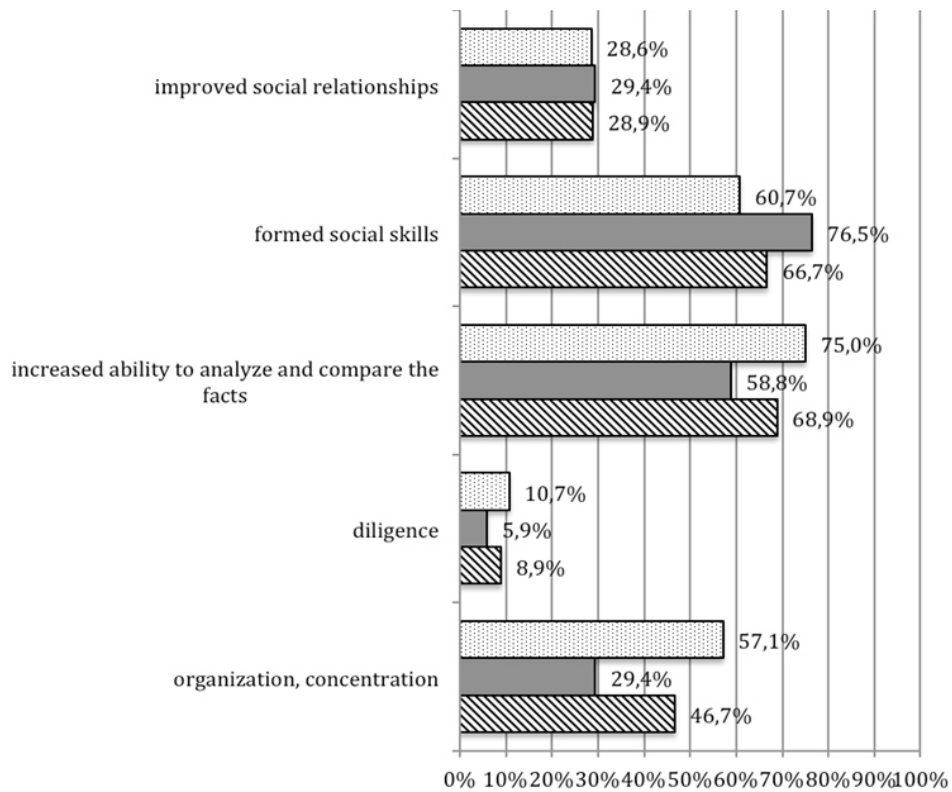
Most of children who playing football are orphaned and living in special correctional institutions and that's influence on low rates of participation in training sessions with healthy people.

The program "Unified Sports" primarily aimed at the inclusion of social life for people with DMD thought destroying historical barriers while enhancing sports skills and prepare for Special Olympics football competition. The purpose of this program are: improving self-esteem of people with such disorders, the establishment and development of friendly relations in the team. Coaches are also provide for families of players to participate in training sessions and competitions with athletes. When training sessions and competitions conducting joint, the players with DMD follow healthy peers and they exhibit: building motivation to active sports; mastering expertise; faster social development through social integration in mikrosotsium, which consists of the immediate environment: parents, coaches, teachers, caregivers, doctors and others.

The survey of parents revealed that 37.8% of children involved only in one kind of sport - football, and 62.2% are engaged in several kind of sports. The most popular of them are: basketball, athletics, swimming, bowling, table tennis and others. There is a higher increase for some indicators of social skills in people with DMD after two or more sports classes simultaneously (fig. 2).

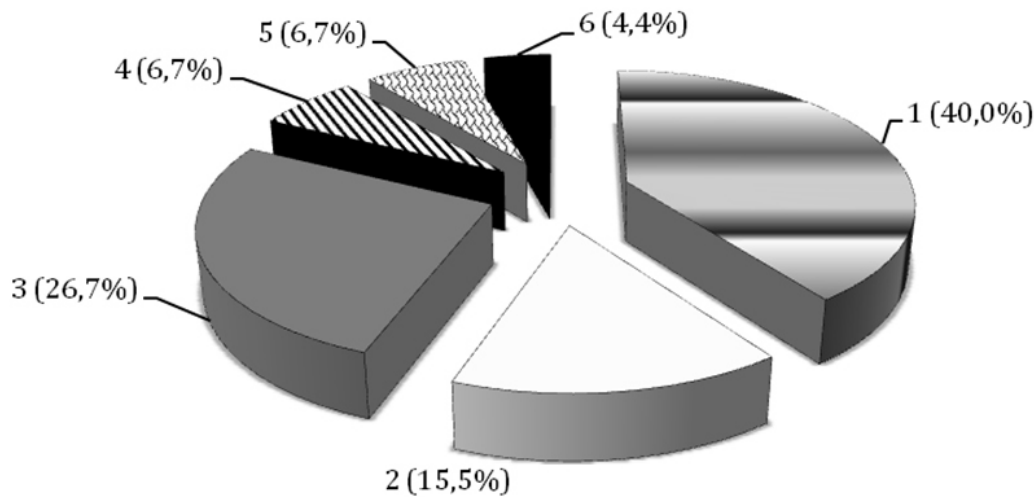
It was found that football promotes largely social skills (76.5%) and relationships in the team (29.4%) thought analyzing questionnaire as to changes in social skills that occur as a result of sports activities of people with DMD. According to the observations of parents, athletes with this disabilities which engaged in several sports besides football, they have a large motor experience which increasing the level of organization and discipline (57.1%), contributed a good ability to analyze and compare cases (75%).

The football team is a small social group, but the problems of relation's research in the team are always relevant because there is a determining factor in sports activities. Successful performance of Special Olympics players in competitions driven by motives that determine interpersonal relationships "athlete – an athlete" and "athlete – coach." If the coach doing adequate selection and improvement tools, methods, forms of organization training process, than employment relations in the football team will be strengthened and the group will be friendly and organized. Polls of parents allowed us to establish the relationship between athletes from the football team with DMD (fig. 3).



 – People who played football and other sports;
  – Persons who engaged only in football;
  – General trend

Fig. 2 Changes in social skills of people with DMD who engaged in sports (according to the survey of parents, n = 45),%



1 – friendly; 2 – with most friendly; 3 – with some friendly; 4 – no friends; 5 – conflict; 6 – Your version

Fig. 3 The relationship between Special Olympics players in the team (according to the survey of parents, n = 45),%

Team compatibility and cohesion depends on social, psychological and biological factors. Biological depend from the neural processes that occur in humans with DMD, which determine or distinguish sympathy between team members. Psychological factors include similarity in the emotional sphere, different habits, feelings, and perceptions of the outside world. Social factors include: the same assessment of reality and the views of people who are engaged in the same type of football activities. Sports team that has inconsistencies at least one of the

factors groups may have conflicts. Reaction of the coach (which implements leadership function) on the existing conflicts in the football team is an important part of optimizing training process in the Special Olympics system. According to the parents survey of Special Olympics players: most of coaches (55.5%) have tried to understand and establish justice; 15.6% of managers did not react to differences in the team; 11.1% of coaches pretended that they didn't know about them and the same number of teachers found guilty of conflict and conducted preventive talks with them; 4.5% of respondents indicated that teachers do not even know about them; 2.2% of football instructors punish all parties of the conflict; 11.1% of respondents were unable to identify a variant of the answer. Special Olympics coach is a teacher and educator, which must don't prevent of conflict in an athletic team. Conflict ignorance, suppression and punishment is unacceptable for athletes with DMD. Survey parents of athletes allowed to determine them ratio to Special Olympics coaches: with great respect (62.3%); many regards, but some are not (8.9%); some regards, but the majority were not (22.2%); mostly feared and only few respected (2.2%); no definite with answer option (4.4%). This trend shows that the vast majority of coaches established positive relationships with their wards, despite the fact that many people with such disorders have serious behavioral problems in the socium through theirs existing disease. However, using individual approach to athletes with DMD and organizational - methodical proper selection of maintenance for training process promotes social relationships in the team which is an important factor for the effective conduct of training sessions with this contingent.

Conclusions. There were substantiating to inclusive the program "Unified Sports" in the training process for footballers with abnormalities of mental development, which significantly contributes to the social integration of persons with this disability.

Occupation in various sports, including football has a significant social impact for people with abnormalities of mental development. Formation of social skills and relationships in the team and creativity of coach to organize, conduct and attitude towards him Special Olympics athletes are very important element of training sessions. Training process and competitions are considered as instrument of social integration but not as an end in itself.

The subsequent researches is to examine the organizational methods and technical, tactical level of players with different degrees of deviation mental development, best practice of coaches and create own approach to organizing and conducting training sessions for Special Olympics players.

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Psychological fundament of reducing of sportsmen's mistaken actions of fire-applied sport during competition

Abstract. Purpose: to identify individual psychological characteristics which compensate the impact of psychological determinants of erroneous actions of fire applied sport athletes. **Material and Methods:** the study involved 102 fire applied sport athletes from the age of 17 to 30. We used the following methods of psycho-diagnosis "Investigation of anxiety" (auth. Ch. D. Spielberg. Adapted version by Y. L. Hanin); test "Proof Test" by B. Bourdon; method "Intellectual liability"; technique "Prediction"; "Tapping test"). **Results:** the results of research present solving a scientific problem what appears in the disclosure of subjective determinants of erroneous athlete's actions. **Conclusions:** the complex of individual psychological characteristics of fire applied sport athletes makes it possible to optimize their training process and reduce the likelihood of errors during the competition.

Keywords: rescuers, athlete, erroneous action, socio-psychological determinants, fire applied sport.

Introduction. There are difficult emergency situations of a man-caused character and a natural character grow even more often, and as a result – requirements to preparation of the personnel of PSES of Ukraine which are involved in the elimination of consequences of these emergency situations in the conditions of the modern prompt development of technologies and production [2]. The high-quality and faultless performance by them of professionally office tasks needs the high quality special physical preparation which is reached thanks to trainings.

And it isn't casual that the base of special physical preparation for firemen- rescuers is fire and applied sport. Achievements in this sport cause the development and the formation of professionally important qualities, that is psychological properties of a rescuer which provide his resistance to the influence of certain adverse factors of professionally office activity, predetermining a faultlessness of performance of the put task. Also we will note that the performance of different types of exercises of fire and applied to sport are a peculiar imitation of the performance by firemen- rescuers of the official duties in the conditions of emergency situations.

Fire and applied sport is considered an extreme sport and is rather traumatic where the price of a mistake can lead to a mutilation and a death of sportsmen [3]. Therefore the faultlessness of performance of each of types of sports exercises is of great importance.

At the present stage wrong actions are studied through a prism of reliability of an expert working in concrete kinds of activity. The problem of reliability (faultlessness) of the professional activity of experts of an extreme profile is the basic within the main problems of psychology of work, engineering psychology, ergonomics, legal and military psychology, activity psychology in special conditions and psychology of sport.

And though the works of many domestic scientists, in particular L. O. Gontarenko, T. V. Gosteyeva, O. O. Nazarov, D. V. Lebedev, A.S. Kufliyevskiy, S. M. Mordyushenko, S. M. Mironets, I. O. Polyakov, Yu. O. Prikhodko, Y. M. Ryadynskaya, A. G. Snisarenko, O. V. Timchenko, V. D. Togobytskaya, O. I. Sklenya, but others are devoted to different aspects of a problem of professional and functional reliability, faultlessness and efficiency of activity of an expert, in the system of PSES of Ukraine, a final decision of this problem demands additional researches.

Also the scientific works of modern psychologists which deal with a problem of progress of performances at competitions, faultlessness and efficiency of activity in sport (V. A. Ganzen, E. P. Ilyin, M. D. Levitov, A. Ts. Puni, A. V. Rodionov, V. N. Yurchenko, etc.) and a problem of preparedness of a sportsman for a competition, – V. A. Alatortsev, A. D. Gashoshkin, A. G. Grin, G. I. Zharinova, A. D. Zakharov, E. M. Kozlov, A. A. Lalayan, V. L. Marishchuk, L. S. Nersesyan, E. N. Babakov, O. A. Chernikova.

Till nowadays the objective and subjective determinants weren't a subject of special theoretical studying and generalization which lead to the emergence of mistakes in sports activity of the sportsman which will be exhausted with professionally applied sports, including fire and applied sport, in scientific researches only their

separate elements were lit.

The objective of the research: to define a complex of individually psychological features which compensate the influence of subjective determinant of wrong actions of sportsmen of fire and applied sport.

The research tasks:

- to characterize wrong actions of sportsmen of fire and applied sport;
- to allocate and classify the main wrong actions that characteristic for sportsmen of fire and applied sport;
- to define and characterize subjective determinants of wrong actions at sportsmen during the performance of sports exercises;
- to prove possibility of the decrease in influence of subjective determinant of wrong actions by means of a number of individually psychological features of an expert.

Material and methods of the research. Two groups of experts took part in our research. They are working coaches and referees and scientists who were engaged in this perspective. Except experts, sportsmen of fire and applied sport aged from 17 till 30 years old took part in the research (national teams of National university of civil defense of Ukraine (Kharkov), Head department of PSES in the Kharkov area and Academy of fire safety of Heroes of Chernobyl, (Cherkassy) that have sports qualification “ the master of sports of the world class “, “the master of sports of Ukraine”, “the candidate in the master of Sports”, I, II and III sports categories.

So, on the basis of results of expert estimates, all sportsmen of fire and applied sport who took part in our research, divided into three groups on a sign of the level of efficiency of their sports activity.

The first group (the high level of the efficiency of sports activity) included 25 persons, aged from 22 till 30 years old, who has an experience of performances at competitions of the international and national levels over than 5 years and have sports qualification of fire and applied sport.

The second group (the average level of the efficiency of sports activity) included 34 persons, aged from 19 till 24 years old, who has an experience of performances and prize-winning places at competitions of the national level from 3rd to 5 years and have sports qualification.

The third group (the low level of the efficiency of sports activity) included 43 persons aged from 17 till 20 years old. The sports experience on fire and applied sport makes from 1st to 3 years. They have some performances at competitions of regional level in their asset; they have II and III sports categories, or have no sports categories yet.

By means of the battery of psycho-diagnostic techniques individually psychological features were investigated which compensate the influence of subjective determinant of wrong actions of sportsmen. To these techniques enter: «The research of uneasiness» (author Ch. D. Spielberg, the adapted option of Yu. L. Khanin) – for studying of features of emotionally strong-willed sphere of the identity of the sportsman of fire and applied sport; the test “Proof test” of B. Burdon – for the research of degree of concentration and firmness of attention of sportsmen of fire and applied sport; the method “Intellectual lability” – for studying of features of informative abilities of sportsmen; the technique «Forecast» – for the research of features of psychological firmness of sportsmen; the «Tepping-test» – for the identification of force of the nervous system and the establishment of speed of reaction of sportsmen; and also physiologic tests which are based on dynamics of change of arterial pressure by the technique developed by Ya. I. Pugach. The essence of a technique consists in the control of dynamics of the average arterial pressure (CAD) which as a nonspecific reaction of an organism to external influence displays the degree of an emotional pressure and the related measure of the emotional excitement [4–6]. Also there was a used technique of the definition of subjective determinants which define an inaccuracy of actions in special and extreme conditions of the competitive activity [7].

Results of the research and their discussion. In various extreme sports wrong actions can lead to the irreversible consequences connected with such categories of psychological science as “a professional burning out”, “a professional stress”, “a professional deformation”. It belongs to fire and applied sport as it models actions of different rescuers in the conditions of emergency situations.

We understand such element of sports professional activity as wrong actions of sportsmen of fire and applied sport which breaks its purposeful course and leads to a result, undesirable to the sportsman. On our belief, wrong actions of sportsmen of fire and applied sport are poly-factorial, various, differ in times to the manifestation and can lead to negative consequences.

It would be desirable to note that we investigated wrong actions through a prism of the sports exercises

which are spread out step by step where the mistake made by the sportsman will influence the end result. Also we consider that wrong actions need to be considered from a stage of prestarting mobilization and to the finish of the sportsman.

Types and the frequency of wrong actions depend both as on structure of a concrete sport (its contents, conditions, organization), and from individual (including psychological) characteristics of the sportsman. That's why we consider the inconsistency of requirements of the personality to this sport and changes in structure of the personality which result from discrepancy of personal features to conditions of this activity is the main reason of emergence of wrong actions in the competitive activity of sportsmen of fire and applied sport.

The main characteristic stages of sports activity of sportsmen of fire and applied sports were allocated to sport during their participation in competitions: start; finish; overcoming of obstacles, run on a distance; work with the fire and technical equipment; work in a team for the identification of wrong actions of sportsmen of fire and applied sport of PSES of Ukraine and their classification [3].

During our research it was established that sportsmen of fire and applied sport allow the maximum number of wrong actions during competitions. That is we can claim that the mentality of the sportsman is influenced by the "competitive factors" therefore he makes wrong actions.

We managed to define the most widespread mistakes which lead both to low sports results, and to other negative consequences (tab. 1).

Table 1
Main mistakes of fire and applied sport

№	Main components of fire and applied sport	Mistakes
1.	Start	False start (violation of the rules), late start, a weak emissions of a hip, a slowed-down reaction of a sportsman
2.	Finish	The finish is incorrectly executed (crossing of the finishing line by hands, a head, feet; crossing of the next path in the course of an exercise performance, the trunk isn't connected to the hose line to the line of the finish, it is disconnected by hoses among themselves, the branching isn't connected; loss of fire and technical equipment which is used during an exercise performance)
3.	Overcoming of obstacles, run on a distance	Balance of a body, jumping down to a limiting line is lost, the low speed of movement, a cross of others (next) path which led to the reduction of a distance, is ineptly performed a work with fire and technical equipment
4.	Work with fire and technical equipment	Loss of equipment, rolling of fire hoses on the rival's path, the hose line isn't connected, the ladder is incorrectly established or raised, fire isn't extinguished in a baking sheet
5.	Work in a team	Misunderstanding of partners which leads to mistakes during running

Besides, as a result of the research, it was found out that the emergence of wrong actions at sportsmen during competitions and in general the productivity of their performance is influenced first of all by a competitive stress [1]. Sources of a competitive stress are defined at sportsmen of fire and applied sport by means of the first group of experts and sportsmen.

The subsequent research allowed to define the major stressful factors which are the cornerstone of concrete mistakes which are made by sportsmen of fire and applied sport in the conditions of competitions: a bad concentration of attention; the inconsistency of movements with processes of a perception; the inability quickly to work in the conditions of deficiency of time; a wrong perception of time; the increased excitement, a bad dream in a day or some days before competitions. It was proved that the certain stress-factors form subjective determinants of wrong actions of sportsmen of fire and applied sport.

The poll of the second group of experts became the following step of our research that allowed to define individually psychological features of sportsmen of fire and applied sport which compensate and reduce the influence of subjective factors of wrong actions (tab. 2).

Table 2

Interrelation of stress-factors and individually-psychological qualities of the sportsman which are responsible for resilience to mistakes

Stress-factors	Individually-psychological qualities which are responsible for resilience to mistakes
Bad concentration of attention	<ul style="list-style-type: none"> – to store a resistant attention, to distribute and concentrate attention for a long time; – to be able to switch attention from one object to another; – coherence of movements with processes of a perception; – resistance to dynamic loadings; – ability quickly to work in the conditions of deficiency of time; – optimum level of uneasiness
Inconsistency of movements with processes of a perception	
Inability quickly to work in the conditions of deficiency of time	
Wrong perception of time	
The increased excitement, a bad dream in a day or some days before competitions	

The marked-out features of sportsmen were researched in the subsequent by means of the above-mentioned battery of psychodiagnostic techniques.

The results which were received by us according to Spielberg-Khanin's technique allowed to decide on levels of jet and personal uneasiness of the sportsman (tab. 3) which first of all influence his prestarting state and, as a result – on the emergence of mistakes at the sportsman already during a start.

Table 3

Indicator of levels of expressiveness of personal and jet uneasiness at sportsmen of fire and applied sport with a different sports experience

Type	Level of expressiveness	1 st group (%)	2 nd group (%)	3 rd group (%)	Φ (1, 2)	Φ (1, 3)	Φ (2, 3)
PU	High	10,15	8,20	12,04	0,39	0,34	0,07
	Average	65,34	61,57	53,92	0,40	0,85	0,46
	Low	24,51	30,23	34,04	0,46	0,75	0,30
JU	High	8,37	12,45	20,10	1,13	2,17*	1,08
	Average	56,81	62,99	63,09	0,44	0,36	0,57
	Low	34,82	24,56	16,81	1,04	2,65**	1,70*

Note. * $p \leq 0,05$; ** $p \leq 0,01$.

Generalizing the obtained data, it is possible to tell that the most disturbing are sportsmen of fire and applied sport which sports experience makes from one to three years. Such sportsmen can't effectively control the prestarting state and make mistakes already during a start in the conditions of competitions. Proceeding from it, the correctional techniques aimed at the decrease in the level of jet uneasiness at less skilled sportsmen is introduced obviously necessary.

We consider that it is necessary to add that too low level of uneasiness is also undesirable from the point of view of sports reliability (and consequently also faultlessness in the competitive activity) of the sportsman as it can testify to the insufficient level of motivation and neglect rules of competitions.

By the results of the "Proof test of Burdon", it was established that low indicators of volume and concentration of attention of sportsmen of fire and applied sport predetermine the emergence at them wrong actions at different stages of the performance of sports exercises during competitions (tab. 4).

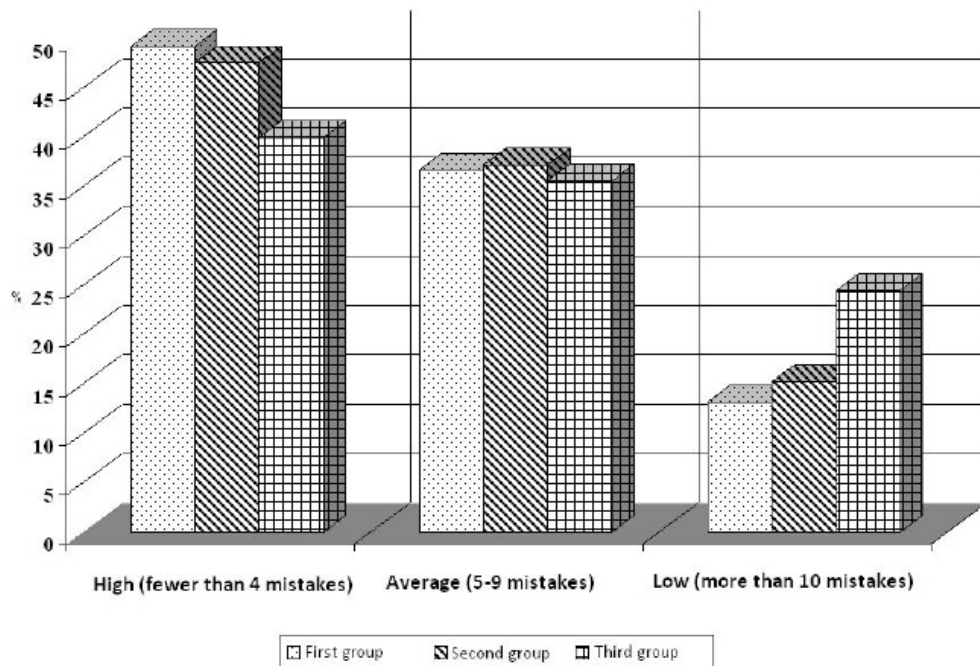
Table 4

Indicator of expressiveness of separate properties of attention at sportsmen of fire and applied sport with a different sports experience and qualification

Properties of attention	1 st group ($\bar{X} \pm m$)	2 nd group ($\bar{X} \pm m$)	3 rd group ($\bar{X} \pm m$)	t (1, 2)	t (1, 3)	t (2, 3)
Volume	909,41±2,99	857,16±2,75	720±3,03	12,62*	44,50*	33,76*
Concentration	3,75±0,75	3,37±0,49	2,90±0,35	0,42	1,03	0,78

Note. * $p \leq 0,05$.

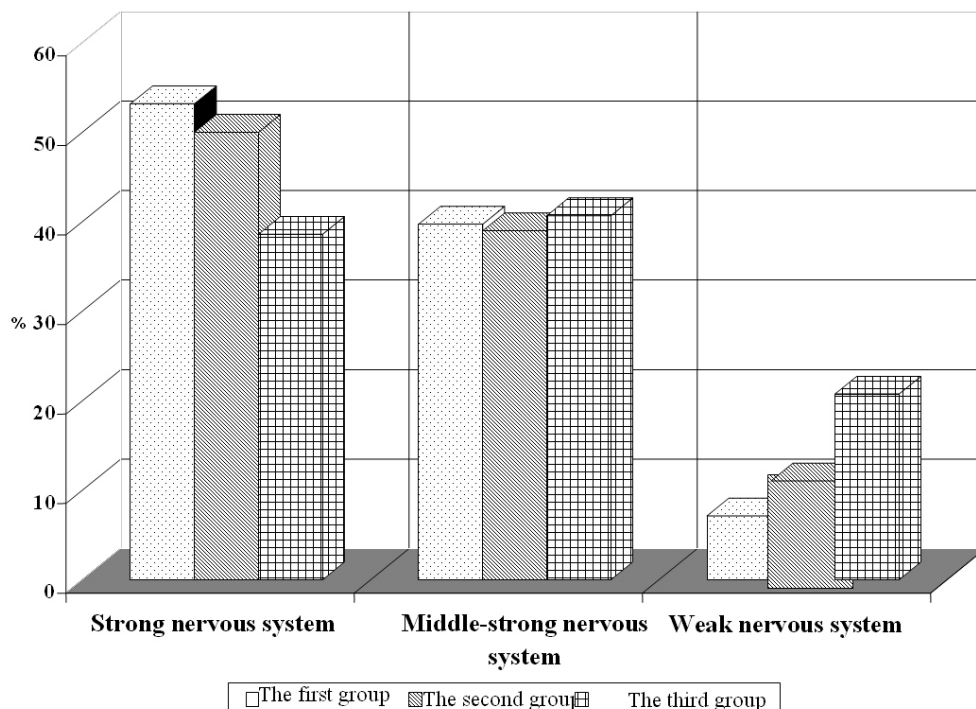
The results by the technique “Intellectual lability” allow claiming what exactly these indicators are in the cornerstone of the short-term forecast of reliability of the sportsman during his participation in concrete competitions (pic. 1).



Pic. 1. Levels of intellectual lability at sportsmen of fire and applied sport with a different professional experience

Thus, sportsmen-beginners of fire and applied sport have a big reliability of emergence of mistakes, already at the beginning of the performance of sports exercises during competitions. The noted features of the intellectual lability of sportsmen of fire and applied sport give the chance to carry out the short-term forecast of reliability of these sportsmen.

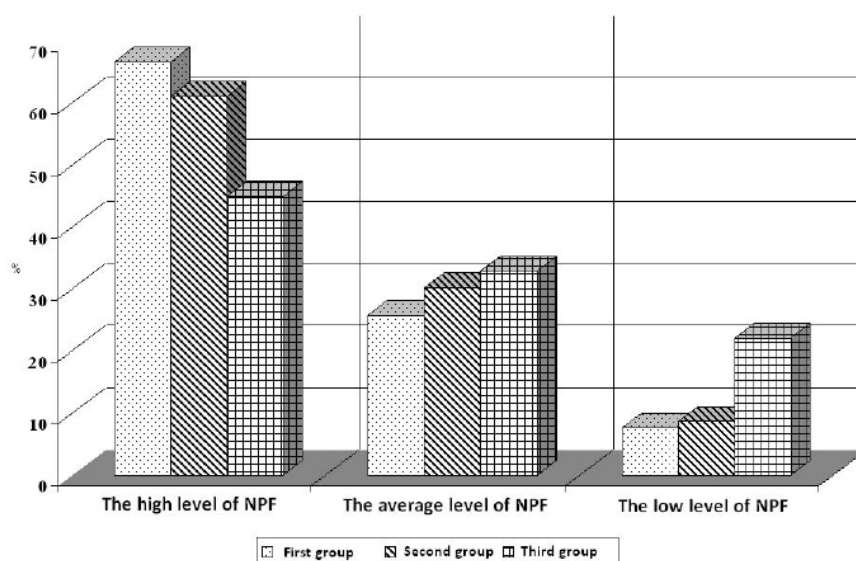
The technique “Tepping-test” allowed defining that sportsmen with a weak nervous system have the bigger reliability of commission of wrong actions even in the conditions of the training process (pic. 2).



Pic. 2. Expressiveness of force of the nervous system at sportsmen of fire and applied sport

We will note that the found features concerning force of the nervous system of sportsmen of this sport of a different skill level give an opportunity of carrying out more effective actions within their sports preparation.

Concerning features of psychological firmness of sportsmen of fire and applied sport, the obtained data allow speaking about the existence of certain divergences in expressiveness of levels of psychological firmness at sportsmen of fire and applied sport (pic. 3).



Pic. 3. Levels of nervously-psychological firmness of sportsmen with different indicators of efficiency of sports activity

It was established during the research that the reliability of emergence of mistakes decreases at the most experienced sportsmen of fire and applied sport thanks to their high rates of psychological firmness during competitions.

Conclusions. The complex of individually-psychological features of sportsmen of fire and applied sport defined during our research which compensate the influence of subjective factors of a competitive stress, gives the chance to optimize the training process of sportsmen of fire and applied sport and to reduce reliability of an assumption mistakes by them during competitions.

The use of objective techniques of the control of changes of an emotional state of indications of CAD allowed to establish that the high progress of the performance was noted at those sportsmen who stored the normal level of an emotional pressure and insignificant emotional excitement in extreme conditions. The excellent feature of such behavior of high-class sportsmen is the restraint at success and composure at failure that provided them the accuracy of an assessment of the current situation in the formation of the operating actions at a choice of adequate forms of behavior.

The analysis of the level of preparedness of sportsmen and the mistakes made by them during the performance of the competitive tasks allowed to classify the main determinants of their emergence. In the basis of their emergence are such factors as a measure of responsibility which is defined by the level of special conditions and the insufficient informational content arises a situation which defines a measure of its extremeness. The quantitative assessment of these components defines the right for an admissible mistake and allows carrying out further necessary measures of the prevention by them.

Prospects of the subsequent researches. The creation of the system model which could beat off substantially features of forecasting of reliability of the assumption of wrong actions by sportsmen of fire and applied sport.

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KUTEK T.

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The study of informational content of special physical and technical parameters of preparedness of qualified athletes

Abstract. *This author is analyzing the informational content, which characterize the special physical and technical preparedness of qualified high-jumpers with a running start. **Purpose:** to study the most informative parameters of special physical and technical preparedness of qualified high-jumpers with a running start and to determine their correlation with the sports result. **Material and Methods:** analysis and generalization of scientific literature, pedagogical observation (interview, survey), factor analysis and correlation analysis. 27 leading trainers of Ukraine took part in the research. **Results:** it has been estimated that 35% of trainers consider inexpedient to use current parameters on special physical and technical preparedness of high-jumpers with a running start due to the low level of informational content of the obtained data and doubtful correlation with the sports result. **Conclusions:** The selected the tests of special physical and technical preparedness, which are necessary to further develop the methodology of forecasting the effectiveness of high-jumpers.*

Keywords: *informational content, reliability, management, parameters, training.*

Introduction. The effective functioning of a control system is impossible without the information about a condition of the system which is operated; without the implementation of a transfer of this information to a place of its processing for the purpose of the improvement of teams of management; the realization of teams of management, control by their efficiency.

At the management of such difficult dynamic system where a coach acts as a long-term sports preparation and as the operating subsystem - a sportsman, it is necessary to consider all main regularities of management. Different, often changeable conditions of a sportsman have to be considered constantly by entering of amendments into the program of training under the influence of the most various factors. These tasks are solved on the basis of the use of tests of special physical and technical fitness due to which the operating system has to receive the information about an effect which is reached by this or that action of a coach.

The modern educational and training process of the qualified jumpers in height from running start has a difficult structure of the interconnected components which are directed on the improvement of special physical fitness, technical skill, education of strong-willed qualities [1–3; 6; 8].

The greatest efficiency of the process of sports training is provided by the directed development of special physical qualities and the improvement of technical skill of sportsmen at different stages of preparation [2; 3; 6; 8].

The search of the most informative parameters of special physical and technical fitness is actively conducted by experts for the purpose of control of the educational and training process which allow finding out a degree of preparedness of sportsmen for the following programs of training [1–3; 5–7].

Communication of the research with scientific programs, plans, subjects. The scientific research was conducted according to the thematic plan of the research work of Ivan Franko Zhitomir state university and according to the subject 2.3.5.1 p. “The improvement of theoretic-methodical bases of management of the system of training of sportsmen of high-speed strength sports” of the Built plan of the research work in the sphere of physical culture and sport for 2006-2010 of the Ministry of Ukraine for family, youth and sport. The number of state registration: 0108U008210.

The objective of the research: to investigate the most informative parameters of special physical and technical fitness of the qualified jumpers in height from running start and to establish their connection with sports result.

Material and methods of the research. The carried-out analysis of the informational content of a large number of parameters of special physical and technical fitness of sportsmen showed that all of them are important characteristics which define sports result in total. At the same time it was necessary to define the most informative among this large number of parameters. The factorial and correlation analysis was used for

this purpose because the main objective of the factorial analysis is the allocation of the most informative and significant parameters from some certain set of casual parameters.

Unlike the majority of known works, the factorial analysis is considered from positions of the analysis of orientation and the sizes of a multidimensional correlation ellipsoid of a full vector of special physical parameters of sportsmen in this work [2].

Results of the researches and their discussion. The questioning of the leading coaches of Ukraine was carried out for the performance of this part of the work. It became clear that 35% of coaches consider the inexpedient use of the existing parameters on a special physical fitness of jumpers in height from running start through the low level of the informational content of the obtained data and the doubtful interrelation with sports result. About 32% expressed their opinion that the frequent application of testing brings to what it becomes a mean of preparation and thus it lost the value of the purpose of testing, besides the frequent application of tests is, in their opinion, the instrument of a fast entry into a condition of sportswear. 90% of coaches consider that it is necessary to carry out an especially individual approach to an assessment of special physical fitness of sportsmen, and criteria respectively have to be specific and inherent only in these sportsmen. All 100% of respondents would like to have objective techniques at the order, which would allow diagnosing special physical fitness of pupils with the smallest expenses of time.

It is established that one of the unresolved problems of the pedagogical control is the absence of technology of carrying out testing, the standardization of the analysis of the received results, and the existence of a large number of tests which are applied at different stages in the training process of jumpers in height from running start, doesn't meet the requirements of reliability and informational content which doesn't give the chance to carry out the exact forecasting of productivity and to introduce the necessary amendments in the process of preparation.

The used methods of an assessment of a ready state of sportsmen don't allow applying, taking into account specifics of the main competitive exercise, them as objective criteria at different stages of preparation. At the same time the tendency to an intensification of the training process, the emphasis in work of coaches on the achievement of the planned level of preparation by a sportsman allows the optimization of a control system of the training process which is carried out by means of the systematic control, forecasting, with the use of a complex of informative and reliable tests which adequately display specifics of the motive activity of a sportsman, and also the correction of training programs.

Our researches testified that a large number of tests which are applied at different stages of a long-term training process don't meet the requirements of reliability and informational content.

Therefore, we didn't manage to establish a degree of reliability for Cooper test (12-minute run on a track of a stadium) because it is applied only by certain sportsmen and only disposable in the first half of October; besides the test was nonspecific for jumpers. It wasn't succeeded to establish a degree of reliability and for such tests as a breakthrough of a bar, a throw of a shot of 4 kg by two hands from below, a tenfold jump from a place from a foot on a foot and a lot of others.

The definition of a degree of reliability of some sprint exercises of high intensity (run of 60 m, 80 m, and 100 m) also caused difficulties that are explained by the negative relation to them from the side of sportsmen in connection with considerable efforts to the mobilization at an orientation to show good results. We observed a similar situation both rather some jumping and power quick tasks.

So, in particular, experts have a thought that it is possible to jump above if show the best result in the exercise "knee bending - rising with a bar on shoulders". However athletes of the extra-class, who increased the personal achievement in the given exercise-test, didn't show good results in jumps. Besides, the whole group of talented jumpers in height was compelled to leave and at the moment leaves sport through injuries of knees which arose and arise when performing this exercise. Our researches found out that a direct link between achievements in this exercise and competitive results isn't present. And nevertheless the excess emphasis on the development of power qualities played the negative role. And today we lose a large number of perspective jumpers who use this test.

We selected from a large number of control tests what have the greatest communication with sports result at different stages of long-term preparation and evidence-based of the theoretical and practical point of view (the correlation coefficient from $r=0,462$ till $r=0,964$ respectively): run of 30 m from a high start; sprinting speed (10 m with a rush); a jump up from a place from two feet; a long jump from a place from two feet; a triple

jump from a foot on a foot from a place; a jump up, standing on a take-off foot at the expense of a move of other foot; a jump up from three steps of running start (tab. 1).

The analysis of results of the researches certifies that tests of high-speed and power character have a high coefficient of correlation with a high jump (a jump up from a place from two feet – $r=0,626-0,784$; a long jump from a place from two feet – $r=0,619-0,657$; a triple jump from a foot on a foot from a place – $r=0,701-0,732$), but only at the level from beginners to a standard of the II category. The correlation coefficient considerably decreases which has a communication with high-speed and power parameters with the growth of qualification. At the level from the I category to masters of sports of the world class the high coefficient of correlation is found with high-speed parameters (run on 30 m from a high start – $r=0,652-0,691$; run on 10 m with a rush – $r=0,667-0,715$) and exercises which have viability with the main sports exercise by the structure (a jump up, standing on a take-off foot, at the expense of a move of the second foot – $r=0,715-0,865$; a jump up from three steps of running start – $r=0,877-0,964$).

Table 1

Communication of the most significant tests of special physical preparation with a result in high jumps (the correlation coefficient)

Indicators	Result in high jumps, m								
	1,15-1,20	1,30-1,45	1,45-1,55	1,55-1,65	1,65-1,75	1,80-1,90	1,90-1,98	1,98-2,08	2,28-2,41
Run on 30 m from a high start	0,462	0,473	0,489	0,504	0,625	0,634	0,652	0,673	0,691
Sprinting speed (10 m with a rush)	0,513	0,564	0,573	0,576	0,582	0,641	0,667	0,682	0,715
A jump up from a place from two feet	0,626	0,634	0,658	0,773	0,784	0,595	0,539	0,513	0,504
A long jump from a place from two feet	0,619	0,622	0,639	0,657	0,561	0,543	0,521	0,503	0,482
A triple jump from a foot on a foot from a place	0,701	0,710	0,716	0,732	0,606	0,592	0,565	0,525	0,504
A jump up, standing on a take-off foot, at the expense of a move of the second foot	0,614	0,627	0,636	0,643	0,675	0,702	0,715	0,721	0,865
A jump up from three steps of running start	0,716	0,730	0,743	0,761	0,772	0,823	0,877	0,931	0,964

Note. Coefficients are significant: $r=0,410$, $P=0,05$; $MSWC - r=0,470$, $P=0,05$.

The most informative parameters were selected on the basis of the correlation analysis from a total number of technical characteristics (the correlation coefficient from $r=0,426$ till $r=0,991$ respectively): running start speed before pushing away, speed of a departure of the general center of gravity (GCG) of a body of a sportsman at the time of a separation from a support, a corner of a departure of GCG of a body of a sportsman, pushing away a phase duration, departure height of GCG of a body, an impulse of force of pushing away (tab. 2).

As results of the researches of the dynamics of the aged changes of key parameters of technique of a high jump at different stages of a long-term preparation testify that the time of pushing away is reduced, running start speed before pushing away increases, an impulse of force which is followed by the essential growth of speed of a departure of GCG of a body of a sportsman at the time of a separation from a support increases in a corner of a departure of GCM of a body of a sportsman with the increase of a result. This dynamics is especially traced on the example of height of a departure of GCG of a body of a sportsman.

**Communication of the most significant indicators of technical preparedness with result in high jumps
(the correlation coefficient)**

Indicators	Result in high jumps, m								
	1,15–1,20	1,30–1,45	1,45–1,55	1,55–1,65	1,65–1,75	1,80–1,90	1,90–1,98	1,98–2,08	2,28–2,41
Running start speed before pushing away	0,512	0,506	0,527	0,604	0,609	0,673	0,867	0,962	0,974
Speed of a departure of GCG of a sportsman at the time of a separation from a support	0,625	0,641	0,652	0,701	0,754	0,786	0,892	0,914	0,963
A corner of a departure of GCG of a body of a sportsman	0,574	0,587	0,616	0,722	0,763	0,802	0,874	0,957	0,986
Pushing away a phase duration	-0,426	-0,438	-0,473	-0,506	-0,536	-0,695	-0,786	-0,962	-0,973
Departure height of GCG	0,884	0,856	0,895	0,903	0,932	0,965	0,987	0,984	0,991
An impulse of force of pushing away	0,472	0,514	0,563	0,615	0,679	0,751	0,832	0,886	0,892

Note. Coefficients are significant: $r=0,410$, $P=0,05$; $MSWC - r=0,470$, $P=0,05$.

The analysis of the aged dynamics of the improvement of technical characteristics was shown that these characteristics change unevenly. In tab. 3 the data are provided to a gain of the main technical characteristics of a high jump during the different age periods. The rate of a gain of technical characteristics was calculated by a formula [2]:

$$W = \frac{100 \cdot (V_2 - V_1)}{0,5 \cdot (V_1 + V_2)} \%,$$

where W – is the size of rate of a gain in %, V_1 – is the sign size at the beginning of the studied period, V_2 – is the sign size for the end of the studied period.

The greatest rate of a gain of technical characteristics is observed in the age from 10 till 12 years old. So, the rate of a gain of speed of running start of 11-year-old sportsmen made 9,1%, speed of a departure of GCG – 9,1%, a corner of a departure of GCG – 2,2%, a departure height of GCG – 16,0%, an impulse of force of pushing away – 29,4%, the time of pushing away decreased by 7,6%. The change of these characteristics also explains the greatest rate of a gain of productivity in high jumps in this aged period (16,4%). The second jump of a gain of technical characteristics is observed in 15-year-old age: the rate of a gain of productivity made 8,4%, running start speeds before pushing away – 4,6%, speed of a departure of GCG – 7,1%, a corner of a departure of GCG – 2,1%, departure height of GCG – 8,1%, an impulse of force of pushing away – 12,7%, and the time of pushing away decreased by 4,4%.

The rate of a gain of technical characteristics increases almost linearly from 12 years old till 14 years old, and the decrease in the rate of a gain of these parameters is observed from 16 years old.

Conclusions:

1. The problem of the definition the most informative special physical and technical parameters is one of the most important problems of the improvement of management of a long-term training of sportsmen-jumpers.

2. A very uniform structure of the group in understanding of the parametrical proximity of sportsmen is observed in the group in the analysis of training of jumpers in height from a running start. Special physical parameters are “quasidetermined” with a small dispersion, – that predetermines their parametrical proximity. The last circumstance makes the increased requirements to the accuracy of the spectral algebraist analysis of correlation matrixes of parameters ($\epsilon < 10^{-12}$).

Table 3

Indicators of a gain of the main technical characteristics and result in high jumps during the different aged periods

Indicators	Age in years							
	10	11	12	13	14	15	16	17
The sports result, m	1,17	1,38	1,52	1,62	1,72	1,87	1,94	2,01
An absolute gain	–	+0,21	+0,14	+0,10	+0,10	+0,15	+0,07	+0,07
The rate of a gain, %	–	16,4	9,7	6,4	5,9	8,4	3,7	3,5
Running start speed before pushing away, m·s ⁻¹	4,39	4,81	5,15	5,41	5,61	5,87	6,07	6,32
An absolute gain	–	+0,42	+0,34	+0,26	+0,20	+0,26	+0,20	+0,25
The rate of a gain, %	–	9,1	6,8	4,9	3,6	4,6	3,4	4,0
Speed of a departure of GCG of a sportsman at the time of a separation from a support, m·s ⁻¹	3,02	3,51	3,71	3,92	4,09	4,39	4,57	4,76
An absolute gain	–	+0,49	+0,20	+0,21	+0,17	+0,30	+0,18	+0,19
The rate of a gain, %	–	9,1	5,5	5,5	4,5	7,1	4,0	4,3
A corner of a departure of GCG of a body of a sportsman, gr.	48,92	50,03	50,42	51,01	51,37	52,46	52,70	52,94
An absolute gain	–	+1,11	+0,39	+0,59	+0,36	+1,09	+0,24	+0,24
The rate of a gain, %	–	2,2	0,8	1,2	0,7	2,1	0,5	0,5
Pushing away a phase duration, s	0,27	0,25	0,24	0,24	0,23	0,22	0,20	0,20
An absolute gain	–	–0,02	–0,01	0	–0,01	–0,01	–0,02	0
The rate of a gain, %	–	7,6	4,2	0	4,3	4,4	9,5	0
Departure height of GCG, m	0,46	0,54	0,59	0,65	0,71	0,77	0,81	0,85
An absolute gain	–	+0,08	+0,05	+0,06	+0,06	+0,06	+0,04	+0,04
The rate of a gain, %	–	16,0	8,8	9,7	8,8	8,1	5,1	4,8
An impulse of force of pushing away, H·s	106,40	143,17	169,42	200,27	249,09	282,92	320,35	349,93
An absolute gain	–	+36,77	+26,25	+30,85	+48,82	+33,83	+37,47	+29,58
The rate of a gain, %	–	29,4	8,4	16,6	21,7	12,7	12,4	8,8

3. The spectral analysis of correlation matrixes of parameters confirms a theoretical conclusion about the maximum number the most informative special physical parameters which equals 7: run of 30 m from a high start; sprinting speed (10 m with a rush); a jump up from a place from two feet; a long jump from a place from two feet; a triple jump from a foot on a foot from a place; a jump up, standing on a take-off foot, at the expense of a move of other foot; a jump up from three steps of running start.

4. The most informative parameters were selected on the basis of the correlation analysis from a total number of technical characteristics (the correlation coefficient from $r=0,426$ till $r=0,991$ respectively): running start speed before pushing away, speed of a departure of the general center of gravity (GCG) of a body of a sportsman at the time of a separation from a support, a corner of a departure of GCG of a body of a sportsman, pushing away a phase duration, departure height GCG of a body, an impulse of force of pushing away.

5. The analysis of results of the researches allowed finding out that fact that the dynamics of the aged changes of key parameters of technique of a high jump at different stages of a long-term preparation is unequal and depends on the age period.

6. The inclusion in the block of control of the limited number of parameters which adequately display the solution of tasks of stages of preparation allow finding out, whether the sportsman reached desirable standards for the transition to the following programs of training, that is to answer a question: the decision or not solved tasks to a stage. Besides, techniques of forecasting of the productivity of jumpers, selected tests of special physical and technical fitness are necessary for the subsequent development in height.

Prospects of the subsequent researches. The conducted researches testify to the need of the subsequent definition of the most informative parameters of special physical and technical fitness for all high-speed and power types of track and field athletics.

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Results of motor abilities and anthropometric and functional characteristics of physical preparedness of students-powerlifters with musculoskeletal system with different experience of taking exercises

Abstract. *Our investigation dedicates to the problem of improving students' health. Particularly, it refers to find out the ways of increasing students-powerlifters' health with musculoskeletal diseases based on powerlifting. **Purpose:** to study the influence of long – term powerlifting exercises on anthropometric and functional characteristics and motor abilities of students- powerlifters with musculoskeletal diseases. **Material and Methods:** methods of investigation: theory analysis, synthesis and generalization, testing and math's statistics and pedagogical experiment. There are 73 students with musculoskeletal diseases with different experience of taking exercises, 21 – had 1 year experience, 18 – 2 years, 12 – 3 years, 11 – 4 years and 11 – 5 years. **Results:** there are the differences of anthropometric and functional characteristics and the results of developing students' motor abilities with different experience of taking exercises. **Conclusion:** the investigation revealed that increasing of the students' sportsmanship shows the great growth almost all the investigated results.*

Keywords: *analysis, motor abilities, trainings, diseases, health, powerlifting, students, functional.*

Introduction. As experts note, the problem of the improvement of a state of health of students with defeats of the musculoskeletal system is particularly acute enough [1; 5; 8]. The analysis of the last researches and publications specifies that one of the perspective directions of its decision still remain the development and the deployment of the special techniques based on the use of powerlifting in out-of-school time [2; 6–8]. Thus it is most expedient to rely in the course of their development on the knowledge and approaches received in training of Paralympians and healthy sportsmen-powerlifters [6].

Studying of the big array of information specifies that the efficiency of the process of the development and the deployment of noted technique can be considerably increased under conditions of the solution of a number of problems [1; 3; 4; 6; 9]. One of such problems still remains a fragmentariness of data on what influence and on what systems are carried out by long-term powerlifting classes. It is noted above and caused the need of carrying out the research a purpose of which was to establish changes of anthropometrical, functional characteristics, and also indicators of the development of motive abilities of students with defeats of the musculoskeletal system in the course of long-term powerlifting classes.

Communication of the research with scientific programs, plans, subjects. The work is performed according to the comprehensive program of the research work of the chair of the Olympic and professional sport of Luhansk Taras Shevchenko National University developed behind a problem “Theoretic-methodical bases of study of physical culture and culture of health of student's youth” (subjects of education in norm and with special requirements), number of a state registration is 0110U000394.

The objective of the research. The above-mentioned caused the need of carrying out the research which purpose was a studying of influence of long-term powerlifting classes on anthropometrical, functional characteristics and indicators of the development of motive abilities of students with defeats of the musculoskeletal system.

Material and methods of the research. 73 students with defeats of the musculoskeletal system with a different experience of powerlifting classes took part in the experiment – 21 students had an experience 1 year, 18 – 2 years, 12 – 3 years, 11 – 4 years and 11 – 5 years respectively. The research methods: theoretical analysis, synthesis and synthesis of information, testing, mathematical statistics and pedagogical experiment.

Anthropometrical, functional characteristics and indicators of the development of motive abilities are determined at students by a research plan.

To anthropometrical characteristics of students were referred studying: age indicators (years old), length (sm) and weight (kg) of a body, size of thorax (sm) during an inhalation, an exhalation, and in a pause. Functional indicators estimated on the basis of registration of arterial pressure (mm mer.col.), vital capacity of lungs (ml) and a use “Shtange's test” (s) and Genchi's test” (s). Motive abilities or the level of physical fitness

of students with a different experience of classes defined by such tests: dynamometry of muscular groups of a hand, polydynamometry of five muscular groups of an arm (kg) behind a technique of B. M. Ribalka and to a bar press, lying – an assessment of power abilities; claps before itself and behind a back for 10 s in sitting position (number of times) – complex studying of high-speed and coordination abilities; a throwing of a stuffed ball from behind a head forward and through a head back (m) – a definition of high-speed and power characteristics; goniophotometry (gr.) behind a technique of B. V. Sermeyev – an assessment of mobility in shoulder joints; control exercise “static endurance of hands” (s) – a research of the level of endurance of muscles of hands of stronger and weaker arms. It was carried out after two-three days of rest for the purpose of an exception of influence of the previous classes on indicators of testing of the research.

Results of the research and their discussion. From the tab. 1 it is visible that there are no reliable differences ($p > 0,05$) between such anthropometrical parameters of students – sportsmen of adjacent courses, as age, growth and body weight. So, for example, length of a body of the surveyed is ranging from 168,9 to 171,2 sm, and indicators of body weight fluctuate ranging from 59,1 to 61,9 kg. Thus the one-direction improvement of indicators of size of a thorax is recorded. All parameters of size of a thorax grow parallel to the increase in an experience of classes: powerlifters with an experience of 1 year have indicators of size of thorax registered during an inhalation are equal 81,4 sm, during an exhalation and a pause – 71,9 and 76,7 sm respectively; at powerlifters who are engaged 5 years, the corresponding characteristics make 86,9 sm, 79,7 and 80,3 sm. Thus reliable differences ($p < 0,05$) are recorded: in indicators of size of thorax during an inhalation – between data of students with an experience 1 years and 2 years, and 3 and 4 years; in characteristics of size of thorax during an exhalation – between data of students of the 1 and 2 courses.

Such changes of anthropometrical indicators, in our opinion, connected with the improvement of certain functional characteristics (in particular, the vital capacity of lungs) and strengthening so-called “muscular of a corset” under the influence of regular trainings by powerlifting. Thus in the course of the experimental research the following dynamics of functional characteristics of students was recorded. It is revealed that arterial pressure in the course of long-term classes by powerlifting remains stable, answering indicators of a healthy person. Its values fluctuate within 120/75 – 122/76 mm mer.col.).

The analysis of indicators of vital capacity of lungs indicates their one-direction reliable ($p < 0,05$) growth at powerlifters in parallel with the increase of their experience of classes: students of the 1st course – 2667,8 ml; students the 2nd course – 3211,2 ml; students the 3rd course – 3256,5 ml; students the 4th course – 3351,3 ml; students of the 5th course – 3587,2 ml. Such increase of characteristics, in our opinion, should be connected with the positive influence of regular classes by powerlifting on the activity of cardiovascular and respiratory systems that causes including the increase of aerobic opportunities of a person. It is coordinated with opinion of many scientists concerning the influence of classes by physical exercises on a human body.

Table 1
 Anthropometrical and functional indicators of students with defeats of the musculoskeletal system in the course of powerlifting classes from the first to the fifth courses

Research indicators	The first course (n=21)		p	The second course (n=18)		p	The third course (n=12)		p	The fourth course (n=11)		p	The fifth course (n=11)	
	\bar{X}	m		\bar{X}	m		\bar{X}	m		\bar{X}	m		\bar{X}	m
Age, years old	18,5	0,26	>0,05	20,2	0,36	>0,05	21,4	0,38	>0,05	22,5	0,40	>0,05	23,5	0,40
Body length, sm	168,9	1,47	>0,05	169,2	1,52	>0,05	170,6	1,98	>0,05	170,9	1,99	>0,05	171,2	1,98
Body weight, kg	59,4	0,42	>0,05	59,1	0,37	>0,05	61,2	0,64	>0,05	60,9	0,58	>0,05	61,9	0,61
Size of thorax, sm	81,4	0,36	<0,05	83,9	0,38	>0,05	84,8	0,35	<0,05	86,9	0,39	>0,05	86,9	0,41
	71,9	0,44	<0,05	76,7	0,42	>0,05	78,5	0,51	>0,05	79,4	0,50	>0,05	79,7	0,49
	76,7	0,51	>0,05	79,5	0,63	>0,05	79,7	0,61	>0,05	79,8	0,68	>0,05	80,3	0,73
Blood pressure, mm	120/75	0,08	>0,05	120/75	0,08	>0,05	121/76	0,12	>0,05	122/75	0,14	>0,05	120/75	0,07
Vital capacity of lungs, ml	2667,8	8,5	<0,05	3211,2	10,1	<0,05	3256,5	11,2	<0,05	3351,3	11,6	<0,05	3587,2	10,87
Power of a stronger arm, kg	29,9	0,08	<0,05	37,7	0,07	<0,05	40,2	0,06	<0,05	44,2	0,08	<0,05	48,7	0,09
Power of a weaker arm, kg	28,1	0,06	<0,05	35,4	0,08	<0,05	39,2	0,08	<0,05	42,5	0,07	<0,05	46,5	0,08
Shtange's test, s	49,8	0,22	>0,05	51,4	0,23	<0,05	53,9	0,18	>0,05	55,0	0,19	<0,05	58,1	0,21
Genchi's test, s	31,3	0,18	>0,05	31,5	0,27	<0,05	34,8	0,19	<0,05	38,5	0,24	<0,05	42,2	0,25

Table 2
Indicators of physical fitness of students with defeats of the musculoskeletal system in the course of powerlifting classes from the first to the fifth courses

Research indicators	The first course (n=21)		p	The second course (n=18)		p	The third course (n=12)		p	The fourth course (n=11)		p	The fifth course (n=11)	
	\bar{X}	m		\bar{X}	m		\bar{X}	m		\bar{X}	m		\bar{X}	m
Claps before itself and behind a back for 10, quantity of times	22,34	0,26	<0,05	24,95	0,27	<0,05	28,41	0,19	>0,05	30,15	0,21	<0,05	35,2	0,20
A throwing of a stuffed ball from behind a head forward (m)	4,48	0,05	>0,05	4,76	0,04	<0,05	6,07	0,05	<0,05	8,11	0,09	<0,05	10,57	0,18
A throwing of a stuffed ball from behind a head back (m)	4,15	0,04	<0,05	4,48	0,03	<0,05	5,39	0,06	<0,05	7,13	0,07	<0,05	9,18	0,09
A bar press lying, kg	67,71	2,36	<0,05	76,59	2,41	<0,05	90,42	2,23	<0,05	99,73	2,19	<0,05	107,89	2,37
Mobility in shoulder joints of a stronger arm, gr.	71,87	2,31	>0,05	72,43	2,42	>0,05	72,58	2,51	>0,05	73,15	2,76	>0,05	73,18	2,84
Mobility in shoulder joints a weaker arm, gr.	70,42	2,85	>0,05	71,63	2,79	>0,05	72,37	2,63	>0,05	72,41	2,68	>0,05	72,52	2,78
Static endurance of a hand of a stronger arm, s	10,5	0,02	<0,05	12,9	0,03	<0,05	21,75	0,06	<0,05	31,18	0,07	<0,05	39,47	0,08
Static endurance of a hand of a weaker arm, s	9,4	0,01	<0,05	11,3	0,02	<0,05	19,42	0,07	<0,05	29,76	0,08	<0,05	37,63	0,06
Total indicator of power of 5 muscles groups of a stronger arm, kg	abs.	171,3	4,56	198,9	4,03	<0,05	246,8	4,28	<0,05	264,1	4,59	<0,05	281,2	4,63
	rel.	2,88	0,02	3,36	0,02	<0,05	4,17	0,01	<0,05	4,47	0,01	<0,05	4,76	0,02
Total indicator of power of 5 muscles groups of a weaker arm, kg	abs.	158,7	4,63	189,3	4,62	<0,05	235,4	4,81	<0,05	252,8	4,82	<0,05	269,3	4,45
	rel.	2,67	0,01	3,20	0,02	<0,05	3,98	0,01	<0,05	4,28	0,02	<0,05	4,56	0,02

Dynamics of indicators of Genchi's and Shtange's tests – other characteristics of functional preparedness of students – also indicates their essential growth along with the increase of sports skill of students. So, at powerlifters with an experience 1 year these indicators make 49,8 s and 31,3 s, with an experience of 2 years – 51,4 s and 31,5 s, 3 years – 53,9 s and 34,8 s, 4 years – 55 s and 38,5 s, 5 years – 58,1 s and 42,2 s respectively. It should be noted that thus statistically significant differences ($p < 0,05$) were recorded between the relevant data of students of 2 years of study and third-year students, and also – in the 4th year study and fifth-year students.

Studying of dynamics of indicators of motive abilities of students-sportsmen with defeats of the musculoskeletal system which are presented in tab. 2, also testifies to their one-direction increase in the course of long-term classes. So, also their power opportunities significantly improved parallel to a growth of the level of sports skill of students. Thus it is established a reliable ($p < 0,05$) growth of power abilities of powerlifters in all tests. So, for example, indicators of force of a hand of stronger and weaker arms of men steadily improve ($p < 0,05$): students of the 1 course – 29,9 and 28,1 kg; students the 2 course – 37,7 and 35,4 kg; students the 3 course – 40,2 and 39,2 kg; students the 4 course – 44,2 and 42,5 kg; students of the 5th course – 48,7 and 46,5 kg.

During the performance of the main competitive exercise – to a bar press lying – at powerlifters with an experience of classes of 1 year the result of 67,71 kg which authentically grew ($p < 0,05$) parallel to the increase of the level of sports skill was recorded, reaching in those who is engaged 2 years, – 76,59 kg, 3 years – 90,42 kg, 4 years – 99,73 kg, 5 years – 107,89 kg respectively.

Dynamics of other power characteristics of students – total indicators of absolute and relative force of five muscular groups of stronger and weaker arms – also specifies on their steady ($p < 0,05$) growth along with the increase of sports skill of students:

- characteristics of absolute force make 171,3 and 158,7 kg, relative force – 2,88 and 2,67 kg are noted at powerlifters with an experience 1 year;
- indicators of absolute force – 198,9 and 189,3 kg, relative force – 3,36 and 3,2 kg at powerlifters with an experience 2 years;
- parameters of absolute force – 246,8 and 235,4 kg, relative force – 4,17 and 3,98 kg at powerlifters with an experience 3 years;
- characteristics of absolute force make 264,1 and 252,8 kg, relative force – 4,47 and 4,28 kg are noted at powerlifters with an experience of 4 years;
- indicators of absolute force – 281,2 and 269,3 kg, relative force – 4,76 and 4,56 kg respectively at powerlifters with an experience 5 years.

The analysis of results of the experimental research presented in tab. 2 also specifies that the increase of sports qualification of students-powerlifters with defeats of the musculoskeletal system is followed steady ($p < 0,05$) by the improvement of their high-speed and coordination abilities. So, the result of 22,34 times which authentically grew ($p < 0,05$) parallel to the increase of level of sports skill was recorded during the implementation of the test “claps before itself and behind a back for 10 s (in sitting position)” at powerlifters with an experience of classes of 1 year, reaching in those who is engaged 2 years, – 24,95 times, 3 years – 28,41 times, 4 years – 30,15 times, 5 years – 35,2 times.

The analysis of results of a throwing of a stuffed ball from behind a head forward and through a head back also specifies on a steady ($p < 0,05$) improvement of high-speed and power characteristics of students-sportsmen in the course of long-term classes by powerlifting: students of the 1 course show 4,48 and 4,15 m; students of the 2 course – 4,76 and 4,48 m; students of the 3 course – 6,07 and 5,39 m; students of the 4 course – 8,11 and 7,13 m; students of the 5th course – 10,57 and 9,18 m. The research of influence of long-term classes by powerlifting on indicators of mobility in shoulder joints found a considerable ($p < 0,05$) growth of these parameters – from 71,87 gr. (a stronger hand) and 70,42 gr. (a weaker hand) at students-sportsmen with a one-year experience of classes, to 73,18 and 72,52 gr. at students-powerlifters with a five-year experience. Thus it wasn't recorded statistically significant ($p > 0,05$) differences between noted indicators of students-sportsmen of the adjacent courses. The analysis of results of the conducted experimental researches also specifies that the increase of sports qualification of students-powerlifters with defeats of the musculoskeletal system is followed steady ($p < 0,05$) by the improvement of the level of static endurance of hands:

- static endurance of a hand of a stronger hand of students-sportsmen with a one-year experience of classes equals 10,5, a weaker – 9,4 s;
- students with an experience of 2 years – respectively 12,9 and 11,3 s;

- students with an experience of 3 years – respectively 21,75 and 19,42 s;
- students with an experience of 4 years – respectively 31,18 and 29,76 s;
- students-powerlifters with a five-year experience – respectively 39,47 and 37,63 s.

Conclusions:

1. On the one hand, the conducted experimental research allowed finding as far as anthropometrical, functional parameters and indicators of the development of motive abilities at students with defeats of the musculoskeletal system differ which have the different experience of classes by powerlifting and respectively the different level of sports skill. Thus it was established that the increase of sports skill of students is followed a reliable ($p < 0,05$) growth of practically all studied indicators.

2. The greatest number of statistically significant ($p < 0,05$) differences is recorded between indicators of students-sportsmen of the adjacent courses which characterize:

- functionality (Genchi's test);
- vital capacity of lungs;
- power opportunities (a measurement of force of a hand, a definition of total indicators of absolute and relative force of five muscular groups of a hand, the test "a bar press, lying");
- high-speed and coordination abilities ("claps before itself and behind a back for 10 s");
- high-speed and power opportunities (tests "a throwing of a stuffed ball from behind a head forward and through a head back");
- mobility in joints (an assessment of mobility in shoulder joints).

3. On the other hand, results which are coordinated with materials of researches of F. Hassan, A. Mutasem and other experts were received who point to the powerful positive influence of specially developed techniques based on the use of physical exercises on an organism of persons with defeats of the musculoskeletal system, in particular, on anthropometrical, functional characteristics and motive abilities.

Prospects of the subsequent researches can be connected with studying of the influence of classes by powerlifting on mental health of students.

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Some contradictions in contemporary assessment acrobatic elements used in the compositions of the category “B-Class” in acrobatic rock’n’roll

Abstract. Purpose: determine the impact of an innovative approach to improve the special physical and technical training of qualified athletes in acrobatic rock’n’roll. **Material and Methods:** theoretical analysis and synthesis of the literature, the competition rules, policy papers and documents catalog acrobatic elements “in class”. The basic material for analysis was the changes to the 2014 WRRRC, judging changes in their sport. **Results:** studied the catalog acrobatic elements “B-Class” (version 2 WRRRC from 14.09.2014), reviewed and analyzed the results of stronger pairs category “B-class” in acrobatic rock’n’roll (World Cup, Russia, Sochi, Russia). The analysis of the requirements of execution of acrobatic elements. **Conclusions:** these findings demonstrate the need for an innovative approach to improve the special physical and technical training of athletes acrobatic rock and roll category “B-Class”. The difficulty level of acrobatic elements in acrobatic rock ‘n’ roll should be differential with respect to each of the age groups in their strict sequence the category “juniors” – “B-class” and “M-class”.

Keywords: acrobatic rock and roll, catalog acrobatic elements “B-Class” WRRRC (World Rock’n’Roll Confederation).

Introduction. The acrobatic rock’n’roll belongs to a group of difficult coordination sports as its main contents are interactions of partners, issued in the motive compositions, which are carried out by them to music. The modern sports pairs who are specializing in acrobatic rock’n’roll improve the level of sports skill generally due to the inclusion in the compositions of difficult acrobatic exercises used by them [12], and also due to the use of special choreographic preparation [7; 8]. The noted tendencies objectively predetermine the emergence of new directions in technical and special physical training of sportsmen [4; 10]. This process is also stimulated, on the one hand, with the imbalance existing at the moment in a refereeing assessment of a performance by sportsmen of difficult acrobatic exercises and compositions in general [1; 13], and on the another hand, a vagueness of formulations of rules of competitions. As a result, there is a difficult situation on the definition of winners at competitions of the world level. The sportsmen applying for prize-winning places and fulfilling requirements of rules of competitions often carry out acrobatic exercises and combination of stunts not “winning” (amplitude, complexity and originality of an execution) for a concrete couple.

The analysis of the video records received on the World Cup (Sochi 2014) testifies to one problem of training of the sportsmen specializing in acrobatic rock’n’roll, namely, to an absence of interrelation and continuity of transition of sportsmen from one category to another [2]. There are rather small number of couples which passed the transitional period from the category “B-Class” in the category “M- Class” in the history of the development of acrobatic rock’n’roll of the WRRRC. It testifies to an absence of sequence in stages of long-term preparation of sports pairs in acrobatic rock’n’roll [8].

Communication of the work with scientific programs, plans, subjects. The researches were conducted within the implementation of the complex scientific project on 2013–2014 “Theoretic-methodologic principles of the formation of culture of physical health of student’s youth”.

The objective of the research: to define the main contradictions in a modern assessment of acrobatic exercises which are used in acrobatic rock’n’roll in compositions of the category “B- Class” and also to plan ways of their decision.

The tasks of the research:

1. The analysis of scientific and methodical literature on a problem of the improvement of competitive compositions of the category “B- Class” in acrobatic rock’n’roll.
2. The analysis of acrobatic exercises (version 2) of the category “B- Class” of the catalog of the WRRRC of 2014.
3. To open the main regularities of the increase of technical complexity and the dynamics of development

of acrobatic exercises and competitive compositions in general, in connection with changes of rules of competitions.

Material and methods of the research. The complex of scientific methods was used for the solution of the set tasks:

1. The theoretical analysis and synthesis of references, rules of competitions, program materials and documents, catalog of acrobatic exercises of "B- Class". Changes in rules of the WRRRC of 2014 served as the main material for the analysis, which give a real picture of tendencies of the development in acrobatic rock'n'roll of the complexity of acrobatic exercises and dancing compositions, features of an execution of compositions, changes in a system of refereeing in this sport.

2. The analysis of the video record (World Cup, Russia, Sochi 2014)

Results of the research and their discussion. At General meeting of members of the World rock'n'roll confederation (WRRRC) which was carried out in 14.09.2014, the catalog and the rating scale of acrobatic exercises of sports pairs "B-Class" were approved. The analysis of this catalog showed the discrepancy in complexity of a performance of acrobatic exercises and their combination of stunts in the category "B-Class". So, elements are offered on the pages from the 20th till the 26th which are used in a hand balancing man's acrobatics (tab. 1).

Table 1

Characteristic and cost of acrobatic exercises of the category "B-Class" (version 2) of the WRRRC catalog of 2014

No	Element code	Cost (points)	Characteristic of an element	Note
1	B-1-3-T-08 B-1-3-T-09 B-1-3-T-10 B-1-3-T-11	D-7 D-7 D-7 D-7	Performance of an element by a female partner corresponds to the complexity of a work of a partner in a man's acrobatic couple	p. 20 p. 22 p. 24 p. 26
2	B-1-3-P-08 B-1-3-P-09 B-1-3-P-10 B-1-3-P-11	E-8 E-8 E-8 E-8	Performance of an element by a female partner corresponds to the complexity of a work of a partner in a man's acrobatic couple	p. 20 p. 22 p. 24 p. 26
3	B-1-3-S-08 B-1-3-S-09 B-1-3-S-10 B-1-3-S-11	F-9 F-9 F-9 F-9	Performance of an element by a female partner corresponds to the complexity of a work of a partner in a man's acrobatic couple	p. 20 p. 22 p. 24 p. 26
4	B-1-3-T-08-T B-1-3-T-09-T B-1-3-T-10-T	E-8 E-8 E-8	Performance of an element by a female partner corresponds to the complexity of a work of a partner in a man's acrobatic couple	p. 21 p. 23 p. 25
5	B-1-3-P-08-T B-1-3-P-08-T	F-9 F-9	Performance of an element by a female partner corresponds to the complexity of a work of a partner in a man's acrobatic couple	p. 21 p. 23
6	B-1-3-S-08-T B-1-3-S-09-T B-1-3-S-10-T	G-10 G-10 G-10	Performance of an element by a female partner corresponds to the complexity of a work of a partner in a man's acrobatic couple	p. 21 p. 23 p. 25

An estimated range (points) of separate acrobatic exercises in comparison with others is doubtful (tab. 2).

Table 2

Discrepancy of the complexity of performance of elements and their cost

No	Element code	Cost (points)	Characteristic of an element	Note
1	B-2-2-T-01 B-2-2-T-02	C-6 C-6	Discrepancy of complexity of a performance of the offered elements and their cost	p. 29 p. 30
2	B-2-2-P-01 B-2-2-P-02	D-7 D-7	Discrepancy of complexity of a performance of the offered elements and their cost	p. 29 p. 30
3	B-2-2-S-01 B-2-2-S-02	E-8 E-8	Discrepancy of complexity of a performance of the offered elements and their cost	p. 30 p. 31
4	B-2-2-T-03 B-2-2-P-03 B-2-2-S-03	C-6 D-7 E-8	Arrival of a female partner behind a back of a partner. Loss of an amplitude Contact in a couple is doubtful	p. 31 p. 31 p. 32

The classical performance of an element – back todes (B-3-1-01) from the catalog on p. 36 is almost depreciated (A-4) in relation to its performance from static starts and hand spots (B-3-1-02,03,04,05,06,07,08,09; B-3-2-14) on p. 37, 38, 39, 40, 41. A performance of start “staf” (fus) (B-6-1) on p. 48 and “twist” are underestimated in an assessment by the cost of A-4, and in this regard are practically not used by sports pairs in compositions. It is also necessary to note that acrobatic exercises (B-6-1) – “twist 360, 540 and 720” (p. 49-50) are injury-causing that significantly limits possibilities of their use. The acrobatic exercises presented in the WRRRC catalog for sports pairs of “B-Class” and the minimized presence in it of the auxiliary (lead in) element “staf” (fus), and also its low estimated cost confirms a lack of the consecutive system of acrobatic preparation of couples in the course of their transition from the category “B-Class” to the category “M-Class”. In other words it is possible to tell that, on the one hand, acrobatic exercises which according to the catalog have to be carried out by sports pairs of the category “B-Class”, have a high cost, however in the category “M-Class” their importance decreases significantly. On the other hand, a cost, for example, of the lead in element “staf” (fus) for couples of the category “B-Class” is significantly underestimated in comparison with acrobatic exercises while their importance significantly increases in the category “M-Class”. The allocated contradiction in its essence produces the divergence in preparation of the sports pairs acting in the categories “B-Class” and “M-Class” that breaks the basic principles of the creation of the system of long-term training of sportsmen [12]. It is also necessary to note that the contradictions allocated above complicate also the process of refereeing in acrobatic rock’n’roll [1; 13]. In our opinion, the following characteristics have to be put in a basis of the system of estimates of compositions and acrobatic exercises [6; 11]: the spatial – an accuracy of a performance of an element; the temporary – an exact time of movements when performing an element; the dynamic – amplitude and easiness of a performance of an element. Respectively, referees have to use the following criteria at an exposure of estimates for acrobatic exercises: the accuracy of performance of an element has to prevail in spatial characteristics; in temporary characteristics – an optimum time of the movement in an element; in dynamic characteristics – amplitude and ease of a performance of an element). Thus, there are distinguished from criteria for an assessment of an execution of acrobatic exercises: accuracy, time of an execution of an element, easiness of a performance of the estimated element or combination of stunt [5; 11].

Conclusions:

1. The approval of the WRRRC catalog for the category “B-Class” produces the divergence in preparation of sports, couples acting in the categories “B-Class” and “M-Class” that breaks the basic principles of the creation of the system of long-term training of sportsmen.

2. The carried-out analysis showed that innovative approach in technical and special physical training of sportsmen of acrobatic rock’n’roll can create a platform for the performance of new super difficult acrobatic exercises and competitive compositions in their strict subordination from the category “juniors” – “B-Class” and “M-Class”. The level of the complexity of acrobatic exercises has to be differentiated in the relation to each age category in this sport.

The prospect of further researches consists in the research of changes of the level of special physical and technical fitness of the sportsmen who are engaged in acrobatic rock’n’roll at various stages of long-term preparation.

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The management decisions in government management structure of physical training

Abstract. Purpose: is to improve the technology of management decision as for the function of making decision in the problem of choosing the variant. **Material and Methods:** analysis of scientific sources, analysis of the documents, organizational analysis. **Results:** different forms of management decisions are done, the structure of the decisions in the forms of orders are offered, the orders that are created due to the regional management structure are analyzed, the quantity of fulfilled orders are shown, the reasons of unfulfilled orders are observed, the typical decisions of the orders and their corrections are done. **Conclusions:** the necessity of making the decisions are explained by conscious and aimed character of human's activity. The improvement of making the management decisions are done according to the use of scientific approach, different models and methods of making decisions in the management structure of physical training and sport.

Keywords: analysis of decisions, structure, technology, regional management structure, management activity, management functions, orders.

Introduction. One of the real opportunities of the increase of efficiency and quality of rendering services of the population is put in the sphere of management of the system of physical culture. The increase of complexity and scale of the tasks facing the system of physical culture demands the introduction consistently and steadily of the carried out system of measures in the field of the organizational forms of the government by branch, the rationalization of technology of an administrative cycle, the improvement of style and methods of the administrative activity.

The theory of scientific management provides the following main parts: contents, technology, functions, methods, principles, structure, communications, result [4].

The administrative decision is a result of the analysis, forecasting, optimization, economic justification and choice of alternative from a set of options of the achievement of a specific aim.

A person or a governing body making the decision heads the development of the administrative decision. As a rule, functions of decision-making concerning the development, strategic planning and the current, operational management are divided between the first and second persons who are carrying out the management.

Communication of the research with scientific programs, subjects, plans. The work is performed in compliance with the Plan of the research work of the academy for 2013-2015. "Methodological bases of the strategic development of the sphere of physical culture and sport in the region" (number of the state registration is 0113U004615).

The scientific novelty of the research is as follows:

- the system of an adoption of administrative decisions in the sphere of physical culture and sport is considered and proved in theoretic-methodological aspect;
- the analysis of an adoption of administrative decisions (orders) is carried out in the regional management of physical culture and sport;
- the complex characteristic of function of an adoption of the administrative decision is given in the regional governing body of physical culture.

The practical importance of the research is defined by that the elicited technological facts of an adoption of the administrative decision (orders) allow predicting and carrying out in governing bodies of physical culture on a scientific basis more effective decisions.

In the methodological plan this work arms heads of governing bodies of physical culture of methods of the use of scientific approach in functions of an adoption of administrative decisions.

The object of the research are the regional governing bodies of physical culture and sport making the operating impact on the subordinate organizations through the function of adoption of administrative decisions.

The subject of the research is the organizational and administrative activity of the regional management

concerning physical culture and sport on adoption of administrative decisions.

The objective of the research: the improvement of technology of the administrative activity of the function of an adoption of the administrative decision in a question of a choice of this or that option.

The tasks of the research:

1. To prove the management of physical culture of function of an adoption of administrative decisions in the theoretic-methodological aspect.
2. To reveal the technology of implementation of function of an adoption of administrative decisions.
3. To define forms, types, essence, principles of an adoption of administrative decisions.
4. To make the analysis of the made decisions by the regional management concerning physical culture and sport.

Material and methods of the research. The following methods of the research were used for the solution of the specified tasks:

- analysis of references;
- analysis of documents;
- organizational analysis.

Analysis of references. Works of the native scientists M. V. Dutchak, V. V. Prikhodko, O. N. Zhdanova, Yu. P. Michuda, S. V. Svistunov, of foreign authors K. A. Voronova, I. I. Pereverzin, V. G. Nikitushkin, L. M. Aristova, V. V. Galkin concerning the general theory of governing the state, legal science, economy, physical culture were a subject to studying. Methods, forms, functions of the organization and the management of physical culture and sport, the expediency of application of functions in the management were studied. The works of scientists of the chair of management of Kharkov state academy of physical culture were analyzed. (A. V. Gorbenko, G. N. Putyatina, I. I. Prikhodko, V. I. Mudrik, S. A. Stadnik, N. V. Sereda).

Analysis of documents. This method was applied to the determination of key parameters in the work of the governing bodies of physical culture and sport following from resolutions of the governing bodies given to the statistical reporting, the main indicators of the work of the sports organizations, identification of public opinion about a condition of the management recorded in official documents.

The documents created in the regional management on physical culture and sport on an adoption of administrative decisions, orders and resolutions were exposed to the research.

The organizational analysis is a specific method of management science. Its application is especially justified at an integrated approach to studying of administrative decisions when it is necessary to dismember the studied object previously on its separate components with the subsequent group and classification of the obtained data. On the basis of results of the organizational analysis the means of the information support of physical culture and sport promoting an adoption of the administrative decision were revealed.

Results of the research and their discussion. The work on physical culture and sport is carried out now by about three million various organizations of a physical and sports orientation in Europe, Asia, Africa, America. Heads and the personnel of these organizations daily should solve a wide range of the most various questions and problems – from carrying out actions in CPC, sports clubs before carrying out grandiose sports and spectacular actions – such as, for example, the championships of the countries, continents, the world and the Olympic Games.

Employees of governing bodies of physical culture have to achieve a unity of knowledge, belief and practical actions in the course of their activity for the solution of the tasks facing them, to be able to make the correct administrative decisions and further to exercise a control of their performance [1; 5].

We proceeded from that fact that for any process of the development and decision-making, where and whoever it was carried out, available the general characteristic approaches at the consideration of a problem of the adoption of the administrative decision (AAD). Its stages are such a core of the process of AAD which in a certain sequence carry out operations on the development and the implementation of administrative decisions. There is no consensus concerning the quantity of stages in literature among the scientists studying the theory of AAD.

The process of certain actions during the developing and the adoption of the administrative decision will be more effective if we know, what role functions are carried out by this or that expert, being at different positions.

During the developing and adoption of the administrative decision the head, irrespective of a post, carries

out different roles, for example, at data collection and processing acts as the recipient of information; building the system of preparation and retraining of the personnel, he acts as a strategist.

The conducted researches of I. I. Prikhodko, V. M. Bogmatser [4] allowed revealing more than 50 operations which at the different levels of the management (the highest, the average, the lowest) are carried out by the head. The role functions which are carried out by the head at the different levels repeat, however their volume depending on hierarchy – is different. The overall performance of any physical and sports organization depends on the correctness and the timeliness of decision-making. Therefore it is important that each expert of physical culture and sport seized theoretical knowledge and skills of technology of administrative decisions.

The administrative decisions on physical culture and sport in a form are made in various forms [7].

The order – is the normative legal act issued individually by the head of the state physical and sports organization or his deputy acting on the one-man management basis for the permission of the main and operational objectives.

The command – is the legal act issued by the head of the organization, mainly a collegial body of management for the permission of operational issues. As a rule, it has a limited validity period and concerns a narrow circle of officials.

The decree – is the statutory act adopted jointly by a board of management, sport committee, presidium of sports federation or council of VPSS. The decree represents the target solution of an actual problem with the indication of the purpose, ways and resources, the establishment of terms, performers and the organizations of control over the implementation.

The plan is a complex of the tasks united by a common aim which need to be executed in a certain order, sequence and in the established periods.

The purpose program – is the normative address document containing an exhaustive complex of the interconnected tasks which implementation provides the effective achievement of the objects which are set by the organization in the established periods. The purpose comprehensive program includes actions of program and methodical, organizational and social and economic character.

The business plan is a document in which the complex description of the main aspects of the planned future of the sports organization is given, the purposes of a problem arising at the achievement are analyzed and the financial resources necessary for their decision are defined.

In recent years administrative decisions in the form of various contracts, contracts etc. were widely adopted in the sphere of physical culture and sport.

To understand all set of various administrative decisions on physical culture and sport, they can be classified by several signs: on subjects and hierarchical levels of management; on objects of management: for whom this decision – sport committee is intended, to sports federation, sports club, sports construction, sports school, etc.; in a form of the existence of the decision can be oral or written. On the organization of the acceptance of administrative decisions are subdivided on individual, corporate and collective. On the social importance one decision are initial, defining, for example, “The law of Ukraine on physical culture and sport”, others – are derivatives. On time of action of the decision it is possible to divide on quick and perspective, strategic. Decisions are subdivided on a volume and an orientation of the contents [2; 3; 7].

One administrative decision contain the general concept of the development of physical culture and sport in general in the country, others are more concretized and concern one or several organizations of physical and sports orientation.

Administrative decisions have to be made within the powers existing at the subject of management, the rights and duties of the sports head. Different types of administrative decisions define also different ways of their development and acceptance, sources and contents of the used information, and also feature of the implementation of the made decisions.

In the research 210 orders were analyzed. The structure of orders according to the classification of administrative decisions is presented in the table.

The array of the orders issued by the regional management on physical culture and sport has similar quantitative indices. The made decisions are directed as a rule on the system of physical culture and sport in general or its separate subsystems, corresponding thus to the general conceptual directions of the development of the region.

Significantly initiative decisions prevails which share exceeded 90%. The volume of the most significant

The structure of orders of the regional management on physical culture and sport

Classification signs	Types of decisions	Quantity	
		abs.	%
On a degree of the activity of participants of the management process	1. Initiative, planned	190	90,1
	2. In pursuance of the indication of higher bodies of management	20	9,9
	Total	210	100
According to the contents	1. Organizational and administrative	65	30,8
	2. On communications with cities and areas	44	20,8
	3. Administrative (sport constructions)	40	19,3
	4. Work with CYSS	13	6,3
	5. On work with specialists	48	22,8
	Total	210	100
On the execution time	Strategic (long-term)	2	0,9
	Tactical (annual)	13	6,1
	Current (quick)	38	18,4
	Routine (periodic)	157	74,6
	Total	210	100

defining decisions averaged 3,4%. The acceptance of the majority of orders is caused by the need of the solution of the operational (current) issues and responses to periodically arising typical situations including the connected ones with certain sports. The tactical orders made 6,1%. Among the coordinated orders the decisions developed together with the department of education, health care, finance are the most often met.

The comparison of arrays of orders by the criterion of pithiness, the most representative are groups of orders of the organizational and administrative character of 30,8%, a condition of the work with specialists of 22,8%, orders of an administrative orientation of 19,3% on communications of cities and regions of 20,8%.

The personnel decisions which are the most priority are connected generally with questions of the professional development, problems of the use and the placement of personnel.

The share of standard decisions on the organization and carrying out various sports competitions, meetings, and seminars is very high in the structure of orders.

Similar organizational and administrative decisions, along with the majority of administrative orders, represent the administrative decisions classified as routine, having rather accurate and in advance ordered regulation of their acceptance, registration and bringing to performers.

The share of routine decisions in an array of orders averaged 74,6%, considerably having exceeded thus volumes of the current, tactical and especially strategic decisions. For the analyzed period more than 6% of tactical decisions and less than 1% of decisions strategic are made a little more. 18,4% of orders fall to the share of the current administrative decisions on average. By results of the conducted research only the small part of administrative decisions, orders (25%) contains accurate plans and programs of the realization of the planned actions, concrete dates of the performance and forms of bringing the decision to performers.

Results of the carried-out analysis of the structure of administrative decisions allowed revealing a group of standard decisions to which share more than 20% of all adopted orders are. This group included the same orders issued every year or several times within a year. The implementation of the decision, in turn, depends on the

quality of the plan of realization, is defined by the selection of performers, resource providing, the organization of the operational work, the execution monitoring system, timely updating of the decision. In addition, strong-willed features of the head, psychology of performers have essential impact on the implementation of the decision.

The organization of the implementation of the decision begins with an explanation of sense and value of the made decision, features of organizational actions, and the planned results. After the implementation of the decision began, the important role is got by a control of the course of its performance. Its main task – is to provide the achievement of the planned purposes, to prevent the failure of the made decision. The systematic analysis of the course of the implementation of the decision, timely identification of deviations from the set program and taking measures to their elimination are for this purpose are necessary.

The need of specification of terms of performance, respectively in 11,5 and 14,8% of cases was the main reason for adjustments at the implementation of orders and commands.

The analysis of their conductivity was carried out, i.e. the end results of administrative activity were studied for the purpose of an integrated assessment of the process of adoption of administrative decisions. As criteria timeliness and completeness of the execution of decisions were chosen. According to official figures, more than 65% of decisions are realized in time. Dates of the performance of 35,0% of decisions weren't sustained. Mainly it occurred because of the establishment of unreal dates of the performance and depended directly on performers. Terms of the postponed decisions in connection with the insufficiency of material support made 15,5%.

The group of unrealized decisions generally consists of partially executed 14,1%. The main reasons involving non-performance of decisions are the relation of performers (84,9%) and the lack of necessary material support (15,1%).

Thus, the need of the improvement of the organization of the management process, expediency of a wider use of modern technologies is obvious from the carried-out analysis. The analysis of the theory and the practice of management allowed establishing the need of application of scientific approaches.

Conclusions:

1. The increase in amount of information in sports organizations, the development of plans, tasks to specific performers demands the special preparation of organizational and administrative specialists. The need of decision-making is explained by conscious and purposeful nature of the human activity, arises at all stages of the management process and makes the part of any function of management.

2. Decision-making – is not the one-stage act, but the result of the process having a certain duration and structure. The improvement of the process of the adoption of administrative decisions and respectively the improvement of quality of the made decisions is reached due to the use of scientific approach, models and methods of decision-making in governing bodies of physical culture and sport.

Prospects of the further researches are in that other functions of management will be investigated in governing bodies, namely: planning, organization, control, including in the provinces of People's Republic of China.

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The use of e-learning in higher education

Abstract. Purpose: analyzing the possibility of introducing means “e-learning” in the sphere of student physical culture and sport. **Material and Methods:** in the study used theoretical methods, including analysis and synthesis of literature and materials located on the Internet. **Results:** considered theoretical information about “e-learning”. **Conclusions:** It was found that there are many definitions of the term “e-learning”; established the existence of: common elements of distance and “e-learning”; specific qualitative properties of e-learning, strengths and weaknesses. On the basis of theoretical analysis of “e-learning” can be argued that “e-learning” can and should be embedded in the sphere of student physical culture and sports.

Keywords: innovation, learning process, physical culture, electronics learning.

Introduction. The present stage of the development of the world economy is characterized by a transition from the industrial to information society in all spheres of the human activity. Such transition demands introduction of the modern intellectual information technologies which have a considerable impact on different processes in the sphere of educational services [9].

The rapid progress in the branch of information technologies allows using personal computers as an effective remedy of a study. Automation of the process of a study is carried out with the use of computer training programs and electronic textbooks which are used not only with the use of magnetic carriers (laser disks), but also with an application of local and global computer networks. In the latter case there are formations of specialized information-educational environments that allows realizing modern technologies of a study. For filling of information-educational environments, and also for the effective use of local and global computer networks it is necessary the expeditious development of quality electronic training courses which answer a current state of science in this subject branch [6].

The general objective of the creation of electronic training courses – is the increase of efficiency of the process of assimilation of knowledge and the improvement of quality of training of specialists. In the system of internal education the electronic training courses can be used as additional educational resources which allow organizing methodically correctly the independent work of students controlled by a teacher in quality. Thus, the gradual introduction of technologies of open education, in particular, to a method of electronic study will be carried out within internal education. At the same time in the system of open education the electronic training courses are the main source of educational information for those who is taught.

The data on a condition of the electronic study in our country and around the world testify to an urgent need of its stimulation to provide the dynamic and progressive development and the introduction on all education levels, first of all, – higher because the electronic study is the innovative technology directed on professionalizing and the increase of mobility of those who studies and at the present stage of the development of ICT it can be considered as a technological basis of a fundamentalization of the higher education [10, p. 84].

The development of the information infrastructure of the society and the professional activity makes a number of new demands to training of specialists. Studying of the innovative pedagogical experience and the analysis of scientifically methodical literature showed that the use of modern communicative and information technologies is the most important reserve of the improvement of the system of multilevel education. The analysis of a condition of a question shows that information-communicative technologies didn't find the appropriate appendix for the objective and subjective reasons [8] yet at the present stage in the system of physical culture and sport.

Authors [1; 3] specify in the researches that the special place among means of information technologies of a study is taken by computer educational systems. Such systems give the chance to students independently to study material, having worked it in the interactive mode.

L. V. Filenko in the work [13] notes that the use of information technologies is an effective remedy of

optimization and improvement of quality of training of students in the educational process. She investigated the interrelation of individual cognitive qualities of students with the level of assimilation of a training material means of computer technologies and they are confirmed a direct influence on the level of assimilation of a training material.

A number of researchers were engaged in the analysis of problems of introduction of means of an “electronic study” in the educational process of students: V. S. Ashanin (2004); V. A. Druz; (2005) N. M. Kiyanovska (2012); T. S. Klyebanova (2010); V. S. Ponomarenko (2009; 2010); S. O. Semerikov (2009); P. I. Fedoruk (2008); L. V. Filenko (2007), R. M. Yatsenko (2010; 2012) and others. However the analysis of an opportunity and an algorithm of introduction of means of “electronic study” wasn’t revealed in the sphere of physical culture and sport of students of a day form of a study that caused the formulation of a subject and a statement of the research objective.

Communication of the research with scientific programs, plans, subjects. The work is performed according to the plan of the RW of the chair of physical training and sport of Simon Kuznets Kharkiv National University of Economics by the subject “Administrative aspects of functioning of the chair of physical training and sport”.

The objective of the research: to analyse the possibility of introduction of means of “electronic study” in the sphere of physical culture and sport of students.

The tasks of the research:

1. To define the basic concepts, characteristic features, advantages and shortcomings of “electronic study” on the basis of the analysis of references.

2. To draw conclusions by the topic of the research.

Material and methods of the research. The used theoretical methods of the research, including the analysis and the generalization of special literature and the materials which are posted in Internet.

Results of the research and their discussion. The concept “electronic study” (e-learning) is used near the old term today “remote study” which for the first time gained legal recognition in the Law of Ukraine “About the national program of informatization” of February 4, 1998 [4]. Further the remote form of a study got legislative fixing in the art. 42 of the Law of Ukraine “About the higher education” [5]. Also terms are used: “e-learning” (electronic learning), “teleteaching”, “Internet-based learning”, “Open learning”, “online learning”. The whole noted terms unite such common features as the use of information technologies when providing educational services; the possibility of communication between a student and a teacher online; the remote access to training materials. C. O. Semerikov allocates elements of the system of “electronic study” which are the general with the oneremote [10, p. 91–92]:

– semantic objects: the training material is divided into modules which contain objects of the different kind – text, graphics, image, audio, animation, video and so forth. As a rule, they are stored in a database and available depending on needs of subjects of a study. The study individualization is a result – students receive only that is necessary for them, taking knowledge at a desirable speed;

– communities: students can create Internet-communities for a mutual aid and an exchange of messages;

– expert online help: teachers or experts (instructors of a course) are available in a network to carrying out consultations, answers on questions, organizations of discussion;

– opportunities for cooperation: by means of the corresponding software it is possible to organize on-line conferences, collaboration over the project of the students geographically remote one from another;

– multimedia: modern audio and video technology of representation of training materials for the purpose of the stimulation of aspiration of students to acquisition of knowledge and increases of efficiency of a study.

N. M. Kiyanovska, with the link to authors, direct some definitions of the concept “electronic study”:

1. Mark Rosenberg gives such interpretation to the term e-learning: e-learning – is a use of Internet-technologies for granting a wide range of decisions which provide the increase of knowledge and labor productivity; e-learning is based on three basic principles: work is carried out on a network; delivery educational to content to the end user is carried out by means of a computer with the use of standard Internet-technologies [11; 17].

2. Allison Rossett defines e-learning so: **Web-study (WBT) or “electronic study”, or online study**, is a training which is on a server or on a computer, connected to the net Internet (World Wide Web) [15].

3. Specialists of UNESCO consider that e-learning is a study for the help of Internet and multimedia [14].

4. **E-learning** – is the study constructed with the use of information and telecommunication technologies. It covers all range of actions, beginning from the support of the study process till the delivery of educational content to listeners [18].

5. According to V. Y. Bikov, “**electronic remote study**” — is a kind of a remote study by which participants and organizers of the educational process carry out mainly individualized interaction as asynchronous, and synchronously in time, mainly and essentially using electronic transport systems of delivery of means of a study and other information objects, computer net Internet, media educational means and information-communication technologies [16].

6. **Electronic study** (e-learning) is the technology of a study based on the use of computer aids and systems of data transmission for representation and delivery of knowledge, support of interaction of a student and a teacher, and also control of knowledge [11].

Specific *qualitative properties* of “electronic study” [16]:

1) *flexibility and adaptability* of the educational process to requirements and opportunities of students who generally don't attend regular trainings, and work in a convenient time (both for a teacher, and for a student) for such work in a convenient place and convenient speed;

2) *modularity of a creation* of training programs;

3) *a new role of a teacher*: a teacher coordinates the educational and informative process, corrects a course which spreads, directs educational projects, checks the current tasks, advises by drawing up the individual curriculum, operates educational groups;

4) *specialized forms of control* of quality of educational achievements: traditional forms of quality control of education and remote (interviews, practical, term and project works, external studies, work in the environment of computer intellectual test systems, and so forth);

5) *a use of specialized means of a study*.

Except the solution of the prime task – a study at distance, e-learning can become excellent addition of an internal form as technologies which are applied when developing electronic training courses, will be a beautiful support for the improvement of quality and efficiency of a traditional study [11].

The author N. M. Kiyanovska [7] notes in her work that “electronic study” (e-learning) develops rather actively on the present in the world to which the increased demand promotes for educational services and a level of the development of ICT. Most of all users of “electronic study” are in the USA and Canada. Among the European countries leaders is Great Britain, Germany, Italy and France.

Experts of UNESCO consider that for compliance of qualification of workers with the level of information society, necessary introduction in the educational process of “electronic study” which focuses students on a new style of education and promotes the development of their skills for the subsequent study during the whole life [10].

Advantages and shortcomings of “electronic study”.

That fact that in “electronic study” all materials of a training course are digitized and stated in Internet, provides a number of advantages in the organization of the educational process:

1. Availability of a course at any moment. Electronic technologies allow organizing a study by the principle “24/7/365”. A student can work on a course 24 hours for days, 7 days for a week, and 365 days in a year. Electronic tasks and lectures are available to participants of a course at any time, and students considerably independently solve at what speed to them you take this course.

2. Availability of a course from any point of the world where there is an access to Internet. Thus for the majority of courses not the obligatory high speed of connection to a network: an usual dial-up of connection via a modem is enough.

3. Width of the provided information. Being in the environment Internet, a student can directly address in the course of work on material of a course in any world sources (resources of other educational centers, electronic libraries all over the world etc.).

4. Efficiency of providing information. In a traditional study a source of information is a book which turnover cycle takes months, and sometimes and years. Today there is a number dynamically developing sciences in which information which is saved up in monographs becomes outdated already by the time of their edition. Internet allows to update any information and to provide access to it for students within minutes.

5. More flexible organization of the educational process. There are sections simpler and more difficult in any educational subject. "Electronic study" allows a teacher to concentrate on more difficult sections of a course, having stated simple fragments for an independent study.

6. Automation of the educational process –there is no need to make a set of the same options of tasks for a test and to check results of their performance to a teacher: the system will pick up any parameters at the request of a teacher and will carry out a check and preservation of results in a register of a teacher.

7. Multimedia. Except traditional text and graphic information, e-learning naturally allows using all means of multimedia in the course of formation: animation, video, sound and color. It provides the presentation of the offered material and allows involving the majority of mechanisms of the perception by a person of new information.

8. Electronic technologies of a study answer mentality of modern youth the best for which Internet practically became "the second reality".

9. A sure possession of the modern information-communication technologies is one of key competences of the graduate of a modern educational institution. Passing of a study by a student in the e-learning format allows increasing the general computer education of students sharply.

10. Width and scale of the provided information. An exit to global information resources form the corresponding style of thinking at a student. Besides, the use of e-learning is provided much more opportunities for an independent work of a student, promoting the formation of skills of self-organization and rational planning of school hours [2].

Authors of a resource [18] mark out such advantages:

1. Personification. A listener of a study who is carried out with the use of technologies of "electronic study", can independently: to determine the speed of studying of a training material; to define when he wants you pass a study; to define, which sections he should study.

2. Possibility of a combination of the educational content for the formation of the various training programs adapted under the specific student.

3. Opportunity to receive much more information, knowledge, skills and abilities, necessary for an assessment received as a result of the carried-out study.

4. Using of wide range of various means of a study therefore a study which is carried out with the use of technologies of "electronic study", is most often more effective in comparison with a traditional internal study.

5. Possibility of its use for carrying out a study of persons who have limited opportunities.

6. Creation of an effective control system of a study constructed on possibility of collecting much more information on passing of a study by a listener in comparison with a traditional internal study.

According to the author [12], the "electronic" form of a study has a number of advantages, namely:

- the reduction of unproductive expenses of a work of a teacher;
- a free choice by a student of strategy and tactics of a study;
- the continuous return communication in the course of a study;
- the efficiency and the objectivity of a control and an assessment of results of a study;
- the individualization of the educational activity;
- the differentiated approach to students;
- the increase of motivation of a study.

To *shortcomings of a study* which is carried out with the use of technologies of "electronic study", it is necessary to carry [18]:

1. Need of formation of an additional motivation at listeners of a study which is carried out with the use of technologies of "electronic study", in comparison with other forms of a study.

2. High dependence on technical infrastructure. Failure in infrastructure can lead to the decrease in efficiency or in general study failure.

3. Lack of enough experts in the sphere of technologies of "electronic study".

Authors [2] note that electronic educational technologies, as well as any other achievements of the progress, have also certain *shortcomings*. They arise from understanding of full education as the interconnected process of a study and education: a study on the basis of computer programs isn't capable to replace a direct communication of a teacher with a student. Purely "electronic study" is depersonalized. Allowing a broad automation of the process of a study, it isn't able to consider specific features of intelligence and temperament

of students. The rigid “digital” logic which is consistently realized in “electronic study” is poorer than the human logic of the analysis of events and decision-making. Most often the correct decisions in life are made only at the accounting of emotional factors and ethical reasons which aren’t programmed. The mass introduction of Internet in everyday life – is the indisputable benefit of a civilization. However already today, even at the beginning of informatization of mankind, there are risks connected with it. The considerable part of youth considers life in a network as the second reality which in certain cases turns into reality the first. There is a risk to receive “electronic generation” with the simple mechanistic thinking which is torn off from a real life. An inadequate use of “electronic study” can promote the development of these negative tendencies. Clearly, it doesn’t mean refusal of full and large-scale introduction of electronic technologies. There is no doubt, they are progressive and necessary. The question consists only in that “electronic education” will not force out a traditional education, and will integrate at it. The part of an electronic component in education has to grow in the process of increase of education level in sequence: school → higher → additional education. That is at school when a pupil is in a stage of an active formation, the identity of a teacher and a direct communication with him are especially big and expedient use only of separate elements of electronic study. On the contrary, additional education which is got by a mature, a created person, can be especially pragmatic and realized completely on an electronic platform. Higher education institutional education is in the middle from this point of view and allows a wide use of the electronic platforms integrated into traditional forms of a study.

Conclusions:

1. It is possible to note from the analysis of references that there are many definitions of the concept “electronic study”. Despite of a difference of remote and electronic study, they have the general elements [10], namely: semantic objects, communities, expert online help, opportunities for cooperation, multimedia. Also “electronic study” has the specific qualitative properties [16]: flexibility and adaptability, construction modularity, a new role of a teacher, specialized forms of quality of control of educational achievements, uses of specialized means of a study. Despite of numerous advantages, “electronic study” has certain shortcomings which should be considered at introduction in the educational process.

2. On the basis of the theoretical analysis of “electronic study” it is possible to claim that electronic study can be and necessary to introduce to the sphere of physical culture and sport of students.

Prospects of the subsequent researches. It is planned to introduce a platform of a remote study of Chamilo in the sphere of physical culture and sport of students of Simon Kuznets Kharkiv National University of Economics and to analyse the results of introduction.

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Comparative analysis of the effectiveness of different training programs for athletes of high qualification, specializing in rowing

Abstract. Purpose: to evaluate the efficiency of different programs of training sessions to improve operational preparedness qualified athletes who specialize in rowing. **Materials and Methods:** the study included 10 athletes craftsmanship that are part of the national team of Ukraine rowing. To assess the functional training using computer program "SHVSM" and submaximal test PWC170. **Results** are content authoring program training sessions to improve functional training highly skilled athletes who specialize in rowing and academic results its experimental verification. **Conclusions:** the experiment confirmed a higher efficiency of the program of training sessions for rowing-sportsmen team Ukraine compared with the program, which is traditionally used, as evidenced by the survey.

Keywords: functional preparedness, rowing, Ukraine women's team, the macrocycle, Olympic cycle training program training sessions author.

Introduction. It is conventional that the level of functional readiness is one of the most important components of the general preparedness of sportsmen specializing in different types of sport including in rowing [1; 4; 5; 8].

Rather large number of researches locates in which the possibility of a practical solution of a matter at the expense of the increase in total amount of physical activities of various orientation, increases of volume of the competitive practice, optimization of the system of recovery actions, increases in volume of special and auxiliary preparation is devoted to a problem of the increase of functional readiness in rowing at various stages of long-term sports preparation [2; 3; 6; 10].

At the same time, according to a number of authors, the most perspective direction in the improvement of functional preparedness of oarsmen and oarswomen in rowing is the development of new programs of training classes on the basis of the last achievements of sports science considering features of dynamics of indicators of functional preparedness of sportsmen within separate micro and mesocycles, and also model characteristics for representatives of this sport [3; 6; 7; 9].

The relevance and the undoubted practical importance of the noted problem became prerequisites for carrying out the real research.

Communication of the research with scientific programs, plans, subjects. The work is a part of scientific programs of the faculty of physical training and the chair of the Olympic and professional sport and is executed within the subject "Studying of adaptive opportunities of an organism of sportsmen at different stages of the educational and training process" (number of the state registration is 0106U000583) the Consolidating plan of the RW of the Ministry of Education and Science of Ukraine for 2010-2014.

The objective of the research: to give an assessment to the efficiency of the use of different programs of training classes for the increase of the level of functional preparedness of sportswomen of high qualification specializing in rowing.

Material and methods of the research. An assessment of the efficiency of different programs of training classes directed on the increase of the level of functional preparedness of sportswomen of high qualification specializing in rowing held on the basis of the comparative analysis of results of tests of representatives of the national team of Ukraine on this sport (n=10). The research was conducted from October, 2010 to June, 2012 within the third (2010-2011) and the fourth (2011-2012) macrocycles of a four-year cycle of the Olympic preparation.

Testing of functional preparedness of sportswomen was held at the beginning of the preparatory (October, 2010 and October, 2011) and the competitive (June, 2011 and June, 2012) periods of the third and fourth macrocycles.

Within the third macrocycle the sportswomen were engaged according to the traditional program for

the sportswomen specializing in the rowing corresponding to a stage of the maximum realization of individual opportunities.

The program of training classes developed by us which main feature was a redistribution of volume of training loads with emphasis on physical activities of an aerobic, an aerobic- anaerobic and a power orientation was used in the fourth macrocycle in the training process of sportswomen of the national team of Ukraine on rowing.

In comparison with the traditional program it was offered to increase rowing volume in an aerobic mode at the all-preparatory stage on 10–11%, at the special and preparatory stage – on 12–14%, at the precompetitive stage – for 7–8% and at the competitive stage on 6–7%.

Changes of volume of the rowing work in the mixed (aerobic and anaerobic) mode made respectively 12–14%, 13–15%, 9–10% and 7–8%, and in the anaerobic mode from 12–15% at the all-preparatory stage to 5–6% at the competitive stage.

Besides, the volume of loadings on high-speed and power preparation was increased by 15–16%, power preparation on 20–22%, and special preparation on ergometer Concept-2 – on 17–19%.

The presented changes were made due to the corresponding decrease in a number of training hours on the general physical preparation of oarswomen of a national team of Ukraine on rowing.

The advanced computer program of an express-assessment “SHSM” was used for an assessment of the level of functional preparedness of sportswomen and its separate components in our research [5]. The following parameters of functional preparedness of sportswomen were defined: absolute ($aPWC_{170}$, $\text{kgm}\cdot\text{min}^{-1}$) and relative ($rPWC_{170}$, $\text{kgm}\cdot\text{min}^{-1}\cdot\text{kg}^{-1}$) sizes of the general physical working capacity; absolute ($aMCO$, $\text{l}\cdot\text{min}^{-1}$) and relative ($rMCO$, $\text{ml}\cdot\text{min}^{-1}\cdot\text{kg}^{-1}$) sizes of the maximum consumption of oxygen, alactate ($ALACp$, $\text{W}\cdot\text{kg}^{-1}$) and lactate ($LACp$, $\text{W}\cdot\text{kg}^{-1}$) power, alactate ($ALACc$, s. u. and $\text{mmol}\cdot\text{kg}^{-1}$) and lactate ($LACc$, s. u. and $\text{mmol}\cdot\text{l}^{-1}$) capacity, threshold of an anaerobic exchange (PANO, in % from $aMCO$), heart rate at the level of PANO (bpm^{-1}), the level of the general (GE, points), speed (SE, points) and speed and power (SPE, points) endurance, reserve opportunities of an organism (RO, points), profitability of the system of power supply of muscular activity (PSP, points) and general level of functional preparedness (LFP, points).

For the purpose of an additional assessment of the efficiency of various programs of training classes we also used the model characteristics of functional preparedness of sportswomen of rowing of the leading teams of Europe and the world (China, the Czech Republic, Italy, and Belarus).

All results received during the research were processed on the personal computer with the use of a package of the program Statistika 6.0.

Results of the research and their discussion. The comparative analysis of the indicators used in the research registered at the oarswomen of the national team of Ukraine at the beginning of the preparatory periods of the third and fourth macrocycles of a four-year cycle of the Olympic preparation allowed to state almost an identical initial level of their functional preparedness (tab. 1).

It is shown that it wasn't noted statistically reliable distinctions in sizes of indicators of functional preparedness of the sportswomen received at their initial testing in the third and fourth macrocycles at the beginning of the research.

In particular, the general level of functional preparedness in both cases was considered as average and made $62,52\pm 0,68$ points at the beginning of the third macrocycle and $64,71\pm 0,95$ points at the beginning of the fourth macrocycle.

Results of the comparative analysis of the data obtained at the repeated testing of sportswomen of the national team of Ukraine on rowing at the beginning of the competitive periods of the third and fourth macrocycle allowed to establish the following (tab. 2).

At this stage of the experiment the majority of indicators of functional preparedness of the examined sportswomen registered at the beginning of the competitive period of the fourth macrocycle were authentically above the same indicators noted at sportswomen of rowing in the previous year.

So, authentically higher sizes of the general physical working capacity (respectively $27,86\pm 0,38$ and $25,44\pm 0,38$ $\text{kgm}\cdot\text{min}^{-1}\cdot\text{kg}^{-1}$), aerobic productivity ($74,97\pm 0,66$ and $71,08\pm 0,38$ $\text{ml}\cdot\text{min}^{-1}\cdot\text{kg}^{-1}$), alactate power ($10,03\pm 0,15$ and $9,65\pm 0,11$ W), a threshold of an anerobny exchange ($77,40\pm 0,62$ and $71,47\pm 0,60\%$) were characteristic for them, HR at the level of PANO ($188,60\pm 1,14$ and $181,22\pm 1,17$ bpm^{-1}), the general metabolic capacity ($227,54\pm 2,90$ and $217,79\pm 2,90$ s.u.), the general ($81,24\pm 1,18$ and $65,21\pm 1,02$ points) and high-speed

(83,30±1,50 and 77,74±0,86 points) endurance, reserve opportunities (85,91±0,94 and 69,41±2,10 points), profitability of system of power supply (86,12±0,90 and 89,62±1,15 points) and the general level of functional preparedness (86,60±0,74 and 79,08±0,76 points) which was considered as high.

Table 1

Indicators of functional preparedness of sportswomen of the national team of Ukraine on rowing at the beginning of the preparatory periods of third (MC-3) and fourth (MC-4) of macrocycles, X±S

Indicators	MC-3	MC-4
rPWC _{170'} , kgm·min ⁻¹ ·kg ⁻¹	22,30±0,34	22,80±0,21
rMCO, ml·min ⁻¹ ·kg ⁻¹	63,71±0,34	64,19±0,28
ALACp, W	8,81±0,10	9,02±0,09
ALACc, s. u.	55,60±0,58	56,85±0,68
ALACc, mmol·kg ⁻¹	14,63±0,15	14,96±0,18
LACp, W	6,86±0,14	7,02±0,18
LACc, s. u.	43,35±0,54	44,72±0,76
LACc, mmol·l ⁻¹	10,84±0,14	11,18±0,19
PANO, %	63,87±0,54	64,44±0,68
HRpano, bpm ⁻¹	169,49±1,12	171,03±1,28
GMC, s.u	194,28±2,58	198,43±2,88
GE, points	47,54±0,90	49,38±0,56
SPE, points	61,41±1,35	64,94±2,23
SE, points	66,59±0,80	68,67±0,67
RO, points	52,38±1,87	55,38±2,08
PSP, points	79,54±1,05	81,36±1,59
LFP, points	62,52±0,68	64,71±0,95

Table 2

Indicators of functional readiness the oarswomen of the national team of Ukraine on rowing at the beginning of the competitive periods of the third and fourth macrocycles, X±S

Indicators	MC-3	MC-4
rPWC _{170'} , kgm·min ⁻¹ ·kg ⁻¹	25,44±0,38	27,86±0,38 **
rMCO, ml·min ⁻¹ ·kg ⁻¹	71,08±0,38	74,97±0,66 ***
ALACp, W	9,65±0,11	10,03±0,15 *
ALACc, s. u.	59,9±0,62	60,84±0,77
ALACc, mmol·kg ⁻¹	15,76±0,16	16,01±0,20
LACp, W	7,74±0,15	7,79±0,13
LACc, s. u.	49,60±0,62	50,72±0,66
LACc, mmol·l ⁻¹	12,40±0,16	12,68±0,17
PANO, %	71,47±0,60	77,40±0,62 ***
HRpano, bpm ⁻¹	181,22±1,17	188,60±1,14 *
GMC, s.u	217,79±2,90	227,54±2,90 *
GE, points	65,21±1,02	81,24±1,18 ***
SPE, points	78,57±1,53	81,87±1,62
SE, points	77,74±0,86	83,30±1,50 **
RO, points	69,41±2,10	85,91±0,94 ***
PSP, points	89,62±1,15	86,12±0,90 *
LFP, points	79,08±0,76	86,60±0,74 ***

Note. * – $p < 0,005$; ** – $p < 0,01$; *** – $p < 0,001$ in comparison with indicators in the third macrocycle.

The obtained data testified to higher efficiency of the program for the increase of the level of functional preparedness of sportswomen of the national team of Ukraine offered by us on rowing.

Results of the comparative analysis of sizes of relative deviations of indicators of functional preparedness of the examined sportswomen from model characteristics at the beginning of the competitive period of the third and fourth macrocycles (tab. 3) became the convincing confirmation to it.

Table 3

Deviation of indicators of functional preparedness of sportswomen of the national team of Ukraine on rowing at the beginning of the competitive periods of the third and fourth macrocycles, in %

Indicators	MC-3	MC-4
rPWC _{170'} , kgm·min ⁻¹ ·kg ⁻¹	-14,14±1,48	-5,99±2,11**
rMCO, ml·min ⁻¹ ·kg ⁻¹	-10,75±1,56	-5,88±2,53
ALACp, W	-11,23±1,24	-7,77±1,98
ALACc, s. u.	-4,4±1,70	-2,9±1,50
ALACc, mmol·kg ⁻¹	-4,4±1,70	-2,9±1,50
LACp, W	-6,53±1,49	-5,88±1,23
LACc, s. u.	-5,76±1,57	-3,62±1,33
LACc, mmol·l ⁻¹	-5,76±1,57	-3,62±1,33
PANO, %	0,61±1,51	-0,89±1,36
HRpano, bpm ⁻¹	-4,48±1,66	-2,41±1,34
GMC, s.u	-12,74±1,51	-8,83±1,42
GE, points	-25,02±1,42	-6,59±2,35***
SPE, points	-10,49±1,46	-6,74±1,23
SE, points	-12,51±1,30	-6,26±2,46*
RO, points	-24,92±1,51	-7,07±1,10***
PSP, points	0,93±1,70	-3,01±1,15
LFP, points	-14,38±1,46	-6,24±1,27***

Note. * – $p < 0,005$; ** – $p < 0,01$; *** – $p < 0,001$ in comparison with indicators in the third macrocycle.

It is shown that sizes of deviations of the majority of indicators of functional preparedness the oarswomen of the national team of Ukraine from model characteristics at the beginning of the competitive period of the fourth macrocycle were less, than similar deviations within the third macrocycle.

Distinctions in sizes of deviations from model characteristics in such parameters as the level of the general physical working capacity (-14,14±1,48% in the third macrocycle and -5,99±2,11% in the fourth macrocycle), the general (respectively -25,02±1,42% and -6,59±2,35%) and speed (-12,51±1,30% and -6,26±2,46%) endurance, reserve opportunities of an organism (-24,92±1,51% and -7,07±1,10%) and the general level of functional preparedness (-14,38±1,46% and -6,24±1,27%) were most essential.

In general results of the conducted research allowed note a higher efficiency of the program of training classes for the sportswomen of high qualification specializing in rowing developed by us that gives the grounds to recommend it for the practical use when training sportswomen of rowing.

Conclusions:

1. Results of the conducted research allowed state a higher efficiency of the program of training classes for the sportswomen of high qualification specializing in rowing developed by us in comparison with the traditional program of preparation.

2. In our opinion, the higher level of functional preparedness of sportswomen of the national team of Ukraine on rowing in the fourth macrocycle of a four-year cycle of the Olympic preparation was reached substantially at the expense of the increase in volume of rowing in the aerobic and the aerobic - anaerobic mode, and also the volume of special preparation on a rowing ergometer Concept-2.

Prospects of further researches in this direction. Further the modernization of the author's program of training classes is planned for the sportswomen of the highest qualification specializing in rowing in a year cycle of the preparation directed on the greatest possible achievement of model characteristics.

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Status and prospects of improvement of physical education of lawyers

Abstract. Purpose: to examine the condition and prospects of improving the system of physical education in higher legal education. **Material and Methods:** for research methods were used: analysis and synthesis of scientific and methodical literature, teacher observations, and the method of expert evaluation. **Results:** it was shown that for every legal specialization, there is only one optimal system factor, which provides maximum and reliable implementation of the tasks of professional activity in a certain period of time. Thus, a factor which the functional system of professional activities of lawyers to law enforcement officials of MIA of Ukraine performs the final result, which is different for specific professional activities. **Conclusions:** improving the process of preparing future lawyers law enforcement activities should be completed as in the direction of developing a comprehensive system of physical education with a graded approach to the specifics of the legal profession and the use of modern means of training. This technology education, in our opinion, will significantly reduce the time of social, psychological and physical adaptation to the characteristics of the students training in high school and the specific professional activity.

Keywords: students, legal orientation training, physical education, differentiated approach.

Introduction. The modern professional activity of experts in the jurisprudence is very many-sided and multidimensional that exposes strict requirements to the level of their vocational training and professionally important qualities. On the one hand, it is caused by a variety of legal specialties, in particular the law-enforcement activity, and on the another hand – by a complication of a socio-political situation in the country. Therefore, every time, professionalism of a lawyer is checked in each separate case or a situation. However nobody manages and maintains big tensions, cases of “professional burning out” come across. Thus, the modern society needs much better and profound training of a future legal expert.

In particular, a legal specialization (an investigator, a judge, a prosecutor, a notary, a lawyer) makes specific demands to an applicant. Therefore, each of them is guilty to take control by autonomous skills and abilities and only to this field of activity. So, the professional suitability to the chosen type of a profession, that is a compliance of physical, mental, intellectual and moral qualities of a person to objective requirements of a profession has a basic value for lawyers of the law-enforcement activity (an investigator, an operative of a criminal investigation department, security service, tax and customs police, military lawyers) [2]. It testifies to the need of the differentiated approach to training of future lawyers, taking into account a sphere of application of their work, especially at a stage of the higher education.

The available social-economic and political situation in the country influences by a considerable rank the traditional system of physical training of employees of law enforcement agencies of the Ministry of Internal Affairs of Ukraine and provides their high preparedness for the performance of professional activity. But for today cases of traumatizing and death of guards became frequent. It is undoubted that the insufficient level of the general and special physical training of lawyers of law enforcement agencies prevents them to fulfill the professional duties effectively.

The analysis of scientifically methodical literature and practice claim about the need of the essential revision of the statement of physical training for educational institutions of Ukraine, in particular in the highest legal educational institutions. The problem improvements of contents, forms and methods of physical training, and professionally-applied physical preparation are devoted to works of many authors [4; 6; 7; 10]. At the same time the data of researches have partially separate character, and also don't consider psycho-physiological bases of the motive activity.

In our opinion, the system research of this problem has to happen on the basis of the development of the functional system of training of future lawyers taking into account specific signs of their professional activity. To its base it is necessary to put basic provisions of the theory of functional systems of P. K. Anokhin [1].

The abovementioned indicates the relevance of the noted problem, that is caused a selection of the research subject.

Communication of the research with scientific programs, plans, subjects. The research was conducted according to the initiative subject of the RW for 2011-2015 of the chairs of physical training No. 1 and No. 3 of Yaroslav the Wise National law university, and also according to the thematic plan of the research work of Kharkov state academy of physical culture for 2013-2015 by the subject “The improvement of the process of physical training in initial institutions of a different profile”.

The objective of the research consists in studying of a state and definition of prospects of the improvement of the system of physical training in higher educational institutions (on the example of the highest legal educational institutions).

According to the research objective the following tasks were put:

1. To analyze the maintenance of the system of physical training in the highest legal educational institutions.
2. To define ways of the improvement of the process of physical training in the system of the higher legal education.

Material and methods of the research. The following methods were used for the solution of tasks of the research: method of the analysis of scientifically methodical literature, pedagogical supervision, method of the expert assessment.

Results of the research and their discussion. The analysis of standardly legal documents concerning the bases of the organization, the development and the management of physical culture and sport in Ukraine, namely Laws of Ukraine “About physical culture and sport”, “About education”, “About the higher education” [3], and also the Statute about the organization of physical training and mass sport in higher educational institutions No. 4 of 11.01.2006 testifies that physical training of students acts as an integral part of the higher arts education and is regulated by the basic training program. This program determines the minimum obligatory level of the motive mode and physical fitness of students at all stages of a study.

In turn, according to “The state requirements of rather training programs on physical training in the education system”, higher educational institutions on the basis of the curricula and the basic program have the right to concretize and supplement its contents taking into account educational-qualification requirements to experts.

Together with it the Ministries which have higher educational institutions which train workers which professional activity is carried out in specific or extreme conditions in the submission and needs vocational sports education, develop and approve training programs on physical training, considering features of training of such experts [4].

So, according to normative documents of the Ministry of law-enforcement bodies, special physical preparation of future investigating authorities of internal affairs is a component of study and provides the following sections of the educational process:

- sections of physical fitness (gymnastics, track and field athletics, cross-country skiing, swimming, hand-to-hand fight, overcoming of an obstacle course and rise on an assault pellet but other);
- control standards on physical fitness for men and women.

As for military lawyers, the state requirements concerning the level of their physical fitness provide the existence of military preparation, and also a military rank of an officer.

Undoubtedly, the most important part in the solution of a question concerning the improvement of quality of training of future lawyers is assigned to the professionally-applied physical preparation (PAPP), the purposeful development of psycho-physiological qualities acts as one of which main tasks to which the increased requirements belong in a concrete type of labor or educational activity. In scientifically-methodical literature they are called “criteria», which belong to the criterion of the professional suitability.

The results of a number of researches [5; 9] testify that the accounting of specifics of the professional activity allows increasing the quality of a study significantly. It is obvious that the allocation of special groups of students of legal higher education institutions according to a specialty of a legal profession, the accounting of specific features, and also the development of the corresponding techniques of their physical training will allow increasing the efficiency of training of future experts considerably. In our opinion, it is expedient to distribute legal specialties on three specific groups: 1) lawyers of civil activity (legal advisers); 2) military lawyers (prosecutors, investigators); 3) investigators (prosecutor’s offices, law-enforcement bodies, security service). Such distribution will allow realizing the differentiated approach to a study much more effectively.

To understand prospects of the improvement of the system of physical training of law students, it is necessary to look at it from the point of view of the main positions of the theory of functional systems of P. K. Anokhin. This theory provides the attraction to the motive act of those subsystems of a human body which provides the normal effective activity.

The analysis of structure of the professional activity of lawyers of different professions showed that there is only one optimum system-creational factor for each legal specialization which provides the maximum and reliable realization of tasks of the professional activity in a certain interval of time. So, the end result acts as a system-creational factor of the functional system of the professional activity of lawyers for law enforcement agencies of the Ministry of Internal Affairs of Ukraine which is a miscellaneous for the specific professional activity.

Means of a study which will promote the fast assimilation of technology of physical exercises and the increase of a level of the development of motive abilities are widely used at the present stage in practice of physical training and sport various. The most perspective in this direction are technical means of the urgent information. The method of the urgent information is developed by V. S. Farfel [8] provides obtaining the urgent information on parameters of movements for the purpose of their adjustment.

It is undoubted that the use of means of the urgent information will allow increasing the quality of training of students considerably. Thus, the process of physical training has to contain such specific means, methods and forms, organizations of study which will promote the fast and long-term adaptation of functional systems of an organism to specifics of future the professional activity in the highest legal educational institutions.

Conclusions:

1. The analysis of the maintenance of the traditional system of physical training of students of legal educational institution showed that the traditional program by means of which training of future lawyers is carried out, today not fully meets the modern requirements, has no system character and doesn't consider specific signs of the future professional activity. The advanced native and foreign technologies of a study, pedagogical and medical control, and professionally-applied physical preparation don't find the practical application.

2. The results of long researches allowed establishing that for each legal specialization there is only one optimum system-creational factor which provides the maximum and reliable realization of tasks of the professional activity. Thus the distribution of students to specific groups: lawyers of civil activity, lawyers-guards and military lawyers will allow reaching new, better professional standard.

3. It is necessary to develop the complex system of physical training with the differentiated approach to a legal profession and the use of modern technical means of a study for the improvement of the process of physical training of future guards. This technology of a study will allow reducing considerably terms of the socio-psychological and physical adaptation of students to features of a study in higher education institution and specifics of the professional activity.

Prospects of the subsequent researches are provided to be carried out in the direction of the development of the complex system of physical training of lawyers of the law-enforcement activity with the differentiated approach to a legal profession and a research of its efficiency.

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Definition of a functional condition of the vestibular analyzer of volleyball players of 14 – 15 years old under the influence of specially directed exercises

Abstract. Purpose: indicators of a functional condition of the vestibular analyzer and their changes under the influence of specially directed exercises at volleyball players of 14 – 15 years old are given in the article. **Results:** the carried-out analysis of a functional condition of the vestibular analyzer, both before, and after rotary loadings to the pedagogical experiment testifies to insufficient development of a vestibular function of young volleyball players. **Conclusions:** the comparison of results of the studied groups after the introduction in the educational-training process of special exercises directed on the improvement of operation of the vestibular analyzer revealed considerable changes of indicators of volleyball players of the experimental group.

Keywords: the vestibular analyzer, sensor-based systems, specially directed exercises, volleyball players of 14-15 years old of groups of the preliminary basic training.

Relevance. Physical actions of volleyball players consist of a set of starts and accelerations, high jumps up on maximum and optimum height, a large number of explosive movements at long, fast and almost continuous response to changes of circumstances that causes a big loading on a vestibular function of a volleyball player.

Irritations of the vestibular analyzer cause a delay of speed of movement, incoordination, deterioration of visual perceptions, and considerably influences indicators of attention that is displayed in the increase of number of mistakes.

Rovny A.S. 2001, Shesterova L.Ye. 2005, Maslyak I.P. 2007, Pomeshchikova I.P. 2014 dealt with tasks of the interconnection of physical fitness with a functional condition of sensor-based systems. Authors point to rather high degree of interconnection between indicators of the development of physical qualities and separate indicators of sensor-based systems in their works.

However the question of influence of special exercises of young volleyball players directed on the improvement of functioning of the vestibular analyzer in available literature is studied insufficiently.

Therefore, the **definition** of change of indicators of a functional condition of the vestibular sensor-based system of volleyball players of 14 – 15 years old under the influence of the exercises directed on the improvement of functioning of the vestibular analyzer became the **purpose** of this research.

The stated purpose defines the following tasks of the research:

Tasks of the research.

1. To learn theoretical and methodological features of training of young volleyball players on the basis of the analysis of scientifically – methodical literature.

2. To investigate the level of indicators of the vestibular sensor-based systems of volleyball players of 14 – 15 years old.

3. To carry out the comparative analysis of the studied indicators before and after the introduction in the educational-training process of young volleyball players of the exercises directed on the improvement of functioning of the vestibular analyzer.

The subject of the research: the educational – training process of volleyball players of 14 – 15 years old.

The object of the research: the functional condition of the vestibular analyzer of volleyball players of 14 – 15 years old.

Methods of the research: theoretical analysis and generalization of scientifically methodical literature, studying of documentary materials and pedagogical supervision, methods of definition of separate indicators of the vestibular analyzer after standard rotary loadings in the Barany chair (on indicators: a deviation when walking on the 5th meter piece, speed of the performance of a task, methods of mathematical statistics).

The organization of the research.

24 sportsmen at the age of 14 – 15 years old took part in the research. From them are 12 boys – volleyball

players who study in groups of the preliminary basic training of the third year of study of CYSS No. 12 of which were carried to the experimental group and 12 boys – volleyball players who study in groups of the previous basic training of the third year of study of CYSS No. 6 in Kharkov which were carried to the control group. Groups were identical on age and sex indicators.

All children who took part in the research were almost healthy and were under the supervision of sports doctors.

The research was conducted step by step from September, 2013 to May, 2014.

At the first stage (September, 2013) the pedagogical observation was conducted and the purpose, the task, the object, the subject and methods of the research were defined. And also guidance literature from the chosen subject was analyzed.

At the second stage (October, 2013 – April, 2014) the pedagogical experiment which included the previous and total testing of a functional condition of the vestibular sensor-based system was conducted. Indicators of a functional condition of the vestibular analyzer were measured before carrying out educational-training classes.

Results of the research.

Attacking throws, fast movements, jumps, unexpected changes of a direction of movements, sharp jerks, falls, fast turns of a head at orientation – all this causes considerable displacements of all departments of the vestibular system of the volleyball player.

It is noted by practice that a feature of the vestibular analyzer is possibility of its training. Such training has to include exercises which suppress topical and vegetative reflexes, and also exercises are directed on a perfect performance of precisely coordination movements in unprofitable conditions for the vestibular mechanism.

So, complexes of special exercises and outdoor games aimed at the development of functionality of the vestibular analyzer were included in addition the educational – training process of volleyball players of the experimental group, with program material within 6 months.

Also for the development of vestibular firmness it was included difficult- coordination exercises which demand counteraction by unpleasant subjective feeling at their performance. These are different types of acrobatic and gymnastic exercises, kinds of jumps, rotary motions, various accelerations, instant stops, and so on. However the greatest action was taken by those exercises which included at the performance of this or that technique of a game. For example, the performance of a pass of a ball after a roll up action or a rotary motion, or after a sharp acceleration forward, back, to the right, to the left and so forth.

The vestibular firmness of volleyball players was measured before and after standard vestibular loading five turns for 10 s.

The analysis of activity of the vestibular analyzer didn't find considerable divergences between indicators of sportsmen of the control and the experimental groups ($p > 0,05$) to the pedagogical experiment on indicators of deviation during the walking and speed of the performance of the task, both before and after the received vestibular irritation.

It should be noted that displacements were observed both from the side of somatic, and vegetative nervous systems when carrying out functional tests. After the received rotary loadings sportsmen complained of dizziness and nausea and much worse performed tests. Received data of the previous testing also pointed to the insufficient development of the vestibular function of volleyball players of 14 – 15 years old.

Therefore, it was recommended to include complexes of specially directed exercises on the stabilization of the vestibular reflexes and the avoidance of vestibular-somatic manifestations for the development of the vestibular analyzer of volleyball players in the educational and training process.

The comparison of results of the vestibular function of volleyball players of the control and the experimental groups established considerable divergences between them after the pedagogical experiment. So, the data of a direct walking improved and had statistically reliable differences after the vestibular loading and speed of the performance of the task, both before and after rotation of the experimental group, ($p > 0,05$).

The exception is made by indicators of deviation when walking to the standard rotation on the Barany chair where differences aren't essential and had no reliable character ($p > 0,05$).

The analysis of the obtained data, testifies that complexes of specially –selected exercises directed on the improvement of functioning of the vestibular analyzer influence positively the functionality of an organ of equilibrium, reducing its reactivity.

Table 1

Indicators of the vestibular firmness of volleyball players of 14 – 15 years old before and after the pedagogical experiment

Before the pedagogical experiment				
Tests for the determination of the vestibular firmness	CG (n=12)	EG (n=12)	t	p
	$\bar{X} \pm m$			
deviation during the walking				
before rotation (sm)	28,2±0,65	27,12±0,52	1,30	> 0,05
after rotation (sm)	42,91±2,39	41,23±1,87	0,50	> 0,05
speed of the performance of the task				
before rotation (s)	3,1±0,35	2,9±0,15	0,53	> 0,05
after rotation (s)	3,5±0,53	3,4±0,26	0,12	> 0,05
After the pedagogical experiment				
deviation during the walking				
before rotation (sm)	24,62±0,77	23,12±1,63	0,83	> 0,05
after rotation (sm)	41,13±2,30	36,72±1,20	2,54	<0,05
speed of the performance of the task				
before rotation (s)	2,9±0,15	2,5±0,12	2,08	<0,05
after rotation (s)	3,3±0,13	2,7±0,23	2,27	<0,05

Testing of the vestibular firmness established the considerable improvement of results after the pedagogical experiment at volleyball players of the experimental group. Received data testify that indicators of functional tests, deviations during the walking and speed of the performance of the task authentically improved (<0,05), both before and after standard vestibular loadings.

Functional displacements at sportsmen after the performance of complexes of specially – offered exercises after the vestibular irritation took place much easier, than at unexercised volleyball players.

Table 2

The comparative characteristic of indicators of the vestibular firmness of volleyball players of the experimental group before and after the pedagogical experiment

Tests for the determination of the vestibular firmness	EG before the pedagogical experiment	EG after the pedagogical experiment	t	p
	$\bar{X} \pm m$			
Deviation during the walking (sm)				
before rotation (sm)	27,12±0,52	23,12±1,63	2,34	<0,05
after rotation (sm)	41,23±1,87	36,72±1,20	2,03	<0,05
Speed of the performance of the task				
before rotation (s)	2,9±0,15	2,5±0,12	2,08	<0,05
after rotation (s)	3,4±0,26	2,7±0,23	2,02	<0,05

Therefore it is possible to consider that the offered exercises by us positively affected the functionality of an organ of the equilibrium and improved the majority of its functions.

The received by us indicators allow to include series of exercises of technique in the educational-training process of young volleyball players, namely, performance of passes by two hands from above and from below in couples, the three and the fours, after throws, movements, accelerations, turns, with the change of places and on different distances (in couples with additional over themselves); serial methods of forwards of blows by two hands from below after falling and movements in different directions and zones volleyball to a platform; imitation of blocking and forwards of blows after accelerations and falling).

The modified exercises for the development of hopping endurance are also included in trainings (jumps on a place and with advance with turns on 90, 180, 360 degrees, also with reaching a metric marking, also with blow to the fixed ball forward). Duration of one series of 15 – 20 jumps, quantity of series 5 – 7 in training, a rest interval between series is till 2 minutes.

The modified outdoor games, relays are.

Conclusions

1. Comparing indicators of volleyball players of the control and the experimental groups after carrying out the pedagogical experiment it is established that the data of the vestibular firmness improved at boys – volleyball players of the experimental group, and these divergences have a reliable character ($p < 0,05$), the exception is made by indicators of deviation when walking to rotation.

2. The introduction in the educational-training process of complexes of the specially directed exercises on the improvement of functionality of the vestibular analyzer established the considerable improvement of the vestibular firmness of volleyball players of the experimental group. The comparison of results of speed of the performance of the task and the deviation when walking, both before and after rotation of boys of the experimental group on the Barany chair established a statistically reliable difference ($<0,05$) between indicators before and after the pedagogical experiment.

In perspective, the definition of the interconnection of the development of vestibular functions and manifestation of different physical qualities of volleyball players of 14 – 15 years old are interesting in this direction.

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Problem organization of physical education of university students in accordance with their interests, level of physical fitness and physical development of the individual

Abstract. Purpose: to substantiate the construction of a system of physical education university students with current norms and standards of physical development. **Material and Methods:** analysis of the sources of literature and public documents relating to the organization of physical education in Ukraine. **Results:** analysis of the literature on this problem suggests that theoretically grounded on the belief that the human body is an outward display of metabolic processes and is the basis of preclinical diagnosis, reflecting the individual structural features of somatotype, allowing clinical anthropometry as a method of establishing the physical development of a person in any of its age. **Conclusions:** the level of physical fitness with its division into general and special remains the unsolved problem in organizing the process of individualization of physical education. This is due to the lack of tests that assess the quantitative and qualitative characteristics of physical fitness with the individual predisposition morphofunctional organization somatotype to preferred forms of physical activity which determine their propensity for classes.

Keywords: physical development, biological age, physical condition, physical fitness, individual norm.

Introduction. Health of each citizen is the property of the state and reflects the level of its labor and defensive potential. The importance of physical training of younger generation and the need of control of the level of physical fitness of various groups of the population is repeatedly emphasized in a number of documents [1]. Students of higher education institutions are one of the categories of such groups of the population. A high level of their physical development and an appropriate level of physical fitness provide their effective educational activity during the stay in educational institution and the follow-up professional activity. It is a rather complex problem which is solved in each social and economic period of the development of the state depending on the level of its general culture of the corresponding period of the development. Physical culture reflects the level of its social development as an integral component of a complete culture of the society [2]. As well as the general culture in general, physical culture has its making components to which its material, spiritual and physical components belong. The interconditionality of these components of physical culture defines the efficiency of its providing at each stage of physical development [3]. Each of the noted components of physical culture represents the independent scientific directions of researches which decision assumes that other interdependent components of physical culture have an appropriate level of an adequate resolution. The physical component includes physical development which demands the necessary volume of the motive activity available to this age, and the hygiene of food corresponding to it in every period of the age development [4]. From these constitutives the orientation of the conducted researches is connected with the efficiency of the organization of the necessary motive activity providing the normal physical development of the considered contingent of student's youth.

Communication of the research with scientific programs, plans, subjects. It is naturally supposed that the problem of hygiene of food is solved according to requirements of the age period of this contingent. Practically the objective belongs to a problem of providing a healthy lifestyle of student's youth and is connected with the implementation by that of the Consolidating plan of the research works of the Ministry of family, youth and sport of Ukraine No. 0111U001206 (2013-2014), No. 0111U000192 (2011-2015).

The objective of the research: to prove the creation of system of physical training of students of higher education institutions taking into account modern norms and standards of physical development.

The tasks of the research. To establish the basic provisions defining a structure of the creation of physical training of student's youth.

Material and methods of the research: the analysis of sources of literature and the state documents concerning the organization of physical training in Ukraine.

Results of the research their discussion. The organization of physical training, concerning only full physical development, is connected taking into account specific features of its course. At the basis of this process the defining role is played by the motive activity. The leading need of the improvement and the development of biological objects for a phylogeny is the motive activity which defines not only the formation of difficult forms of the locomotor activity, but also the development and the formation of system of their management and trophic providing. The deepest foundation of this process is presented in the work of the academician E. K. Sepp "History of the development of the nervous system in vertebrata" [5]. Just lokomotions were the cornerstone of the formation of touch systems of an assessment of the external and internal environment and the development of neurohumoral systems of coordination of their equilibrium state. That is, the whole adaptive process and the improvement of a complete organism. The formation of an organism in ontogenesis, fully reflecting needs of its phylogenetic development, proceeds at a direct requirement of the motive activity, adequate for each age period. In this case conditions act equally adversely both as hypodynamia and as hyperdynamia [6]. The main objective in this case consists in the establishment of optimum volume of the age physical activity. The accounting of individual predisposition to its contents on an arsenal of the physical exercises available to each individual, and the mode of their performance is not less important factor in its implementation. The solution of this question is closely connected with the constitutional features of a somatotype. Much attention was paid by Hippocrates, Aristotle to the importance of structure of a body and its features of physical development, connecting the structure of a body with a measure of resistance of an organism to various factors of the environment. Their humoral theory of the formation of a body formed the basis of the theory of constitutional predisposition of a somatotype to certain diseases that served the development of the theory of donozologic diagnosis of diseases [7]. In the subsequent development of this direction led to the formation of medical constitutional anthropometry which was based on the foundation of that fact that the body of a person is an external display of exchange processes and can serve as the most effective indication of donozologic forecasting. This statement is a fundamental in an assessment of specific features of physical development and a necessary base for the creation of physical preparation taking into account individual opportunities and requirements of an organism [8–10]. There is a sensitive issue of an assessment of their preliminary physical fitness and the current physical state concerning the organization of physical training of student's youth and a choice of means of ensuring of their physical preparation. It in turn demands the existence of age norms of physical development, standards of its assessment, control tests and the development of methods of systematic monitoring of the process of physical development, physical fitness and physical state [11; 12]. The order "About the approval of the concept of the Nation-wide target social program of the development of physical culture and sport for 2012-2016" was accepted by the cabinet of Ukraine of August 31, 2011 on No. 828-r. It is said in it that the way of life of the population of Ukraine and a condition of the sphere of physical culture and sport create a threat and are an essential call for the Ukrainian state at the present stage of its development that is characterized by certain reasons, basic of which act: the demographic crisis reflecting the reduction of the population of Ukraine; the absence of the settled traditions and motivation to physical training and mass sport as to the most important factor of physical and social wellbeing, the improvement of a state of health, the maintaining a healthy lifestyle and the increase in its duration; the deterioration of a state of health of the population with sharply progressing chronic diseases of heart, hypertension, neurosis, arthritis, obesity and other diseases that reduces a number of persons who can be attracted in an elite sport, capable to maintain the considerable physical activities necessary for the achievement of high sports results; in comparison with 2007 the number of persons who are carried to special medical group increased; the discrepancy to requirements of the present and essential lag from the international standards of resource, personnel, scientific and methodical, medicobiological, financial, material, information support is observed. Now there is no uniform system of the accounting of the level of physical development of the population, physical fitness and a physical state in the country. The only system of an assessment of the level of physical development is developed in Japan in 1964 by K. Hirata [13]. There is a development of such system to the People's Republic of China (China) and in Russia intensively. It should be noted that in the thirties the XX century such system was developed in Russia, but for a number of the objective reasons, it didn't gain the further development [14]. This problem is developed on such subjects in Ukraine according to consolidating plans of carrying out scientific works of the Ministry of Education and Science of Ukraine in the field of a family of youth and sport: "Theoretical and applied basis of the construction of physical development, physical fitness and physical state of different groups of the population" (No. 0111U01206, 2013-

2014) and “Theoretic-methodological basis of the construction of a mass control and an assessment of the level of physical development and physical fitness of different stratum of the population” (No. 0111U00192, 2011-2015). However it should be noted that all existing and developed systems of an assessment of physical development, a physical state and physical fitness are constructed on the basis of average data that is an essential shortcoming, especially in the countries having essential climatic-geographical differences in various regions. This fact was proved by works of Novosibirsk academy of sciences with big persuasiveness by the comparison of norms of criteria of an assessment of physical health of natives of the Asian North and the European regions of the USSR [15]. If to proceed from the situation that the structure of a constitution is an external display of exchange processes, in works with anthropometrical researches this fact was considered even earlier [16; 17]. At the modern level, raising a question of the need for the organization of physical training to consider specific features of physical development and level of physical fitness, it is necessary to proceed from a creation of individual norm of physical development. This problem is actively understood in the 80th years of the last century. Having theoretical development which a reasonably open essence of this problem, its practical use in the theory of the organization of system of physical training didn't find the application [18] that demands the development of methods of its use in the organization of control of physical development of the controlled contingent and the introduction in the organization of physical training of students. One of the reasons of such condition of a question is that the individual physical development is connected with the process of physiological maturing the morphofunctional systems of an organism. The time of course of this process defines a biological age of an individual which in a significant amount of cases doesn't coincide with a chronological age [19]. The existing methods of its definition yield rather contradictory results which rather specific individual establish a various biological age for it. The time of maturing of the chosen morphofunctional indicator used for a control is the cornerstone of an assessment of a biological age. Height, weight, ossification process, emergence of teeth and any nonspecific reactions of an organism belong to a number of such indicators. Now there are more than one hundred and fifty of them. The discrepancy of indicators of rather specific individual in an assessment of his biological age testifies that the speed of maturing of various functional systems in ensuring physical development of the specific individual can reach a certain mismatch. This effect generates their inconsistency and is shown in allometry of the form-building process of a somatotype [20]. Geoffroy Saint-Hilaire, considering this question, paid attention to the need for the process of physical development to allocate a growth and a shaping. The growth of form-building body weight is actually that the main indicator of the biological development which most substantially reflects its biological age. If on the population of one chronological age to determine a body weight, the established average size will reflect the most characteristic body weight which is defined by the characteristic of biological age. Concerning this body weight it is possible to divide all other surveyed one chronological age as lagging behind and advancing in the speed of biological maturing. In the most generalized form this approach defines the minimum sufficiency for the unambiguous definition of a biological age and an assessment of level of physical development. The qualitative characteristic of allometric deviations connected with a maturing mismatch of morphofunctional educations can be reflected with the necessary extent of specification at the increase in a feature set and accuracy of their measurement that is rather in details stated in the researches which are conducted in Kharkov state academy of physical culture. The determination of level of a physical state is the second component of the organization of physical training of students taking into account their specific features and, on the basis of it, an assessment of a measure of their preparedness for the performance of physical activity of certain intensity, volume and the corresponding qualitative orientation. For this purpose the most expedient is the use of nonspecific reactions of an organism which act as an integrated indicator of the reaction of an organism to an action of various factors of the environment. The control of characteristics of the cardiovascular system and, in particular, the frequency and the amplitude characteristic of a cardio signal and a change of the arterial pressure measured at the same time on the left and right hand with a simultaneous assessment of four of its indicators in uniform coordinate system of their representation are at the existing hardware providing a physical state with the most effective method of an assessment [21]. For the determination of level of physical fitness tests of an assessment of the general and special physical fitness are required. The unified state system of such tests isn't present. However this task has its resolvability from a rather big arsenal of the existing tests of an assessment of physical qualities, the level of their manifestation and the control methods of current state. In relation to student's youth of higher educational institutions, it is necessary to consider specifics of their activity which are regulated by features of the organization and course of the

educational process. Specifics of student's activity proceed within five years and take the most viable period. The organization of physical training these five years has a especially significant role as it is necessary not only to keep the high level of viability of an organism, but also to prepare it for specifics of the forthcoming professional activity which in most cases significantly differ from a rhythm of life and its specifics in the period of students. The essence of special physical preparation of an organism of future expert consists in it which activity will proceed in essentially other – the professional and production environment. This task practically not only isn't solved in one of the existing higher education institutions, but also isn't put. Despite of that it has the vital value for preservation of duration of an effective production activity. One of factors of the solution of this question is instilling during student's activity of deep understanding of the importance of physical activity for the preservation of physical health and preparation of necessary knowledge for the performance of this task in the changing conditions of the forthcoming activity.

Conclusions. The analysis of data of literature on the considered problem allows to consider that theoretically reasonable provisions that the body of the person is an external display of exchange processes and forms a basis of donozologic diagnostics, reflecting specific features of a structure of a somatotype that allows to use clinical anthropometry as a method of the establishment of physical development of a person at any his age.

The assessment of the individual physical development connected with allometry of the formation of a constitution, and the establishment of a biological age of an individual on the methods which are stated in works [4; 6; 7], allow with a necessary accuracy of similarity of the structure of a somatotype to form uniform groups on the level of physical development of the contingent of student's youth.

The determined consistent patterns of behavior of the cardiovascular system as a nonspecific integrated reaction to the influence of alternating factors of the environment which are presented in the works [12; 21], give the chance to define the current physical state of an individual that allows to define optimum conditions of his functional loading.

The level of physical fitness with its division into the general and special one remains the most not resolved task in a question of the organization of an individualization of the process of physical training. It is connected with the lack of system of tests which allow estimating quantitative and qualitative characteristics of physical fitness taking into account an individual predisposition of the morphofunctional organization of a somatotype to preferable forms of physical activity, determining the tendency to classes by them.

The lack of the noted sort of tests, necessary standards and norms define a **further orientation of the conducted researches** on the declared subjects of the performed scientific work.

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Life quality and health of children and youth of Ukraine

Abstract. Purpose: to describe the parameters of schoolchildren's life quality. **Material and Methods:** the studies were conducted during 2012–2014 in Lviv region (Ukraine). 988 schoolchildren at the age of 15–16 years old, 300 – at the age of 13–14 years old, 406 – at the age of 11–12 years old were surveyed with PedsQL questionnaire. **Results:** it was shown the respondents positively characterized the physical and social health, but their mental state was unsatisfactory. The amounts of children who had serious difficulties with basic physical activity and problems with social communication did not exceed 7%. **Conclusions:** the average life quality indicators were in the range 71,9–85,0 points and according scales Physical Health, Emotional Functioning, School Functioning significantly reduced with age.

Keywords: health, physical activity, quality of life, youth.

Introduction. The quality of life makes indissoluble whole with health of a person. Estimation of the quality of life of children and youth is necessary for the identification of groups of risk, the establishment of efficiency of preventive programs of different level, the forecasting of health of the population in the future.

The main difficulties at estimation of the quality of life of children are predetermined by physical and cognitive development which in turn demands the attention at a choice of techniques for the research. If provide an advantage to the determination of wellbeing which offers WOHC, the quality of life of children and youth will be defined by their ability to take part in a certain physical and social activity [2–4].

For today there are about 30 general and 64 special tools for the estimation of quality of life of children and teenagers. “Kernel” of the majority of the general techniques is the basic concepts connected with physical, mental and social health [5; 6; 8].

The general techniques allow to analyze such compound qualities of life: physical health (physical and motive activity, available feelings of pain, vigor, incidence, practice of immunization), psychological health (emotional state, cognitive functioning), social health (relations with coevals and native, spending of free time with parents and so forth), environment (medical care, carelessness of living conditions), vital competence and so forth.

For studying of wellbeing of children and youth actively use the measuring system PedsQL. It provides separate versions of the questionnaire for different age groups, and the questioner consists of basic and special parts. Questionnaires of PedsQL are translated and adapted and are used in the countries of Europe, North and South America and Asia [1; 2; 5; 8; 11].

In Ukraine PedsQL is used for the research to quality of life of children with sharp or chronic diseases. Therefore actual is a studying of wellbeing of almost healthy faces that allows understanding better norms of health, peculiar for this or that region.

The objective of the research was to characterize parameters of quality of life of the Ukrainian children and youth.

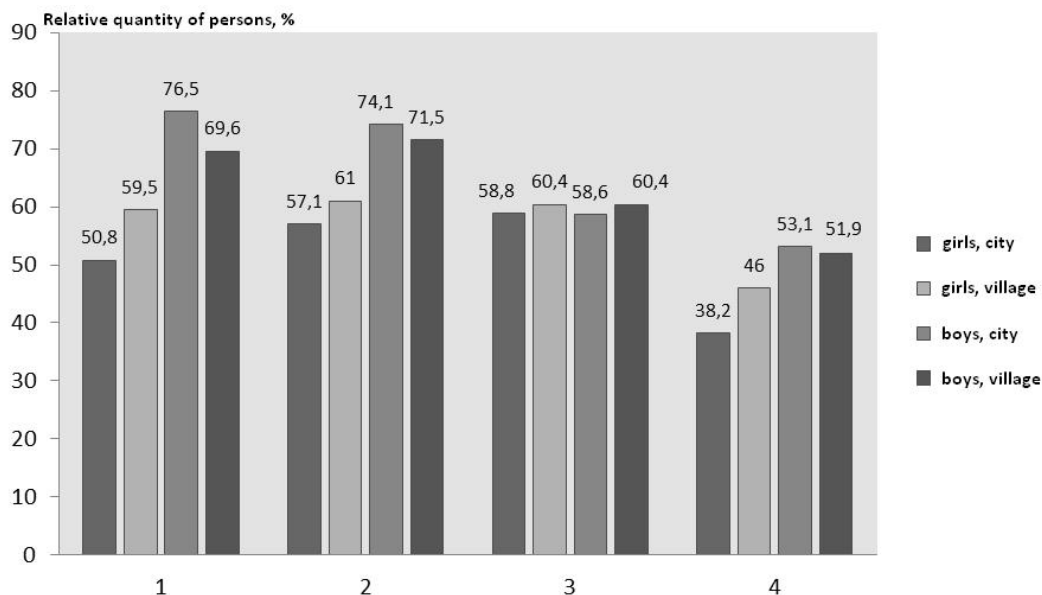
The tasks of the research:

1. To analyze separate indicators of health of pupils (physical activity, psychological state, relations with people around).
2. To calculate a general meaning of quality of life and to analyze an age dynamics of wellbeing.

Material and methods of the research. The sociological research was conducted with the use of questionnaires of PedsQL in 2011–2014 in the Lvov region. 988 pupils of the 10th class (age of 15–16 years old), 300 – 8th classes (13–14 years old), 406 – 6th classes (11–12 years old) took part in PedsQL interrogated according to a technique. Respondents gave answers to separate questions by a 5-ball scale of Laykert. They defined the general indicator of quality of life, and also the value according to scales “Health and activity”, “Emotional state”, “Relations”, “School”.

The program Origin was used for a statistical data processing.

Results of the research and their discussion. Respondents who weren't ill within the last month took part in a poll. The majority of them have no difficulties with the main kinds of basic motor activity. So, 76,9% of the girl tenth-graders which lived in cities, 80,0% – in villages, 85,8% of young men from cities and 78,9% from villages noted that 92,0% of respondents who never needed an assistance to take a bath or a shower, rise more than on one floor by a ladder easily. But considerably the number of respondents is much smaller who perform tasks with ease which demands certain physical efforts (pic. 1).



Pic. 1. Health and activity of pupils of the tenth class:

1 – respondents noted that it isn't difficult to run for them, 2 – to do physical exercises and sports, 3 – to perform daily homework; 4 – respondents feel very vigorous

Note. 238 girls from cities, 328 – from villages, 162 – young men from the city district, 260 – from the rural took part in the poll.

Answers to questions which concerned health and daily activity, differed depending on a sex and a residence of respondents. They noted that it is difficult to run for them, 3,4–4,2% of girls, 1,2–4,3% of boys, noted that it is difficult to run to them (respondents chose answers "often", "almost always"). The lowest indicators are characteristic for youth from rural areas. Answers "Sometimes" or "Almost never" chose 45,0% of girls from cities, 35,7% – from villages, 19,1% and 29,2% of young men – from cities and villages respectively. Among young men the number of respondents who answered "Never", makes 69,6–76,5%, among girls – 50,8–59,5%. And consequently, the number of girls who have no difficulties with run, is for 13,4–17,0% smaller in comparison with boys.

Similar regularities observed concerning the answers of respondents to the statement "It is difficultly to do physical exercises and sports for me". Nearly a half of girls who live in the cities (43,9%), have certain difficulties during classes by physical culture and sport, but young men much more often chose the opposite answer. The relative number of respondents who have no problems with classes by physical culture and sport (chose the answer "Never"), makes 71,5–74,1%.

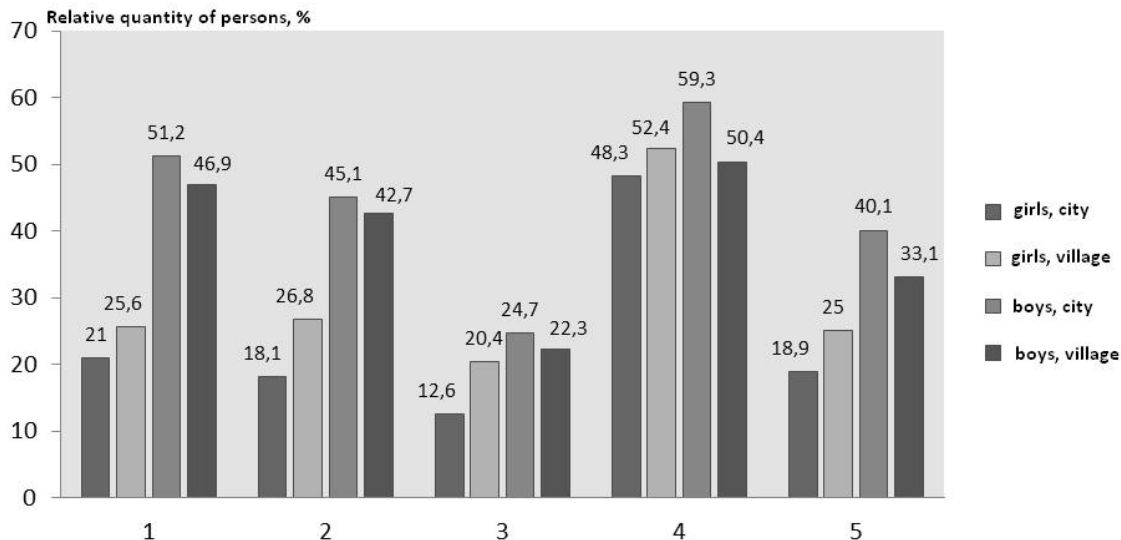
It isn't difficult to lift heavy things of 65,8–70,4% to young men and 41,5–45,8% to girls. However the relative number of persons, who have no difficulties with homework performance, significantly doesn't differ at respondents of a different sex and makes about 60%. Every fifth girl who lives in the city or in the village, often feels physical pain, among boys who live in the cities this indicator makes 16,1%, in the village – 22,6%.

Generally respondents have positive relations with coevals – easily find a common language with other pupils of 80,3% of girls from the cities, 82,3% – from villages, 81,5% and 86,5% of young men who live in city and rural areas respectively. Only 4–7% of respondents noted that coevals often or always sneer from them or don't want to be on friendly terms, and also feel fatigue and concern during communication with schoolmates.

Actual for today for school pupils of any age is the problems with psychological health which is often shown in inability to concentrate, to perform for a long time monotonous tasks, to remember, to store positive

mood and so forth.

Indicators which characterize a mental condition of respondents are worse than physical (pic. 2). 36,6% and 34,1% of girls who live in the village and the city respectively, notice that sometimes, often or nearly always feel fear. The number of boys who choose the same answers is twice lower. Every second girl and every third boy worry for own future, in particular often or nearly always – every seventh schoolgirl and every tenth pupil. Only 18,1% of schoolgirls from the cities and 26,8% from villages answered that never feel suppressed, there is nearly a half of such (45,1% – from the cities, 42,7% – from villages) among boys. Uneasily 5,9–7,4% of pupils, 48,3–59,3% of pupils sleep, never have problems with a dream, 25,9–33,1% of respondents – almost never.



Pic. 2. Psychological state of pupils of the tenth class:

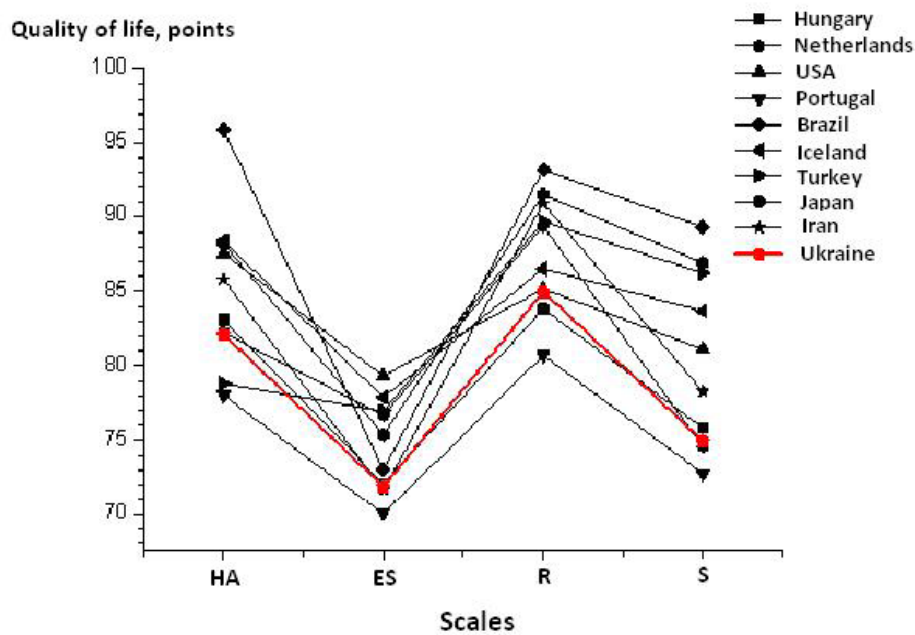
1 – respondents don't complain of feeling of fear, 2 – don't feel suppressed, 3 – angry, 4 – have a quiet dream, 5 – aren't anxious through a future

Note. 238 girls from cities, 328 – from villages, 162 – young men from the city district, 260 – from the rural took part in the poll

It is often or always difficult for respondents to concentrate in a class of 5-11%, thus girls choose these answers twice less than boys. Only every fifth schoolgirl and every third pupil have no problems with performance of tasks at school, every second pupil and schoolgirl always easily concentrate in a class, never forget the things. It is necessary to notice that a significant amount of respondents doesn't attend class at school in connection with feeling sick or to visit hospital or policlinic. 22,3% of schoolgirls from the cities, 36,3% – from villages and 42,0% of young men from the city district, 40,8% – from rural never miss lessons from these reasons. The answer "Almost never" was chosen by 46,6% of city girls, 37,5% of girls, from villages and 35,8% and 38,1% of children from the cities and villages respectively, "Sometimes" – chose every fourth girl and each 6–7 boy. The number of children who often or always skip class at school through feeling sick makes 5,5% for schoolgirls of the cities, 2,1% – of villages, 4,6% – young men of the cities, 5,9% – of villages.

Parameters of the quality of life of the Ukrainian school students compared to wellbeing of respondents from North and South America, Europe and Asia, and also studied data of youth which has different chronic diseases. The quality of life of the Ukrainian pupils according to all scales below, than at children and youth which live in the USA, Brazil, Turkey, Iceland, Japan, Iran and the Netherlands (pic. 3). The average values of wellbeing depending on a scale make 71,9–85,0 points.

The average values according to scales "Health and activity", "Emotional state", "Relations" and "School", don't differ from data for residents of Hungary and above, than in Portugal (tab. 1). According to a scale "Health and activity" Ukrainians have a value on 13,8 points lower, than at citizens of Brazil, 6,3 and 6,1 points – than in Iceland and Japan respectively, 5,4 points – than in the USA, 3,7 points, – than in Iran. Inhabitants of the USA, Iceland, Turkey and Japan, have scale indicators "Emotional state" 3,5-7,4 points above, than at Ukrainians. The level of social activity (a scale of "Relation") at pupils of the 10th class is high; indicators on this scale are the highest and also make 84,9±17,4 points.



Pic. 3. Quality of life of youth (by own results (n=988, age of 15-16 years old) and data of literature [2–5; 7–11]):
 HA – “Health and activity”, ES – “Emotional state”, R – “Relations”, S– “School”

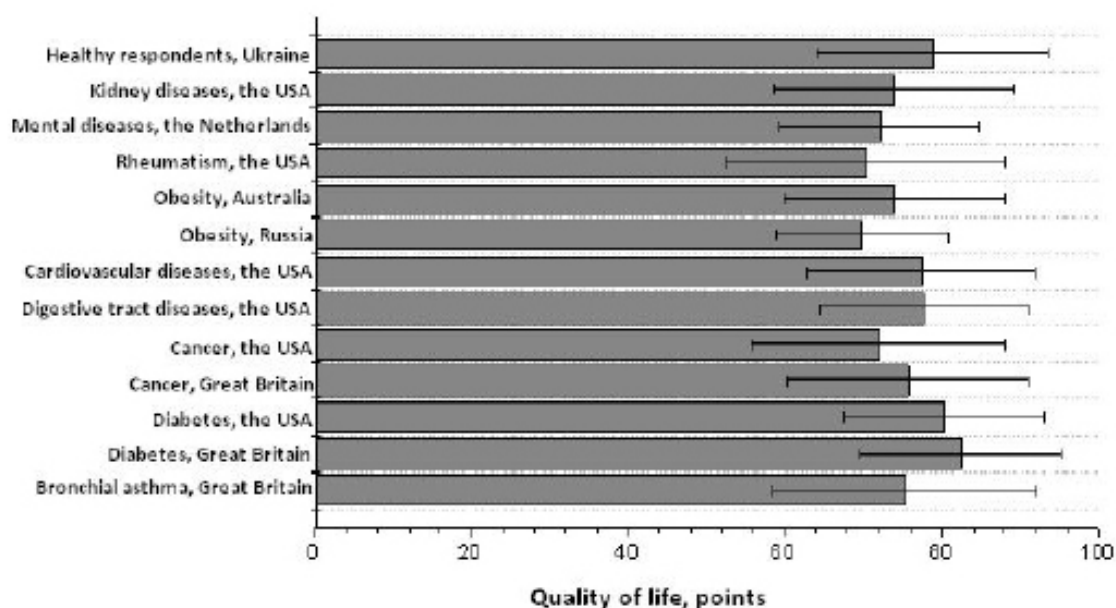
Table 1

Quality of life of children and youth of different countries of the world

Source	Country	Quantity of respondents, age	Scale, points			
			Health and activity	Emotional state	Relations	School
D. A. Klatchoian and others [8]	Brazil	180, 5–18	95,9±5,8	73,0±16,5	93,1±10,5	89,3±11,8
P. Amiri and others [9]	Iran	848, 13–18	85,8±12,8	71,7±18,7	90,9±12,9	78,3±16,2
E. K. Svavarsdottir, B. Orligsdottir [10]	Iceland	330, 10–12	88,4±9,4	77,9±15,0	86,5±14,8	83,7±12,8
V. Engelen and others [4]	The Netherlands	185, 13–18	82,2±9,2	76,7±15,2	89,4±11,6	74,6±13,2
P. Ferreira and others [3]	Portugal	50, 8–12	78,0±19,6	70,1±18,3	80,7±17,8	72,8±15,2
J. Varni and others [11]	the USA	5 480, 8–18	87,5±13,5	79,3±18,2	85,2±16,8	81,1±16,5
S. S. Basgul and others [2]	Turkey	217, 5–18	78,8±18,3	77,0±14,9	89,7±13,1	86,2±13,2
A. Berkes and others [7]	Hungary	366, 5–18	83,1±14,2	72,1±17,8	83,8±16,1	75,8±16,7
K. Kobayashi, K. Kamibeppu [5]	Japan	489, >8	88,2±10,7	75,4±17,7	91,5±12,0	86,9±10,9
Own data	Ukraine	406, 11–12	89,6±11,6	77,1±16,6	85,8±15,2	79,4±14,5
		300, 13–14	86,5±10,1	71,9±15,5	85,1±11,3	74,0±14,8
		988, 15–16	82,1±15,7	71,9±15,6	85,0±17,4	75,0±16,8

The average value of a scale “Relation” doesn’t differ from the values calculated for the population of the USA, but it is on 8,1 points lower, than at Brazil, 6,5 points – Japan, 5,9 points, – Iran, 4,7 point – Turkey and 4,4 point – the Netherlands. Value on a scale “School” makes 74,9±16,8 points and there are 14,3 points below, than at youth of Portugal, 11,2 points – Turkey, 11,9 points – Japan.

According to recommendations of developers of the questionnaire of PedsQL lower than 50 points interpret indicators as bad quality of life, 51–75 points, – average, it is higher than 76 points – high. However the comparison with a group of persons with sharp or chronic diseases is important at the estimation of wellbeing of healthy respondents. Among respondents of clinical group – children and youth of the USA, Great Britain, Australia, the Netherlands and Russia who suffer on bronchial asthma, disease of an enteric-gastric path, vessels and heart, cancer, terminal stage of a chronic renal failure, obesity, rheumatism, mental diseases (pic. 4). The general indicator of quality of life of the Ukrainian pupils makes $78,9 \pm 14,7$ points which are on 3,8 points lower, in comparison with youth of Great Britain and 1,5 points less, than at young Americans who have diabetes. The value of wellbeing of the Ukrainian pupils is 3-5 points below, than at youth from the developed countries which suffers on asthma, obesity, renal failure, cancer (in case of Great Britain); on 7–9 points – than at respondents in whom the cancer, obesity (Russia), mental disorders or rheumatism is diagnosed. The indicator of quality of life of healthy faces practically didn't differ from these respondents with enteric-gastric or cardiovascular diseases.



Pic. 4. The general indicator of quality of life of the Ukrainian youth (n=988, age – 15–16 years old) and respondents of other countries of the world who have different diseases (by data [1; 6; 11]):

CVD – cardiovascular diseases, DT – digestive tract

Younger respondents (the age of 11-12 years old) have the highest indicators according to scales “Health and activity”, “Emotional state” and “School”, in comparison with the senior school students (tab. 2). The value of a scale of “Relation” authentically didn't differ ($p < 0,01$) and were at the high level at all groups of respondents. On this scale the difference between younger and senior pupils makes only 0,8% for girls and 2,7% for young men.

Table 2

Quality of life of boys and girls of the different age, $\bar{X} \pm m$

Scales	Quality of life, points			
	11–12 years old		15–16 years old	
	Girls, n=206	Boys, n=200	Girls, n=206	Boys, n=200
Health and activity	86,5±12,1	89,3±10,6	82,9±15,1	86,5±15,56
Emotional state	75,9±17,8	81,7±13,9	69,4±16,9	76,1±17,52
Relations	86,2±16,1	87,7±13,8	85,4±16,5	85,0±17,8
School	80,5±15,0	80,3±13,7	74,6±15,6	75,9±18,8
General indicator	82,3±11,7	84,8±9,7	77,8±13,5	80,7±15,0

The difference is 5,5–6,5% by the scales «Emotional state» and «School». The value of quality of life on a scale makes «Emotional state» 75,9±12,1 points for girls of 11-12 years old, for persons at the age of 15-16 years old – 69,4±16,9 points; for boys – 81,7±13,9 points, for young men – 76,1±17,5 points. The average value of quality of life on a scale «School» is in limits of 80,3-80,5 points and statistically doesn't differ ($p < 0,01$), irrespective of a sex and age. The indicator for schoolgirls of the tenth class is only on 6 points lower, pupils – 4 points. Behind the scales «Health and activity», «Emotional state», «Relation» the quality of life of girls is lower than at boys irrespectively from the age of respondents.

Conclusions. The respondents positively characterize actually physical and social health; however their mental state is unsatisfactory. 50–75% of respondents gave the highest assessment to physical health and social activity and to psychological health – 13–60% of respondents. The relative number of children who have serious difficulties with basic physical activity and problems at communication with people around doesn't exceed 7%. They observed differences in physical and psychological health, daily activity of pupils depending on a sex and a residence.

The quality of life of the Ukrainian pupils is lower, than at children and youth from the USA, Brazil, Turkey, Iceland, Japan, Iran and the Netherlands. The average values of wellbeing authentically decrease with the age by the scales “Health and activity”, “Emotional state” and “School”. The general indicator of the quality of life of the Ukrainian pupils makes 78,9±14,7 points which are on 3-7 points lower, than at youth of the developed countries which suffers on asthma, obesity, renal failure, mental disorders or rheumatism.

Prospects of the subsequent researches consist in the research of possibility of the improvement of quality of life of children and youth by the application of improving and recreational technologies.

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Therapeutic physical training as a means of prevention for children with frequent episodes of acute respiratory diseases

Abstract. *In the article the author described therapeutic physical training as a means of preventing recurrent acute respiratory diseases in sickly children. **Purpose:** to describe the main approaches to the appointment of medical physical training as a means of prevention of recurrent disease for children with frequent episodes of acute respiratory diseases.*

Material and Methods: *analysis of the current literature on the researched topic. **Results:** the author defines the general and specific objectives of exercise therapy in sickly children, characterized by means of physical therapy appointment procedure for two periods – preparatory and trains, provides approximate complexes of gymnastics and morning hygiene gymnastics for sickly children to training period.*

Keywords: *acute respiratory infections, prevention, exercise, children, complexes of the medical physical culture.*

Introduction. Influenza and a big group of diseases which are characterized by an overwhelming damage of airways unite under the name “acute respiratory diseases” (sharp respiratory infections – SRI) [12]. Parainfluenza, adenoviral, rhinovirus, respiratory- syncytial, coronaviral, bacterial, mycoplasmic and other infections belong to them, except flu. These diseases are caused by different, mainly virus, etiologic agents and widespread worldwide. Each adult 2 times has flu or other acute respiratory diseases on average in a year, a pupil – 3 times, a child of a preschool age – 6 times [3].

Infectious diseases of a respiratory path are the most widespread infectious pathology at children. Acute respiratory diseases arise, as a rule, monthly at often ill children [3; 12].

A child can be ill on SRI repeatedly. If the disease is registered 4 times and more for a year, conditionally it is considered that it is a child who is often ill. The number of such children reaches 72,8% at schools [1; 2]. Polyetiologicity of a sickness, airborne way of a transmission of an infection, instability, and a severe body specificity of immunity is the reasons of a wide circulation of SRI. SRI is quite often complicated by pneumonia, otitis, and sinusitis; occupying the considerable specific weight among the reasons of the child mortality therefore a fight against these infections has a social value. Many viruses own immunosuppressive activity which is shown by a short-term or long decrease in cellular or humoral immunity at viral diseases. The oppression by a virus of specific immunity can become the reason not only the long course of a process, but also the development of a chronic infection [12]. Frequent SRI promotes the formation of chronic bronchopulmonary pathology, arthritis, tonsillitis, and otitis; promote the formation of allergic pathology and a delay of psychomotor and physical development.

Communication of the research with scientific programs, plans, subjects. The problem is developed according to the priority direction which is determined by the Law of Ukraine “About the priority directions of the development of science and technique” by the number 3.5. “Sciences about lives, new technologies of the prevention and the treatment of the most widespread diseases” within the priority thematic direction 3.5.29. “The creation of standards and technique of introduction of a healthy lifestyle, technology of improvement of quality and safety of food”, by the subject “Traditional and nonconventional methods of physical rehabilitation at diseases of different systems of an organism and damages of the musculoskeletal apparatus at persons of different degree of fitness”. The number of the state registration – is 0111U000194.

Acute respiratory diseases belong to a number of the main reasons which predetermine an incidence of pupils now, a decrease of their intellectual and physical working capacity and, as a result – violations of the teaching and educational process [2].

A specific prevention of SRI (creation of vaccines) is connected with great difficulties because now over 120 different viruses and bacteria which cause these diseases are described. In this regard the methods of a nonspecific protection are moved forward for the prevention of the noted diseases on the first place which are directed on the improvement (the observance of sanitary and hygienic rules, a day regimen, airing and cleaning

of rooms, rational application of disinfection means), and the increase of a resilience of an organism of a child (physical culture and training) [9; 11].

Despite of carrying out a complex of treatment-and-prophylactic actions during the dispensary supervision, the recurrence of a disease arises in 41% of children who are often ill on SRI. After the removal from the dispensary accounting of 19% of children more than 3 times for a year is ill on SRI [1]. Therefore more effective treatment-and-prophylactic and organizational forms of medical examination are necessary which component have to be, first of all, funds of physical culture allocated for the functional renewal, the increase of nonspecific immunological reactivity of an organism, the prevention of repeated diseases.

For the increase of a protective potential, an optimum renewal of the functions broken in the course of diseases, and the increase of efficiency of children in polyclinic conditions is applied a complex of medical-improving actions to which treatment-and-prophylactic medicamentous means, physiotherapeutic procedures, the rational mode of physical activity enter. Physical exercises and trainings of an organism are widely used. Ultra-violet radiations (UVR), hydroionization, vitamins of the group B (thiamine, riboflavin), acid ascorbic, etc. are appointed.

Means of the medical physical culture (MPC) with success are applied at treatment of children, patients, who are ill on SRI. MPC increases the efficiency of the complex therapy of SRI, promotes the normalization of body temperature, faster solution of the inflammatory process, reduces terms of stay of patients in a hospital, and considerably reduces a number of complications [10; 12]. Most of authors consider that the application of physical exercises not only during the sharp period of SRI, but also between repeated diseases as to a prophylactic is perspective.

The objective of the research: to characterize the main approaches to the purpose of medical physical culture as to prophylactic of the repeated diseases for children who are often ill on SRI.

Material and methods of the research: the analysis of modern special literature on the studied problem.

Results of the research and their discussion. The prevention of SRI at often ill children is of great importance because each postponed disease scars even weak organism of a child, negatively influences a number of bodies and systems, first of all, on cardiovascular, respiratory and nervous systems, nonspecific immunological reactivity, etc. [3].

The medical physical culture (MPC) is one of the prophylactics of SRI [1; 6]. Results of the researches of a number of authors testify to considerable changes which take place in an organism of children who are often ill on SRI [2; 3]. These changes begin during the sharp period of SRI and, obviously, are the prerequisite for the repeated diseases.

Hypodynamia influences on a condition of children who are often ill on SRI. It is connected with that a severe restriction of the motive mode is one of the main conditions of modern treatment of SRI therefore children who are often ill, actually most part of their life are in a condition of hypokinesia which negatively influences the growing organism and first of all cardiovascular and respiratory systems. Therefore, at frequent SRI, on the one hand, there is a decrease in compensatory and reserve opportunities of an organism of a child, and on the other hand, – negative influence on it of the compelled hypokinesia [4; 6]. Therefore for the purpose of the elimination of the available violations and the prevention of the repeated SRI it is expedient to appoint MPC during the period between diseases. Especially as now expediency of application of MPC is proved in early terms of SRI as it promotes faster recovery of children [1].

Parents address to children's polyclinic when a child is considered almost healthy concerning frequent SRI. However it has considerable changes in a functional condition of cardiovascular and respiratory systems and in morphological composition of blood, the decrease in nonspecific resistance, and an allergic condition of respiratory organs. Therefore MPC should appoint differentiated to such patients. The general tasks of MPC look in such way [5; 7]: the improvement of a subjective state, the increase of resilience of an organism, the development and the improvement of applicate mechanisms to physical activity, the improvement of function of a myocardium, the development and the improvement of a number of basic motor skills (races, walking, climbs, throwing) and physical qualities, the prevention of repeated SRI. Special tasks will be such [6; 7]: the study of children to the correct breath, the strengthening of muscles of a belt of the top extremities, thorax and back, the increase in mobility of a thorax and joints, the correction of postural defects, the normalization lympho-and blood circulation of a nose and throat.

The mechanism of a medical action of physical exercises at children who are often ill on SRI, – neuroreflex

- humoral which is shown by four medical actions: the toning influence, the improvement of trophic processes in an organism of patients, the development of compensations, the normalization of functions [8].

The course of prescription of MPC to often ill children consists of two periods: preparatory and training. The preparatory period includes 4–5 classes of MPC. The methodologist meets a child, studies his reaction to physical activity, and teaches his behavior on classes, walking by a system, to performance of starting positions and orders. Exercises differ in simplicity of a performance during this period. The special attention is paid to breathing exercises and on relaxation. The training period at polyclinic supervision lasts 3–4 months. Classes include the general-developing exercises with more difficult coordination of movements and with physical activity which gradually increases. Classes are directed on the education of endurance, the increase of resilience of an organism, the improvement of physical development during this period.

At the beginning of the course of MPC it is expedient to carry out functional tests. In the presence of a negative reaction to the functional test which often appears at children from decompensate toxic - allergic tonsillitis, adenoiditis, sinusitis, in the first days of the preparatory period before classes excludes run, the general-developing exercises connected with considerable effort, and also intensive outdoor games [6; 7]. Walking, simple exercises during walking; the special respiratory and general-developing exercises are appointed. The main movements are improved. Children are taught the correct breath, ability to combine breath phases with the movement. The increase of pulse is allowed on 20% during this period approximately. If pulse becomes frequent more, than on 20–25% at study of motor skills, the exercise temporarily exclude from a technique of classes (for example, jumps, climb, and others). However physical activity has to increase in the course of treatment. It is especially important to dose correctly loading at transfer of children to the training mode. Physical activities are admissible during this period in the functional relation that cause the increase in HR to $170 \pm 3,8$ bpm. Therefore it is equivalent to appoint physical activity in the main part of classes which volume causes the increase in HR within 130–170 bpm., that is increase of HR approximately for 75–80% is allowed. The increase in HR to $150 \pm 4,8$ bpm. is allowed at the development against frequent SRI of allergen of the top airways, that is approximately on 45–55%. The volume of physical activity on classes is regulated by a starting position, amplitude and rate of movements, frequency rate of repetition and a number of the exercises included to a complex.

When carrying out classes the special attention is paid to renewal of nasal breath which in some cases happens was broken as a result of allergen of the top airways (toxic-allergic tonsillitis, pharyngitis, rinosinit and others). The violation of nasal breath is promoted by anatomic features of respiratory system at children – narrowness of a cavity of a nose, tenderness and tendency, swelling of a slimy cover.

Children are accustomed to breathe a nose therefore comes to lungs of air evenly and in bigger volume during the performance of physical exercises. Passing through the nasal courses, air is cleared, warmed, moistened; irritating nervous receptors, – reflex influences the respiratory center, strengthens a tone of respiratory muscles and increases a breath depth.

The breathing exercises of static and dynamic character directed on the strengthening of respiratory muscles, muscles of the top extremities (assignment of hands in the parties, back, trunk inclinations forward, back, in the parties and others) are used for the achievement of a rhythmical and deep breath. The efficiency of the process of a study to the correct breath of school students depends on observance of the principle of presentation in many respects [4].

Special breathing exercises with loud and long declaration of the hissing and whistling sounds at the full prolonged exhalation are appointed [8; 10]. If during an exhalation there is a cough, duration of an exhalation is reduced. Breathing exercises alternate with general-developing, intended for training of different muscular groups.

When carrying out classes is paid attention to the development of a correct posture. It is promoted by ability to keep correctly, methodically correctly walking, run, climbs, etc. The majority of the correcting exercises are carried out from a starting position, lying on a back and a stomach. The technique of classes join also exercises which promote the strengthening and the correct formation to a foot arch (prevention of platypodia), – walking on tiptoe, on an outer edge of a foot, raising on socks, etc.

Outdoor games include in classes of MPC. At first they are simple and easy for the performance, and then they gradually become complicated, physical activity increases.

Classes of the remedial gymnastics (RG) are given during the period between the transferred SRI. It consists of three parts: preparatory, main, final.

The task of the preparatory part is: the creation of an emotional preparedness and interest in classes at children, the check of attention degree at them, the gradual preparation of an organism of a child to more hard work in the main part of classes which is reached by inclusion in a technique of walking and the exercises during walking intended for training of muscles of a belt of the top extremities, the renewal of function of the respiratory system, the prevention of violations of a bearing and platypodia.

The general and special tasks of MPC are solved in the main part of classes. At the beginning and in the middle of this part fast walking, transitional in run which comes to the end with walking during which sounds are said is applied: “s-s-s”, “sh-sh-sh” and others, and also become the movements by hands: through the parties – up, through the parties – down. The general-developing exercises (GDE) from different starting positions, ball games, medicine-ball (a mass of 1 kg), relays, and elements of sports games are used. GDE are carried out with sticks, balls. Exercises are selected so that big groups of muscles gradually got into a gear, promoting the increase of a functional condition of an organism. Exercises for the development and strengthening of muscles of a belt of the top extremities, the formation of a correct posture and the normalization of processes of breath, then for the development and strengthening of muscles of an abdominal tension, the lower extremities, a back and a spine column are carried out. GDE alternate with the relaxation exercises and special exercises which are directed on the improvement of function of the respiratory device and elaboration of breath through a nose. GDE, strengthening a work of cardiovascular and respiratory systems, as if prepare a child’s organism for even bigger loading – participation in an outdoor game which, besides, causes an emotional lift in children.

In the final part of classes the loading gradually decreases to the level close to day off which is reached by the use of special exercises, – respiratory, on attention and relaxation. Duration of classes of MPC – is 40–45 min [7]. Classes are given every other day. Further we provide a model complex of physical exercises and a complex of morning hygienic exercises for children who are often ill on SRI, for the application in a mid-sickness state in the training period (see tab. 1, 2).

Table 1

A model complex of physical exercises for an application in out-patient conditions for children of 12-14 years old who are often ill on SRI (the training period)

No	S. p. and the content of an exercise	Dosing	Rate of performance	Methodological indications
1.	Construction	1 min		
2.	Walking: on tiptoe, hands up on heels, hands behind a head, on an outer edge of a foot; hands are pressed to shoulders, roundabouts by elbows back	on 20 s	in an average rate	To hold a chin highly, to watch a bearing
3.	Walking	30 s	in a quick rate	The same
4.	Run	1–1,5 min	in a temperate rate	The same
5.	Walking with a declaration of sounds (“s-s-s”, “sh-sh-sh” but other), breakthroughs by hands back during walking	1 min	in a slow rate	The same
Exercises with a gymnastic flail				
6.	S. p. – standing, a gymnastic flail is in hands. Accounting 1 –to put flail on a shoulder, – accounting 2 - hands up with a flail, to rise on tiptoe, accounting 3-4 to return to s.p. Accounting 3-4 – a little prolonged exhalation	8 times	average	To control breath
7.	S. p. – standing, feet on width of shoulders. To hold a gymnastic flail for the ends. Accounting 1 – a trunk inclination sideways with a flail in outstretched arms, accounting 2 – to return to s.p.	6 times to each side	average	To make an exhalation at an inclination of a trunk

table 1 continued

No	S. p. and the content of an exercise	Dosing	Rate of performance	Methodological indications
8.	S. p. – feet together to hold for the ends of a gymnastic flail. Accounting 1 – to raise hands up – a breath, accounting 2 – a trunk inclination forward, to put a flail on a floor – an exhalation, accounting 3 – to become straight – a breath, accounting 4 – a trunk inclination forward, to take a gymnastic stick in a hand – an exhalation	6 times	average	Not to bend a knee, becoming straight to cave in a waist
9.	S. p. – standing, feet on width of shoulders, a gymnastic flail lies at feet. Accounting 1 – to raise hands to axillary poles – a breath through a nose, accounting 2 – is weakened to lower hands down – an exhalation through a mouth	6 times	average	To control breath
10	S. p. – standing, feet together, a gymnastic flail in the lowered hands, hands one from another are on 15–20 sm., accounting 1-2 – to bend forward, to cross through a flail between hands, to become straight (a gymnastic flail behind the back), accounting 3-4 – to bend forward, to cross through a flail between hands, to become straight (a gymnastic flail ahead below)	6 times	average	After each step through a flail it is obligatory to become straight a trunk sharply. Breath is free
11.	S. p. – standing, a gymnastic flail lies at feet. accounting 1 – an emphasis, having sat down, accounting 2 – a jump an emphasis, lying, into account 3 – a jump an emphasis, having sat down, into account 4 – to return to s.p.	6 times	average	Breath is free
12.	S. p. – standing, feet on width of shoulders, the case is inclined forward, a gymnastic flail in hands. The rhythmical pendulum movements by hands to the right – to the left	25 s	average	Breath is free
13.	S. p. – lying on a back, a gymnastic flail in hands over a head. – to sit down accounting 1-2, a gymnastic flail in hands extended forward, accounting 3-4 – to return to s.p.	8 times	average	In situation, sitting, to watch a bearing
14.	S. p. – lying on a back, the ends of a gymnastic flail in hands. The middle tenacious touches a stomach. accounting 1-2 – a breath to stick out a stomach, to lift a gymnastic flail, accounting 3-4 – an exhalation, to pull in a stomach, to lower gymnastic flail	6 times	average	To control breath
15.	“Swallow”. S. p. – lying on a stomach, a gymnastic flail in the hands extended forward (to hold for the ends). Accounting 1-2 – to cave in in chest and lumbar sites; hands with a gymnastic flail and to lift straight feet, hold into two accounts, to return to s.p.	8 times	average	As much as possible bending, breathing free
16.	S. p. – lying on a back, to part hands in the parties with palms up, gymnastic flail for the chairman. Accounting 1-2 – to embrace itself for shoulders – an exhalation through a mouth, accounting 3-4 – to return to s.p. – a breath through a nose	6 times	temperate	Feet together
17.	S. p. – lying on a back, hands with a gymnastic flail (to hold for the ends) over the head. Accounting 1-2 – hands with a gymnastic flail forward, accounting 3-4 – to carry by through feet, to lower hands and to arrange a flail over knees, accounting 5-6 – to carry by feet through a flail in the opposite direction, to return to s.p.	6 times	temperate	It is obligatory to be straightened, breath is free

No	S. p. and the content of an exercise	Dosing	Rate of performance	Methodological indications
18.	S. p. – lying on a stomach, hands in an emphasis, a gymnastic flail on a floor in the face of at distance of outstretched arms. Accounting 1-2 – to become straight hands in elbow joints, to cave in, look at a ceiling, accounting 3-4 – to return to s.p.	8 times	average	Feet together, a stomach concerns a floor. Breath is free
19.	“Worm”. S. p. – lying on a back, a gymnastic flail in outstretched arms (for the chairman). The child moves ahead at distance of 3-4 m, without bending a foot in knee joints and without leaning on five	30 s	temperate	Breath is free
20.	S. p. – standing. Walking on the hall at fast speed, hands are bent in elbow joints	1 min	average	Accounting 1 – inhalation, accounting 2–3–4 – exhalation
21.	Run	1–1,5 min	average	Breath is free
22.	Walking with movements of hands through the parties – up, through the parties – down with declaration of sounds of “s-s-s”, “sh-sh-sh” and others	1–1,5 min	temperate with a transfer on average	To control breath
Exercises with a ball				
23.	S. p. – standing. Dribbling on a hall (basketball elements)	3 min	average	Not to bend strongly
24.	S. p. – standing. In the general system during walking to throw a ball up and to catch	1 min	average	To control breath
25.	S. p. – standing facing wall bars, a ball in hands. Accounting 1 – to lift a ball over the head – a breath through a nose, accounting 2 – to return to s.p. – an exhalation through a mouth	6 times	average	Not to bend forward
26.	S. p. – standing facing wall bars. Loudly considering to 6, to take 6 steps forward and behind of a head to throw a ball into flight of wall bars	6 times	average	To control breath
27.	S. p. – standing a back to wall bars, feet on width of shoulders, a ball in hands. –Hands up. Accounting 1 up – a breath, accounting 2 – to return to s.p. – an exhalation, – to raise hands. Accounting 3 up – a breath, accounting 4 – having bent forward, to throw a ball between feet into wall bars	6 times	average	To aspire that a ball doesn't slide on a floor, and flies
28.	S. p. – standing. Walking	30–40 s	average	During walking, hands behind a head –a breath through a nose, hands down – an exhalation through a mouth
29.	Outdoor game	5–6 min	average	To control breath
30.	S. p. – standing. Walking, with a performance of exercises on attention	1,5 min	average	Not to hold breath
31.	Inflation of rubber toys	1 min		Not to hold breath

Table 2

A complex of morning hygienic exercises for children of 12-14 years old who are often ill on SRI

No	S. p. and the content of an exercise	Dosing	Rate of performance	Methodological indications
1.	Walking	30–40 s	average	A slow breath
2.	Run	1 min	temperate	The same
3.	S. p. – standing, heels together, socks separate, fingers are slightly squeezed in a fist at the level of shoulders. – to raise hands, accounting 1 up, to become straight fingers, to turn palms in the middle, slightly to rise on tiptoes, accounting 2 – to return to s.p.	6–8 times	average	The same
4.	S. p. – standing, feet on width of shoulders. Hands are bent in elbows; hands are squeezed in a fist. Accounting 1-2 – vigorously to throw out hands («Boxer») forward. To repeat each hand	10 times	average	The same
5.	“Woodcutter”. S. p. – standing, feet on width of shoulders, a breath. Accounting 1-2 – sharply to bend – the deep exhalation, accounting 3-4 – to return to s.p. – a breath, to lower hands	6–8 times	average	Not to hold breath
6.	Knee-bend. S. p. – standing, hands on a belt. Accounting 1-2 – to sit down on a full foot, to extend hands forward, accounting 3-4 – to rise, to put hands on a belt	6–8 times	average	Not to hold breath
7.	S. p. – Standing, a jump rope in hands. Jumps with a jump rope	1–1,5 min	average	Not to hold breath
8.	Walking	within 1 min	average	During walking to carry out breathing exercises

Conclusions:

1. It is established that functions of central nervous, cardiovascular, respiratory, muscular and other systems decrease in much bigger measure at school students who are often ill on SRI, even postponed benign, than at children who are seldom ill.

2. The prevention of SRI is of great importance at children because each postponed disease scars a deep sign in not yet strong organism of a child, negatively influences a number of bodies and systems, first of all, on cardiovascular, respiratory and nervous systems, nonspecific immunological reactivity, etc.

3. The medical physical culture which is appointed by two periods is one of the prophylactics of SRI: preparatory and training in a mid-sickness state.

Prospects of the subsequent researches consist in the development of the comprehensive program of physical rehabilitation for children of middle school age that transferred SRI, taking into account a distribution of the period of a recovery on clinical and biological stages.

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The research of the efficiency of the performance of a male national picked team of Ukraine on the world championship on basketball in 2014

Abstract. Purpose: to determine the efficiency of game indicators of a male national picked team of Ukraine on the World Championship on basketball in 2014. **Material and Methods:** theoretical analysis of scientifically methodical literature, pedagogical observations, methods of mathematical statistics. **Results:** indicators of the efficiency of a game activity of basketball players in games of the World Championship of 2014 were studied. Game indicators of the Ukrainian team are analyzed, the efficiency of individual actions of the leading basketball players of the world is considered. **Conclusions:** it is established that basketball players of Ukraine had a result below an average on all components of indicators of technical and tactical actions in attack and defense in games of the World Championship in 2014, except the efficiency of free throws where the accuracy of their performance was the highest in the group. It is revealed that the defender Eugene Jeter was the leader of the Ukrainian team in this championship.

Keywords: throws, hits, pick up, grasp change, fouls, loss, blocked shot, passes.

Introduction. The analysis of the competitive activity in command game sports is the most important task for the determination of the efficiency of all system of training of a sportsman. Unlike individual sports, the competitive activity consists of a large number of indicators in attack and defense in sports games therefore the productivity of technical and technical actions and their activity are considered during a control of the efficiency of game indicators of a team in general and certain players.

Indicators of the game activity were analyzed by V. I. Perevoznik, A. A. Pertsukhov, V. V. Payevskiy [6] in football, in volleyball – E. Ya. Strelnikova, T. P. Lyakhova, V. I. Kramarenko [10], Yu. A. Gorchanyuk, Yu. O. Taranyuk, V. A. Gorchanyuk [1], V. A. Gradusov, V. K. Lisyanskiy, A. Yu. Melnik [2], in handball – S. F. Chervona [12]. The efficiency of game indicators of highly skilled basketball players were studied by Zh. Kozina, S. Zashchuk, L. V. Grin [4], R. Sushko [11], E. Doroshenko [3], F. Erčulj, B. Dežman, G. Vučovič et al [14], youth teams – N. I. Chucha, N. A. Pashchenko, M. V. Zaseka [13], I. P. Pomeshchikova [7], players with a hearing impairment – I. Sobko [9], A. B. Pokusay, L. V. Marakhovskaya, I. P. Pomeshchikova [10], basketball players on invalid carriages – M. V. Mishin [5]. It is noted in works that the analysis of the competitive activity allows reveal, estimate and compare components of the competitive activity of various players and on this basis to optimize the process of management of the competitive and training process of sportsmen, providing the increase of the level of sports results.

Communication of the research with scientific programs, plans, subjects. The research was conducted according to a subject of the plan of the RW of Kharkov state academy of physical culture 2.8. “The improvement of the educational and training process in sports” (the number of the state registration is 0111U003126).

The objective of the research: to determine the efficiency of game indicators of the men’s national team of Ukraine on basketball in the World Championship of 2014.

The material and methods of the research: theoretical analysis of scientific and methodical literature, pedagogical supervision, methods of mathematical statistics.

The results of the research and their discussion. The basketball World Championship 2014 took place under the name of the World Cup on basketball (Basketball World Cup) for the first time. It is the 17th playing off of the World Cup on basketball which took place from the 30th of August till the 14th of September, 2014 in Spain. The next playing off will take place in five years, in 2019 then the system of holding the World Cups will return to a habitual four-year cycle again. It is made to hold the World Cups on basketball and football in different years.

The city Madrid was the main place of a tournament in 2014. The greatest number of matches and the final of the championship passed there. Also matches took place in Barcelona, Bilbao, Seville, Granada and Las Palmas de Gran Canaria. The final round passed on two arenas: on “Palacio de Deportes de la Comounidad de Madrid” and “Palau Sant Jordi”.

When holding this championship the organization of drawing up couples was changed in a grid 1/8 of finals. Teams from A and B groups appeared in one half of a grid and held the matches in Madrid while teams from C and D groups appeared in other half and played the matches in Barcelona; teams from A and B groups couldn't meet teams from C or D groups to the final or the match for the third place and could meet teams from the group already in a quarterfinal.

The team of the USA became the world champion in 2014 which won a team of Serbia with the score 129:92 in the final. Teams of Lithuania and France played for the third place where bronze medals were won by French basketball players (95:93) in a persistent fight against overweight in 2 points. It should be considered the considerable achievement of the European basketball, three teams from Europe were included into the four of the strongest teams of the world.

The men's national team of Ukraine on basketball started on the World Cup for the first time in the history in 2014. The senior coach Michael Fratello headed the team. In Spain the national team of Ukraine was represented by 12 basketball players which age was on average 22, 6 years old. The 30-year-old Eugene Jeter was the most experienced player as a part of the national team, and the youngest, not only in the team of Ukraine, but in the whole championship – was the 17-year-old Svyatoslav Mikhaylyuk. The average growth of the team – is 200 sm. There is a wish to note that 2 graduates of Kharkov state academy of physical culture were presented as a part of the national team: MSIC Artem Pustovoy and MSIC Alexander Lipovyi (a pupil of coaches of Pokrovenko Lyudmila Nikolayevna and Pokrovenko Sergey Maksimovich of CI CYSS No. 7 in Kharkov).

The team of Ukraine played in the group C. The national teams of Dominican Republic, Finland, Turkey, New Zealand and the USA were our rivals. In the first match basketball players of the national team of Ukraine won the first victory in the history in the World Cups. Our team beat the national team of Dominican Republic with the score 72:62 (12:13, 15:14, 21:13, and 24:22). Results of other matches were as follows: Ukraine – Finland 76:81; Ukraine – Turkey 64:58; Ukraine – New Zealand 61:73; Ukraine – the USA 71:95. It didn't allow a command of Ukraine to leave in 1/8 of finals of the championship.

The main game indicators of teams of the group C are presented in tab. 1 and 2. Analyzing the efficiency of throws of the team of Ukraine for 5 played matches, it was revealed by us that the team scored 68, 8 points on average for a game, thus the average value on the group made 74,9 points for a game. The World champions – the team of the USA scored 104, 6 points on average for a game.

Table 1

Indicators of the productivity of teams of the World Cup among men of the group C of 2014

Team	P	Total from a game			2-point throws			3-point throws			Free throws		
		H	T	%	H	T	%	H	T	%	H	T	%
Dominican Republic	68,0	26,5	62,2	42,6	20,0	42,8	46,7	6,5	19,3	46,7	6,5	19,3	46,7
Finland	68,4	24,0	62,0	38,7	15,2	37,2	40,9	8,8	24,8	35,5	11,6	15,6	74,4
Turkey	70,1	24,1	57,7	41,8	17,6	37,0	47,5	6,6	20,7	31,7	15,3	22,3	68,6
New Zealand	69,7	26,0	64,2	40,5	18,3	39,3	46,6	7,7	24,8	30,9	10,0	14,8	67,4
the USA	104,6	40,1	76,7	52,3	31,5	55,3	57,0	8,6	21,3	40,1	15,8	22,1	71,4
Ukraine	68,8	23,8	58,6	40,6	15,0	37,6	44,6	8,8	25,0	35,2	12,4	16,8	73,8
On average	74,9	27,4	63,5	42,7	19,6	41,5	47,2	7,8	22,6	36,7	74,9	27,4	63,5

Note. P – points, H – hits, T – throws.

It should be noted that the most productive of the Ukrainian basketball players on the World Cup was Eugene Jeter who brought 15, 4 points on average for a game, and in a game against the national team of Finland his contribution to a moneybox of the team made 24 points. The player Puerto-Rikansky of the republic José Juan Barea was the most productive basketball player of the World Cup who gathered 22 points on average for a game. The record of the Cup was set by a player Angola Janik Moreira, having scored 38 points in a game against the team of Australia.

The Ukrainian team had 40, 6% of the efficiency of throws from a game, at average on the group of 42, 7%.

The lower accuracy was shown only by teams of New Zealand (40, 5%) and Finland (38, 7%). The team leader of the World Cup showed the productivity in throws of 52, 3%.

The accuracy of 2-point throws of a ball of the Ukrainian players made 44,6% in the World Cup. Thus the productivity of 3-point throws was 35, 2%, throws from the line of a free throw – 73, 7%. The team of Ukraine showed the highest productivity of near and average throws in a game against the team of Finland – 58,3%, however and in a game against the USA the productivity of 2-point throws wasn't lower than average and made 44,7%. The best accuracy of distant throws was observed in the first game, against the team of Dominican Republic – 43, 5%, and the lowest – in a game against the team of Turkey – 32,6%. The accuracy of free throws of the highest was against the team of Turkey of 85,7%, and the worst in a game against a team of the USA – 68,4%. It should be noted that the accuracy of 2-and 3-point throws of the Ukrainian basketball players was below an average value on the group, and lower efficiency was shown in 2-point throws only by players of Finland (40,9%), and in the 3-point – basketball players of Turkey (31,7%) and New Zealand (30,9%). Thus the Ukrainian players showed a high precision of free throws, above average on the group for 10,3%, conceding on this indicator only to the team of Finland.

The Ukrainian basketball players carried out 33, 2 rebounds of a ball on a board, from them 24,8 on their board and 8,4 on the rival's board on average for game. The team of the USA had the best indicator on rebounds of a ball during the championship, on average 44,8 times for a game (tab. 2).

Table 2

Indicators of the game efficiency of teams of the World Cup among men of the group C of 2014

Team	AS	Rebound of a ball			IN	BSh	LO	Fouls of players
		Total	TB	OB				
Dominican Republic	13,5	39,7	28,8	10,8	5,7	3,0	18,0	19,7
Finland	13,0	29,6	21,0	8,6	7,4	2,0	15,8	24,6
Turkey	15,4	35,6	26,1	9,4	6,7	3,4	14,4	19,0
New Zealand	13,5	39,7	24,5	15,2	4,2	1,3	16,3	20,8
the USA	20,4	44,8	29,8	15,0	12,1	5,6	13,7	19,8
Ukraine	12,4	33,2	24,8	8,4	5,8	1,4	15,6	19,4
On average	14,7	37,1	25,8	11,2	6,9	2,7	15,6	20,5

Note. RP – assist, TB – their board, OB – others board, IN – interception, BSh – blocked shot, LO – losses.

The most active in a fight for a ball jump off in the Ukrainian team were a center Maxim Korniyenko who seized a ball on average 5,8 times, and 5,0 times from them on their board, and Vyacheslav Kravtsov with the productivity 5,6 times (4,4 times on their and 1,2 on others board). Endrey Blatch, a center Philippines with the height 211 sm who seized a ball on average for a game of 13, 8 times, was the best in a fight on a board in games of the World Cup. The record result on rebounds of a ball on a board was shown by the Turkish sportsman Omer Ashikh, in a game against the team of Ukraine, "having removed" a ball 20 times.

On indicators of assists the Ukrainian basketball players in the subgroup had the worst indicator – 12,4 passes. Eugene Jeter was the most active in our team, carrying out on average 5,0 assists for a game. It should be noted that our defender on this indicator was on the 4th place among all players of the World Cup and as the most productive, with 5,8 passes for a game, was in the lead the Finnish basketball player Petteri Johannes Koponen. In the championship 14 assists of the Senegalese player Ksane Dalm became record in a game C against the team of Philippines.

The analysis of the "blocked shots" executed by teams showed that the Ukrainian basketball players had a result below average of the group, advancing only the team of New Zealand. The largest number of "blocked shots" in games of the championship was made by the American center Anthony Davies (208 sm), for 9 games he "covered" a rival's throw 19 times, with a record indicator of 5 "blocked shots" in a game against Dominican Republic. However the Korean basketball player Li Chzhong-Hyun was the leader in this indicator on average for a game – 2,6 times (the results of 5 games). Among the Ukrainian players a center Vyacheslav Kravtsov had the best result – on average 0,4 times for a game.

Studying of indicators of interceptions of a ball in the championship revealed, as in this indicator the team of Ukraine had one of the worst results in the group, having overtaken only the team of New Zealand. The

Spanish basketball player of Ricky Rubio was the leader in indicators of interceptions of a ball in the World Cup, having executed 25 interceptions for 7 games (on average 3,5 interceptions for a game), having set a record in a game against the team of Serbia where he took away a ball from the rival of 7 times. In the team of Ukraine the best result on interceptions of a ball was observed at Maxim Pustozvonov, on average 1,4 rebounds for a game. Among teams the team of the USA was in the lead in this indicator, having executed for 9 games of 109 interceptions (on average for a game 12,1 rebounds of a ball), and in a game against the team of Finland they selected a ball of 18 times.

Conclusions:

1. The men's national team of Ukraine in the World Cup of 2014 had a result below an average of the group C, except an indicator of the accuracy of free throws in game indicators of technical and tactical actions.
2. The defender Eugene Jeter was the leader of the Ukrainian team in this championship.

Prospects of further researches in this direction are connected with studying of the efficiency of game indicators of the women's national team of Ukraine and their comparison with the received results of the men's team.

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The relationship of psychophysiological characteristics karate qualifications in light weight category with the effective implementation of kick leg techniques in upper level of the opponent

Abstract. Purpose: set the density of the relationship of psycho-physiological characteristics of karate qualifications in light weight category with the efficiency of the implementation of kick leg techniques in the upper level of the opponent.

Material and Methods: The study involved thirty highly skilled karatekas in light weight category. Conducted pedagogical and psychophysiological testing, carried out an analysis of competitive actions, carried out a special analysis of scientific and methodical literature, applied the methods of mathematical statistics. **Results:** The degree of correlation between the obtained numerical results of psycho-physiological characteristics and indicators of the effectiveness different types of gradient kicking karate qualifications in light weight category in upper level of the opponent. **Conclusions:** karatekas of high qualifications in light weight category, the higher the strength of neural processes in the processing of information in the imposed rhythm, the more reliable in a competitive match under implementation methods kick leg them with maximum power and speed-up in upper level of the opponent, and at the higher they characteristic of functional mobility of nervous processes in the processing of information in the imposed rhythm, the greater the likelihood of fighters attacking moves fast.

Keywords: Karate, Kyokushinkai, characteristics, psychophysiology, kick, efficiency.

Introduction. Various impact techniques apply in the majority of sports views of karate according to rules of competitions in wrestles by fighters. Its performance influences the efficiency a number of factors which are connected with genetic and physiologic characteristics of a karateka, his physical and psychological preparedness for a concrete fight, a conceived tactical plan and so forth. Specificity of the competitive activity of the chosen type of karate forms a technical arsenal of a power or high-speed orientation at a sportsman. The objective of this research is a type of kyokushinkai karate which personifies competitive fights with techniques which are carried out with the maximum force for the achievement of knock-out effect. However, near power characteristics of karatekas, high-speed carrying out of impact techniques in a fight by the rules of kyokushinkai karate has also the importance for the achievement of a victory. Especially actual it is for karatekas of high qualification of easy weight category where rivals have approximately equal indicators of versatile preparedness, but have no such muscular to a corset as a heavyweight. Therefore, despite of that power kicks have to be priority, their performance has to be carried out with acceleration. The definition of psychophysiological characteristics which influence the speed of performance of concrete impact techniques of karatekas, can promote the increase of efficiency of their general technical realization in a responsible fight.

Oriental martial arts and improving systems took root into the process of physical training and sports activity of modern youth densely [16; 18]. The confirmation of a positive effect concerning the improvement of psychological and psychophysiological characteristics from a regular visit of such training classes by students is directed in works [2; 7; 15]. Problems of diagnosing and correction of similar characteristics at sportsmen of high qualification of different specialization are opened by scientists in sources [1; 4; 8; 19]. In turn, the fundamental subsoil of rather psychophysiological preparation of a wrestler [3] includes only the general bases without specifics of the chosen type of single combats and the regulated rules of competitive fights. Specialists in karate provide [10; 17; 20] data on optimization of the training process and the achievement of a victory in fights on karate. However to the analysis of psychophysiological characteristics of karatekas is still not paid attention. In the previous works we studied separate psychological and psychophysiological characteristics of sportsmen who specialize on kyokushinkai karate [10–14]. In this research the definition of interrelation of psychophysiological characteristics of karatekas of high qualification of easy weight category with the efficiency of realization of impact techniques by a foot is carried out to the top level of an opponent.

The objective of the research: to establish the density of interrelation of psychophysiological characteristics of karatekas of high qualification of easy weight category with the efficiency of realization of impact techniques

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by a foot to the top level of an opponent.

The tasks of the research:

1. To investigate a complex of psychophysiological characteristics of karatekas of high qualification of easy weight category.
2. To record indicators to a gradient of the efficiency of different types of a kick of karatekas of high qualification of easy weight category to the top level of an opponent.
3. To carry out statistical processing and to define an extent of correlation communication between the received numerical results of psychophysiological characteristics and indicators to a gradient of the efficiency of different types of a kick of karatekas of high qualification of easy weight category to the top level of an opponent.

Material and methods of the research: pedagogical supervision and analysis of the competitive activity, analysis of data of special, scientifically methodical literature and Internet, methods of mathematical statistics.

30 sportsmen were selected by the qualification of the Master of Sports of Ukraine and the Master of Sports of Ukraine of the international class on karate of easy weight category – to 70 kilograms for the performance of the put tasks. The age of karatekas made from 25 to 33 years old, and the duration of an experience of classes of kyokushinkai karate fluctuated from twelve to twenty years.

The research of highly skilled karatekas was conducted in August, 2014 in Kiev. The definition of results was carried out during a preparatory sports-training camp to the IV weight World Cup of kyokushinkai karate in Durban of the South African republic. Thus, sports preparedness of the tested karatekas was at the highest level.

At the beginning of research karatekas were offered to execute special control tests which recorded their psychophysiological characteristics with the maximum concentration. The testing was held with the use of computer system “Diagnost-1” which is the author’s development of M. V. Makarenko and B. C. Lizogub [5; 6]. The testing was held by the following modes of diagnostics: the sensomotor – the latent period of a simple visually-motor reaction (LP SVMR, ms), the latent period of reaction of a choice of one signal from three (LP RC1-3, ms), the latent period of reaction of a choice of two signals from three (LP RC2-3, ms); the functional mobility of nervous processes when processing information in feedback (FMNP, s), the force of nervous processes when processing information in feedback (FNP, quantity of signals); the functional mobility of nervous processes when processing information in the imposed rhythm (FMNP, sign./min), the force of nervous processes when processing information in the imposed rhythm (% FNP).

Except psychophysiological characteristics, in these research indicators of a gradient of efficiency of a kick (GEB) and its components were defined (force of kick and speed of reaction in a kick on a sound irritant) at karatekas of easy weight category. By means of modern electronic device “Spuderg” and techniques of hronodynamometry [9] it is possible to exercise control of various characteristics of the method of impact techniques of martial artists. For the establishment of GEB of karatekas and its components such types of kicks of a foot to the top level were selected (jap. “jodan”) of an opponent that allowed by rules at sports competitions of kyokushinkai karate: a kick by a direct forward foot (jap. “ oi maye geri “), a kick by a direct hind foot (jap. “ gyaku maye geri “), a kick by a forward foot sideways (jap. “ oi mavashi geri “), a kick by a hind foot sideways (jap. “ gyaku mavashi geri “), a kick by a forward foot from the outside (jap. “ oi kake geri “), a kick by a hind foot from the outside (jap “ gyaku kake geri “), a circular kick by a left foot from a turn (jap. “ hidari ushiro mavashi geri “), a circular kick by a right foot from a turn (jap. “ migi ushiro mavashi geri “).

Processing of the received results was carried out by means of methods of mathematical statistics with the calculation of the determination of reliability of divergences by the t-criterion of Student and by the coefficient of correlation of Brave-Pirson.

Results of the research and their discussion. The complex of psychophysiological characteristics was investigated, after that the indicators to a gradient of efficiency of different types of a kick to the top level of an opponent were defined at the beginning of testing in the group of karatekas of high qualification of easy weight category. All received numerical indicators were processed statistically and the degree of the correlation communication was established between them.

So, the high degree of interrelation (critical value 0,45 for $p < 0,01$) is recorded between the psychophysiological characteristic of FMNP when processing information in the imposed rhythm and a mark of time of reaction in a kick on a sound irritant of all studied types of kicks to the top level of an opponent: a kick by a direct forward

foot (jap. « oi maye geri ") – $r = -0,46$, a kick by a direct hind foot (jap. " gyaku maye geri ") – $r = -0,45$, a kick by a forward foot sideways (jap. " oi mavashi geri ") – $r = -0,49$, a kick by a hind foot sideways (jap. " gyaku mavashi geri ") – $r = -0,49$, a kick by a forward foot from the outside (jap. " oi kake geri ") – $r = -0,48$, a kick by a hind leg from the outside (jap. " gyaku kake geri ") – $r = -0,48$, a circular kick by the a foot from a turn (jap. " hidari ushiro mavashi geri ") – $r = -0,46$, a circular kick by a right foot from a turn (jap. " migi ushiro mavashi geri ") – $r = -0,45$. From such absolute results of the correlation research it is possible to draw a conclusion that characteristics of reaction in a kick on a sound irritant and FMNP in the imposed rhythm beat off an essence of a competitive fight of kyokushinkai karate and allow approving the following: if a karateka has a high level of an indicator of FMNP, then and he has abilities on the realization of fast attacking actions in a competitive fight.

An average degree of interrelation (critical value 0,35 for $p < 0,05$) was recorded between the psychophysiological characteristic of FNP when processing information in the imposed rhythm and an indicator of GEB of all studied types of kicks to the top level of an opponent, namely: a kick by a direct forward foot (jap. « oi maye geri ") – $r = 0,39$, a kick by a direct hind foot (jap. " gyaku maye geri ") – $r = 0,37$, a kick by a forward foot sideways (jap. " oi mavashi geri ") – $r = 0,38$, a kick by a hind foot sideways (jap. " gyaku mavashi geri ") – $r = 0,41$, a kick by a forward foot from the outside (jap. " oi kake geri ") – $r = 0,39$, a kick by a hind foot from the outside (jap. " gyaku kake geri ") – $r = 0,36$, a circular kick by a left foot from a turn (jap. " hidari ushiro mavashi geri ") – $r = 0,39$, a circular kick by a right foot from a turn (jap. " migi ushiro mavashi geri ") – $r = 0,39$. The received results prove that the karateka who has high characteristics of FNP when processing information in the imposed rhythm, can carry out the method of impact techniques with the maximum force and acceleration in a competitive fight, that is the efficiency of its realization will be reliable.

The resistant degree of interrelation is noted between the psychophysiological characteristic of FNP when processing information in the imposed rhythm and a mark of time of reaction in a kick by a direct forward foot (jap. "oi maye geri") on a sound irritant to the top level of an opponent – $r = 0,35$. In a competitive situation without a fast performance of this kick it is impossible to achieve the objectives which can even exceed own growth of the karateka therefore the recorded indicator is reasonable.

The definition of a high degree of interrelation between the psychophysiological characteristic of FMNP when processing information in the imposed rhythm and force to a kick by a forward foot sideways (jap. " oi mavashi geri ") – $r = -0,54$ and force of a kick by a hind leg sideways (jap. gyaku mavashi geri.) – $r = -0,47$ is explained by that when carrying out this kick without appropriate power component it is possible to execute a biting action by a foot without knock-out effect. Apparently, on value of an index of correlation, a kick by a forward foot demands from the karateka a bigger manifestation of force.

The lack of correlation communications of impact indicators of karatekas with characteristics of the sensomotor (simple visually-motor reaction), FMNP and FNP in feedback can explain with the essence maintaining a competitive fight which includes a quick-change situation and an unpredictable rhythm in the movements of both opponents and similar to the imposed rhythm.

Proceeding from the conducted researches, it is certain a degree of the correlation communication between the received numerical results of psychophysiological characteristics and indicators to a gradient of the efficiency of different types of a kick of karatekas of high qualification of easy weight category to the top level of the opponent. Basing on the obtained data, coaches of kyokushinkai karate have an opportunity to pick up to the karateka an optimum technical arsenal on a responsible competitive fight. In the preparatory period, being guided on the karatekas given own psychophysiological characteristics can carry out the improvement of the method of separate impact techniques and form the technical and tactical plan for future competitive fights with opponents of a different anthropometry and a level of skill.

Conclusions:

1. It is investigated the complex of psychophysiological characteristics of karatekas of high qualification of easy weight category – the sensomotor, the functional mobility of nervous processes and the force of nervous processes when processing the information in feedback and in the imposed rhythm.

2. The indicators to a gradient of the efficiency of different types of a kick of karatekas of high qualification of easy weight category to the top level of the opponent and his components – forces of a kick and time of reaction by a kick on a sound irritant are recorded.

3. It is certain the degree of correlation communication between the received numerical results of psychophysiological characteristics and the indicators to a gradient of efficiency of different types of a kick of

Correlation matrix of interrelation of psychophysiological characteristics of karatekas of high qualification of easy weight category and indicators to a gradient of efficiency of performance by them of different types of a kick to the top level of the opponent (n=30)

Psychophysiological characteristics	Kick by a direct forward foot («oi maye geri»)			Kick by a direct hind foot («gyaku maye geri»)			Kick by a forward foot sideways («oi mavashi geri»)			Kick by a hind foot sideways («gyaku mavashi geri»)		
	kick force	reaction time in kick	GEB	kick force	reaction time in kick	GEB	kick force	reaction time in kick	GEB	kick force	reaction time in kick	GEB
LP SVMR, ms	0,07	-0,23	0,19	0,00	-0,03	0,11	0,13	0,00	0,22	0,15	-0,01	0,21
LP RC1-3, ms	-0,09	0,23	-0,23	-0,05	-0,19	0,01	0,08	-0,18	0,05	0,04	-0,18	0,03
LP RC2-3, ms	-0,09	0,05	0,06	-0,06	0,04	0,18	-0,04	-0,03	0,24	-0,07	-0,03	0,24
FMNP, s	0,00	-0,15	-0,03	-0,04	-0,25	-0,08	-0,28	-0,23	-0,28	-0,31	-0,24	-0,28
FNP, quantity of signals	-0,32	-0,19	-0,21	0,20	0,02	-0,09	0,06	-0,15	-0,07	0,04	-0,15	-0,12
FMNP, sign./min	-0,02	-0,46**	-0,21	0,09	-0,45**	0,27	-0,54**	-0,49**	-0,09	-0,47**	-0,49**	-0,05
% FNP	-0,06	0,35*	0,39*	0,15	-0,21	0,37*	0,11	-0,20	0,38*	0,15	-0,19	0,41*

Psychophysiological characteristics	Kick by a forward foot from the outside («oi kake geri»)			Kick by a hind foot from the outside («gyaku kake geri»)			Circular kick by a left foot from a turn («hidari ushiro mavashi geri»)			Circular kick by a right foot from a turn («migi ushiro mavashi geri»)		
	kick force	reaction time in kick	GEB	kick force	reaction time in kick	GEB	kick force	reaction time in kick	GEB	kick force	reaction time in kick	GEB
LP SVMR, ms	-0,06	-0,01	0,03	-0,01	-0,01	0,04	0,27	-0,03	0,21	0,25	-0,03	0,20
LP RC1-3, ms	0,09	-0,18	0,03	0,09	-0,17	0,02	-0,02	-0,19	0,01	-0,01	-0,18	0,01
LP RC2-3, ms	0,09	-0,04	0,25	0,18	-0,04	0,28	0,17	0,04	0,27	0,17	0,04	0,28
FMNP, s	-0,09	-0,23	-0,17	-0,21	-0,24	-0,23	0,24	-0,25	0,04	0,22	-0,25	0,02
FNP, quantity of signals	-0,15	-0,14	-0,18	-0,28	-0,15	-0,24	-0,26	0,02	-0,29	-0,24	0,01	-0,27
FMNP, sign./min	-0,06	-0,48**	0,05	-0,02	-0,48**	0,08	0,12	-0,46**	0,23	0,14	-0,45**	0,23
% FNP	-0,08	-0,20	0,39*	-0,22	-0,19	0,36*	0,20	-0,21	0,39*	0,21	-0,20	0,39*

Note. ** – a high degree of interrelation (critical value 0,45 for p<0,01); * – an average degree of interrelation (critical value 0,35 for p<0,05).

karatekas of high qualification of easy weight category to the top level of the opponent.

4. It is established that at karatekas of high qualification of easy weight category, the highest indicators of force of nervous processes are, when processing information in the imposed rhythm, the more reliably in a competitive fight enables the realization of impact techniques by them by a foot with the maximum force and the acceleration to the top level of the opponent is, and the higher the characteristic of the functional mobility of nervous processes is in them when processing information in the imposed rhythm, the bigger reliability of carrying out the fast attacking actions by fighters is.

Prospects of the subsequent researches. The establishment of interrelation of psychophysiological characteristics of karatekas of high qualification with the efficiency of realization of impact techniques by a hand is planned.

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Dynamics of general and specially trained of women-weightlifters at the stage of specialized basic training

Abstract. Purpose: to determine the dynamics of the general and special training of women-weightlifters different groups weight categories for annual macrocycle at the stage of specialized basic training. **Materials and Methods:** indexes long jump, running 30 meters, push-ups, jumps on how Abalakova index and wrist strength athletes different schools of Ukraine. **Results:** found dynamic indicators of general and special training of women-weightlifters different groups weight categories at the stage of basic training six specialized schools in Ukraine. **Conclusions:** the results of the study provide an opportunity to consider certain indicators in planning differentiated training programs to improve the training process athletes for women-weightlifters at the stage of specialized basic training different groups weight categories in the annual macrocycle.

Keywords: dynamometry, jump, load, stage of preparation, training, weight category, women-weightlifter.

Introduction. The analysis of scientifically methodical literature indicates the relevance of the research of training of women in weightlifting today [3; 6].

Many researches of training of women in weightlifting concerned women weightlifters of high qualification or initial preparation [1; 3; 8]. The small attention is paid to the research of women weightlifters at the stage of the specialized basic preparation.

Certain indicators of the general and special preparedness in the creation of preparation of women weightlifters of different groups of weight categories are defined and taken into consideration in the branch of weightlifting sport definitely [3; 8].

However there are no researches concerning dynamics of indicators of the general and special preparedness of women weightlifters at the stage of specialized basic preparation during an annual macrocycle at different weightlifting schools of Ukraine.

The accounting of dynamics of the level of these indicators will give the chance to rationalize the creation of training loads of women weightlifters taking into account group differences at the noted stage of long-term preparation.

Therefore there is an important scientific and practical task: definition of dynamics of indicators of the general and special preparedness of women weightlifters of three groups of weight categories of different weightlifting schools of Ukraine at the stage of specialized basic preparation.

In weightlifting the problem of modeling of indicators of preparedness of weightlifters of different sex was investigated and studied by many experts [1; 4; 12].

In particular, dynamics of indicators of physical development, physical and technical fitness of women weightlifters of 12–15 years old was defined. The interrelation size between indicators of physical development, the general and special preparedness of young women weightlifters of different groups of weight categories is specified. It is established that indicators of the general and special preparedness grow with the increase of groups of weight categories on average for 18,2 and 40,8% [3; 6].

Also model indicators of an explosive force of muscles of feet of sportsmen of high qualification of different sex were defined. Besides, S. Putsov defined the dynamics of indicators of high-speed and power preparedness of women weightlifters of high qualification depending on groups of weight categories, and also the dynamics of indicators of height of a jump of women weightlifters of high qualification was defined during the competitive and preparatory periods [8].

However the vast majority of researches concern women weightlifters of high qualification or beginners.

In our opinion, and also according to some authors, planning of training loads and creation of training of sportsmen need to be carried out taking into account specific and group features of different sections of preparedness at the stage of the specialized basic preparation [2; 7; 11].

Therefore it is necessary to define dynamics of indicators of the general and special preparedness of sportswomen during a preparation macrocycle of women weightlifters of 16-18 years old which are at the stage of the specialized basic preparation.

Communication of the research with scientific programs, plans, subjects. The work is performed within a scientific subject 2.6. "Theoretic-methodical bases of the improvement of training process and the competitive activity in the structure of long-term training of sportsmen" the Built plan of the research work in the sphere of physical culture and sport for 2011-2015. Ministry of Education, Sciences, Youth and Sport of Ukraine (number of the state registration is 0106U012613).

Thus, **the purpose of our research** is the definition of dynamics of indicators of the general and special preparedness of women weightlifters of different groups of weight categories during an annual macrocycle at the stage of the specialized basic preparation.

Material and methods of the research: theoretical analysis and generalization; pedagogical supervision; testing of indicators of the general physical fitness; testing of indicators of special physical fitness by means of techniques of Abalakov and hand dynamometry; methods of mathematical statistics [9; 10].

The research of dynamics of indicators of the general preparedness (a long jump, run of 30 m and press-up), indicators of special preparedness (a high jump by the technique of Abalakov and an index of hand force) of 54 sportswomen of three groups of weight categories of six weightlifting schools of Ukraine was conducted during a preparation macrocycle.

Results of the research and their discussion. Indicators of a long jump, run of 30 m, press-up, a high jump by the technique Abalakov and an index of hand force of 54 women weightlifters of six weightlifting schools of Ukraine were defined for the detection of features of dynamics of indicators of the general and special preparedness of women weightlifters at the stage of the specialized basic preparation (Ternopol, Kharkiv, Donetsk, Kherson, Rovno and Zaporozhye). Testing happened due to the known techniques in the beginning and at the end of an annual macrocycle of preparation [5]. Each of schools trained at the system of preparation in a macrocycle with different quantity of cycles of preparation and starts.

Analysis of dynamics of indicators of the general and special preparedness of women weightlifters of three groups of weight categories (I group of 48-58 kg; II group – 63–69 kg; III group – 75–75+ kg) of different weightlifting schools of Ukraine gives the chance to draw intermediate conclusions of our research concerning the efficiency of creation of the system of preparation of this or that weightlifting school during a preparation macrocycle at the stage of the specialized basic preparation. And also women weightlifters of 16-18 years old of different groups of weight categories gives information concerning differences of dynamics of the noted indicators. The comparative analysis of indicators of the general preparedness of women weightlifters testifies to reliable differences of indicators of sportswomen of different groups of weight categories of six weightlifting schools at the beginning of a macrocycle of preparation (tab. 1).

Table 1

Dynamics of indicators of the general preparedness of women weightlifters of different groups of weight categories (n=54)

Groups h/q	Long jump (% of growth)		Run of 30 m (s)		Press-up (times)		Long jump (% of growth)		Run of 30 m (s)		Press-up (times)	
	In the beginning of macrocycle						At the end of macrocycle					
	\bar{X}	$\pm\sigma$	\bar{X}	$\pm\sigma$	\bar{X}	$\pm\sigma$	\bar{X}	$\pm\sigma$	\bar{X}	$\pm\sigma$	\bar{X}	$\pm\sigma$
I	123,0	3,12	5,2	0,21	37,4	3,25	125,1	3,19	5,0	0,18	39,9	4,27
II	128,5	5,88	5,2	0,21	38,1	3,29	130,3	5,59	5,1	0,18	40,4	3,89
III	127,2	6,39	5,6	0,22	28,8	2,02	129,7	5,02	5,3	0,22	30,8	3,32
p1*	<0,05		>0,05		>0,05		<0,05		>0,05		>0,05	
p2**	>0,05		<0,05		<0,05		>0,05		<0,05		<0,05	
p3***	<0,05		<0,05		<0,05		<0,05		<0,05		<0,05	

Note. * – reliability of differences between I and II groups of weight categories by t-criterion of Student; ** – reliability of differences between II and III groups of weight categories by t-criterion of Student; *** – reliability of differences between I and III groups of weight categories by t-criterion of Student.

In particular, sportswomen of I group of weight categories own the lowest indicator in a long jump ($123,0 \pm 3,12\%$ of growth). The indicator of II groups of weight categories is higher for 5,5% of growth than the indicator of I group. The indicator of III group is also higher than the indicator of I group and makes $-127,2 \pm 6,39\%$ of growth. Reliable differences between the indicators of II and III groups aren't established (tab. 1).

In the indicator of run on 30 m sportswomen of III group of weight categories own the lowest indicator ($5,6 \pm 0,22$ s) that is predetermined by the greatest own body weight of representatives of this group of weight categories. Sportswomen of I and II groups of weight categories own the identical indicators which make $5,2 \pm 0,21$ s (tab. 1).

The similar tendency is observed at press-ups where also sportswomen of III groups of weight categories own the lowest indicator ($28,8 \pm 2,02$ s). The reliable differences aren't revealed between indicators of sportswomen of I and II groups of weight categories (tab. 1).

The similar tendency in differences of indicators of women weightlifters of different groups of weight categories is observed at the end of a macrocycle of preparation (tab. 1).

The indicator gain makes a long jump at women weightlifters at the stage of the specialized basic preparation during a macrocycle of preparation in I group of weight categories – 2,1% of growth of a body ($p < 0,05$), in II group of weight categories – 1,8% of growth of a body ($p < 0,05$) and in III group of weight categories – 2,5% of growth of a body ($p < 0,05$).

The gain of indicators of I group of weight categories – makes 0,2 s ($p < 0,05$), in II group of weight categories – 0,1 s ($p < 0,05$) and in III group of weight categories – 0,3 s ($p < 0,05$) in run on 30 m of women weightlifters at the stage of the specialized basic preparation during a macrocycle of preparation.

The indicators of press-up of women weightlifters grew in I group of weight categories on 2,5 times ($p < 0,05$), in II group of weight categories on 2,3 times ($p < 0,05$) and on 2,0 times – in III group of weight categories ($p < 0,05$) at the stage of the specialized basic preparation during a macrocycle of preparation.

Also we defined the dynamics of indicators of special preparedness of women weightlifters of different groups of weight categories during a preparation macrocycle.

In particular, the indicator of women weightlifters of I group of weight categories at the beginning of a macrocycle of preparation made $36,4 \pm 3,50$ sm from growth, and at the end of a macrocycle – $41,0 \pm 4,78$ sm in a jump by the test of Abalakov. The reliable gain makes 4,6 sm ($p < 0,01$). The indicators of women weightlifters of II group of weight categories made $40,6 \pm 5,82$ sm at the beginning of a macrocycle of preparation, and at the end of a macrocycle – $45,1 \pm 6,25$ sm.

The indicator of this group of weight categories is authentically higher, than at women weightlifters of I group of weight categories. The gain of II group of weight categories makes 4,5 sm ($p < 0,01$). The jump indicator of women weightlifters of III group of weight categories made $42,4 \pm 3,53$ cm, and at the end of a macrocycle – $45,8 \pm 3,47$ sm at the beginning of a preparation macrocycle. The indicator of this group of weight categories is authentically higher only than the indicator of women weightlifters of I group of weight categories is. The gain of III group of weight categories makes 3,4 sm ($p < 0,01$) (tab. 2).

Table 2

Dynamics of indicators of special preparedness of women weightlifters of different groups of weight categories (n=54)

Groups h/q	Test of Abalakov (sm)		Index of hand force (s.u.)		Test of Abalakov (sm)		Index of hand force (s.u.)	
	In the beginning of macrocycle				At the end of macrocycle			
	\bar{X}	$\pm\sigma$	\bar{X}	$\pm\sigma$	\bar{X}	$\pm\sigma$	\bar{X}	$\pm\sigma$
I	36,4	3,50	75,0	6,00	41,0	4,78	78,3	6,18
II	40,6	5,82	59,0	5,22	45,1	6,25	62,3	5,77
III	42,4	3,53	56,4	3,66	45,8	3,47	59,1	3,62
p1*	<0,05		<0,05		<0,05		<0,05	
p2**	>0,05		>0,05		>0,05		<0,05	
p3***	<0,05		<0,05		<0,05		<0,05	

Note. * – reliability of differences between I and II groups of weight categories by t-criterion of Student; ** – reliability of differences between II and III groups of weight categories by t-criterion of Student; *** – reliability of differences between I and III groups of weight categories by t-criterion of Student.

The tendency to big indicators of women weightlifters with the growth of weight categories is observed.

However the reliable indicators of the gain during a preparation macrocycle are found in all groups of weight categories of women weightlifters. Dynamics of indicators of the index of hand force of women weightlifters is established during an annual macrocycle of preparation at the stage of the specialized basic preparation.

Indicators of the index of hand force of women weightlifters of I group of weight categories made $75,0 \pm 6,00$ s.u. at the beginning of a macrocycle of preparation, and at the end of a macrocycle – $78,3 \pm 6,18$ s.u. The gain made 3,3 s.u. ($p < 0,01$). The index of hand force of women weightlifters of II group of weight categories made $59,0 \pm 5,22$ s.u. at the beginning of a macrocycle of preparation, and at the end of a macrocycle – $62,3 \pm 5,77$ s.u. The indicator of this group of weight categories is reliable below, than at women weightlifters of I groups of weight categories that is opposite to a tendency of indicators of a high jump. The gain of indicators of the index of hand force of II group of weight categories makes 3,3 s.u., as well as at women weightlifters of I groups of weight categories ($p < 0,01$). The lowest indicators of the index of hand force is defined at women weightlifters of III group of weight categories at the beginning of a preparation macrocycle – $56,4 \pm 3,66$ s.u. but at the end of a macrocycle – $59,1 \pm 3,62$ s.u. The reliable gain of the index of hand force makes 2,7 s.u. ($p < 0,01$) during a preparation macrocycle of women weightlifters of this group of weight categories behind nonparametric T-criterion of Vilkokson (tab. 2). Here the opposite tendency is observed in comparison with indicators of a high jump. The highest indicators of the index of hand force of women weightlifters of the lowest weight categories are established in comparison with sportswomen of II and III groups of weight categories.

Also we investigated the dynamics of indicators of special preparedness of women weightlifters of different groups of weight categories of six weightlifting schools of Ukraine at the stage of the specialized basic preparation during a macrocycle of preparation (tab. 3).

Table 3

Dynamics of indicators of special preparedness of women weightlifters of different weightlifting schools of Ukraine (n=54)

Testing	Weightlifting schools												Groups h/q
	Ternopol		Kharkiv		Kherson		Donetsk		Rovno		Zaporozhye		
	\bar{X}	$\pm\sigma$	\bar{X}	$\pm\sigma$	\bar{X}	$\pm\sigma$	\bar{X}	$\pm\sigma$	\bar{X}	$\pm\sigma$	\bar{X}	$\pm\sigma$	
In the beginning of macrocycle													
1- High jump (sm)	38,3	1,53	39,7	1,53	32,3	2,52	38,7	2,08	32,3	2,52	37,0	3,00	I*
2- Index of hand force (s.u.)	67,3	1,78	78,8	4,18	78,7	6,11	74,9	4,92	71,3	2,80	78,7	4,80	
1- High jump (sm)	49,7	1,53	36,3	3,21	37,0	2,00	46,0	2,00	37,0	1,00	37,3	5,86	II**
2- Index of hand force (s.u.)	60,6	2,81	63,1	2,22	53,4	6,18	62,3	1,32	56,7	2,48	57,7	6,90	
1- High jump (sm)	45,3	0,58	37,0	3,46	41,3	2,08	46,3	1,15	43,7	2,52	41,0	1,00	III***
2- Index of hand force (s.u.)	54,8	2,23	58,7	2,21	56,1	1,69	52,3	3,52	58,2	2,74	58,1	4,80	
At the end of macrocycle													
1- High jump (sm)	45,7	1,53	46,0	2,65	36,0	1,00	44,3	2,52	35,3	1,53	38,7	2,52	I*
2- Index of hand force (s.u.)	72,2	2,15	83,2	5,27	79,6	6,25	80,5	5,42	72,8	2,56	81,2	5,60	
1- High jump (sm)	55,0	1,00	43,7	2,89	40,0	1,73	51,3	1,53	40,7	0,58	40,0	4,58	II**
2- Index of hand force (s.u.)	64,2	1,73	67,2	1,98	55,1	5,48	68,1	1,63	59,2	2,64	59,9	5,85	
1- High jump (sm)	49,3	1,53	41,3	0,58	43,3	1,53	50,3	2,08	46,0	2,65	44,3	0,58	III***
2- Index of hand force (s.u.)	57,4	1,80	61,7	2,28	58,6	1,28	56,2	4,11	61,1	2,98	59,6	5,21	
1	7,4		6,3		3,7		5,6		3,0		1,7		I* gain
2	4,9		4,4		0,9		5,6		1,5		2,5		
1	5,3		7,4		3,0		5,3		3,7		2,7		II** gain
2	3,6		4,1		1,7		5,7		2,5		2,2		
1	4,0		4,3		2,0		4,0		2,3		3,3		III*** gain
2	2,6		3,0		2,5		3,9		2,9		1,5		

Note. * – I – group of easy weight categories (48, 53, 58 kg); ** – II – group of average weight categories (63, 69 kg); *** – III – group of heavy weight categories (75, 75+ kg).

In particular, the reliable highest indicators of the gain of a high jump at sportswomen of the first group of weight categories are established at Ternopol school (from $38,3\pm 1,53$ sm at the beginning of a macrocycle to $45,7\pm 1,53$ sm at the end of a preparation macrocycle), at Kharkiv school (from $39,7\pm 1,53$ sm at the beginning of a macrocycle to $46,0\pm 2,65$ sm at the end of a macrocycle) and Donetsk school (from $38,7\pm 2,02$ sm at the beginning of a macrocycle to $44,3\pm 2,52$ sm at the end of a macrocycle); the second group of weight categories in Kharkiv (from $36,3\pm 3,21$ sm at the beginning of a macrocycle to $43,7\pm 2,89$ sm at the end of a macrocycle), Ternopol (from $49,7\pm 1,53$ sm at the beginning of a macrocycle to $55,0\pm 1,00$ sm at the end of a macrocycle) and Donetsk schools (from $46,0\pm 2,00$ sm at the beginning of a macrocycle to $51,3\pm 1,53$ sm at the end of a macrocycle) and the third groups of weight categories in Kharkov (from $37,0\pm 3,46$ sm at the beginning of a macrocycle to $41,3\pm 0,58$ sm at the end of a macrocycle), Ternopol (from $45,3\pm 0,58$ sm at the beginning of a macrocycle to $49,3\pm 1,53$ sm at the end of a macrocycle) and Donetsk schools (from $46,3\pm 1,15$ sm at the beginning of a macrocycle to $50,3\pm 2,08$ sm at the end of a macrocycle) (tab. 3).

The highest gain of indicators of the index of hand force is also established authentically at sportswomen of the first group of weight categories at Donetsk school (from $74,9\pm 4,92$ s.u. at the beginning of a macrocycle to $80,5\pm 5,42$ s.u. at the end of a macrocycle), Ternopol school (from $67,3\pm 1,78$ s.u. at the beginning of a macrocycle to $72,2\pm 2,15$ s.u. at the end of a macrocycle) and Kharkov school (from $78,8\pm 4,18$ s.u. at the beginning of a macrocycle to $83,2\pm 5,27$ s.u. at the end of a macrocycle); the second group of weight categories at Donetsk school (from $62,4\pm 1,32$ s.u. at the beginning of a macrocycle to $68,1\pm 1,63$ s.u. at the end of a macrocycle), Ternopol school (from $60,6\pm 2,81$ s.u. at the beginning of a macrocycle to $64,2\pm 1,73$ s.u. at the end of a macrocycle) and Kharkov school (from $63,1\pm 2,22$ s.u. at the beginning of a macrocycle to $67,2\pm 1,98$ s.u. at the end of a macrocycle) and the third groups of weight categories at Donetsk school (from $52,3\pm 3,52$ s.u. at the beginning of a macrocycle to $56,2\pm 4,11$ s.u. at the end of a macrocycle) (tab. 3). The lowest indicators of the index of hand force at representatives of weightlifting categories predetermined by that calculation given to parameter is carried out in standart units taking into account own body weight.

Therefore, the dynamics of indicators of the general preparedness, and also special preparedness of women weightlifters of different groups of weight categories at the stage of the specialized basic preparation of six weightlifting schools of Ukraine is installed by means of the known techniques. It gives the chance to consider certain indicators when planning of the differentiated programs of preparation of women weightlifters at the stage of the specialized basic preparation of different groups of weight categories in an annual macrocycle.

Conclusions:

1. The dynamics of indicators of the general and special preparedness of 54 women weightlifters at the stage of the specialized basic preparation of different groups of weight categories is defined by means of testing. The indicators of a long jump, run on 30 m, press-up, a high jump and the index of hand force are systematized, analysed and generalized in an annual macrocycle of preparation of women weightlifters.

2. It is established that the gain of indicators of a long jump of women weightlifters makes 2,1% ($p<0,01$) in I group of weight categories, 1,8% ($p<0,01$) in II group of weight categories and 2,5% ($p<0,01$) in III group of weight categories at the stage of the specialized basic preparation during a macrocycle of preparation (tab. 1).

The gain of indicators of women weightlifters makes 0,2 s ($p<0,05$) in I group of weight categories, 0,1 s ($p<0,05$) in II group of weight categories and 0,3 s ($p<0,05$) in III group of weight categories in run on 30 m at the stage of the specialized basic preparation during a macrocycle of preparation.

The indicators of press-up of women weightlifters grew on 2,5 times ($p<0,05$) in I group of weight categories, on 2,3 times ($p<0,05$) in II group of weight categories and on 2,0 times – in III group of weight categories ($p<0,05$) at the stage of the specialized basic preparation during a macrocycle of preparation.

3. We defined the dynamics of indicators of special preparedness of women weightlifters of different groups of weight categories during a preparation macrocycle.

In particular, the indicator gain in a jump behind Abalakov of women weightlifters of I group of weight categories makes 4,6 sm. The indicators of women weightlifters of II group of weight categories have the gain 4,5 sm. The jump indicator of women weightlifters of III group of weight categories has the reliable gain 3,4 sm ($p<0,01$) (tab. 2).

The gain of indicators of the index of hand force of women weightlifters of I group of weight categories made 3,3 s.u. The gain of indicators of the index of hand force of II group of weight categories makes 3,3 s.u., as well as at women weightlifters of I group of weight categories. The lowest indicators of the index of hand force

are defined at women weightlifters of III group of weight categories and behind nonparametric T-criterion of Vilkokson – 2,7 s.u. ($p < 0,01$) (tab. 2).

4. The dynamics of indicators of special preparedness of women weightlifters of different groups of weight categories of six weightlifting schools of Ukraine is established at the stage of the specialized basic preparation during a macrocycle of preparation (tab. 3).

The subsequent researches will be directed on the definition of interrelation between indicators of the general and special preparedness and components of loading of women weightlifters of different groups of weight categories at the stage of the specialized basic preparation at different weightlifting schools of Ukraine by means of the correlation analysis.

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Forming of healthy way of life of pupils of institute of noble maidens is in Ukraine (XIX – the beginning of the XX Century)

Abstract. Purpose: to define major moments in the process of forming of healthy method of life in the woman educational meeting of Ukraine during XIX- XX centuries. **Material and Methods:** analysis and generalization of sources on this question. **Results:** it is set that not looking on the presence of wide normatively legal base regulating the healthy method of life of pupils of institutes of noble maidens, in practice due attention spared to neither the correct feed nor motive activity. **Conclusions:** research results confirm that through cruel orders in the walls of establishments, absence of the proper attention to the problem of health of students gradually popularity of institutes of noble maidens falls among young peoples.

Keywords: gymnastics, healthy lifestyle, institute of noble maidens, dances.

Introduction. In modern society the important place is taken by a problem of the formation of a healthy lifestyle at youth, their adaptation to modern realities. Usually the bases of culture of health have to take root from the early childhood by parents and tutors of educational institutions. Experts are faced by a difficult task to provide educational institutions with necessary methodical-instructive materials of this matter. Besides the work on educational and methodical grants for teachers demands from experts not only an appropriate preparation in the sphere of physical training, but also certain knowledge on history of the formation and the development of system of physical culture in our country. Only the accounting of the experience of predecessors will allow to improve the existing system and not to make a mistake of predecessors. For this reason the author considers it expedient to address to history of women's educational institutions, namely institutions for young ladies which worked in the territory of Ukraine throughout the XIX century – at the beginning of the XX century. After all, the development of female education in Ukraine in the XIX century unlike the present had certain features which concerned not only the list the studied disciplines, but also questions of a rational day regimen and healthy life of children.

The historiographic analysis of a problem testifies that the complex research of a question of the formation of a healthy lifestyle in specialized women's educational institutions – institutions for young ladies wasn't conducted in Ukraine, abroad. Native literature contains information on features of the organization of training and educational work in institutes. The considerable contribution to the scientific studying of this subject was made by such researchers as O. Kalenik [4], V. Dobrovolska[2], O. Anishchenko [1], T. Cukhenko [6] and others. However there were problems of studying of standardly legal base out of sight of scientists concerning a healthy lifestyle at institutes of the XIX century – of the first part of the XX century.

Communication of the research with scientific programs, plans, subjects. The work performed within a subject of the RW of the chair of social-democratic disciplines "The paradigm of a healthy lifestyle in a discourse of physical training and sport" (the number of the state registration is 0111U001716).

The objective of the research: the illumination of historical conditions of the formation of a healthy lifestyle and the formation of the concept of physical training in women's secondary educational institutions of Ukraine throughout the XIX century – at the beginning of the XX century.

Material and methods of the research: in the work it is used problem- chronological, analytical, comparative-historical and descriptive methods of the research.

Results of the research and their discussion. Educational institutions for girls function from the second half of the XV III century in the Russian empire, after all ladies got only education at home earlier. So, the first Imperial educational society of noble girls known as Pitch institute for everybody begins to work on May 5 in 1764 in St. Petersburg. Subsequently the similar establishments open throughout the XIX century in Kharkov (1811), Poltava (1818), Odessa (1928), Kerch (1835) and Kiev (1838). These educational institutions trained educated wives for noblemen and beautiful mothers who are capable to bring up their children correctly. In general

the whole educational process was reduced to the solution of three main tasks: physical improvement, moral education and intellectual development [2, p. 116]. Physical improvement was limited to teaching subjects of a labor cycle: girls were acquainted with rules of housekeeping, technology of cooking and tailoring and so forth. Moral education is directed on strengthening of love to an order, work at girls; they had to understand the place in of that time society and a family. Intellectual development was represented by studying of different sciences and arts (music, drawing, dances). However, unlike documents which regulated the activity of institutes, in real life educational and educational process ladies left much to be desired. Not without a reason, pupils of these educational institutions constantly note the low education level which they received also to severe a discipline which dominated in institute in the memoirs. Girls tore off from a family, compelled to survive in a limited environment and to obey the orders of seniors implicitly.

In institute girls of the age from 5–6 years old were accepted for the term of a study of 12 years, thus parents had no right to take away children to the termination of an institution [5, p. 743].

The process of a study was divided into four stages, depending on the age of schoolgirls:

1. From 5–6 years old till 9 years old.
2. From 9 till 12 years age.
3. From 12–15 years old.
4. From 15 till 18 years old.

Since the beginning of the XIX century a training course at institutes is reduced till 6 and also is divided into three stages with biennial study. At each stage girls studied a certain list of disciplines. So, at the younger age the emphasis was placed on languages, arithmetic, drawing, music and dances. From nine years old geography, history and economy were added. The third stage provided the development of bases of a source study, architecture and heraldry. The senior schoolgirls repeated the whole learned material, and also improved the manners, acquired rules of etiquette [5, p. 744]. Girls were engaged in needlework and studied housekeeping bases throughout the whole term of a study.

Such disciplines as music and dances were recommended to be engaged together for all pupils of different age. Girls began to play music for four hours for a week from 12 years old seriously, took dancing classes two hours for a week since childhood [7, p.136-139]. It should be noticed also that the salary of a dance teacher was one of the highest – 400 rubles for a year, only music-masters received most of all – 500 rubles. On average the teaching structure of institute received 300 rubles [7, p. 152-153]. This fact can be explained to that, in the absence of a separate subject on physical training, the considerable attention was given to dances in the educational process which were perceived not only as pleasant entertainment on balls, but also a way for the achievement of a beautiful bearing at girls. French technique of teaching dances was used exclusively during this period in Institution for young ladies that included at itself polonaise, waltz, polka, mazurka, quadrille, and cotillion – easy and mobile dances.

In addition, from 1852 at the initiative of the chairman of Educational committee, prince P. Oldenburzky girls began to study a new subject – kalistiniya – special gymnastics which is developed by the Swedish gymnast Gustav Pauli for girls. It was recommended to give classes by kalistiniya under the supervision of a doctor, to avoid difficult exercises and it is obligatory to consider a physical condition of each pupil [7, p. 303]. However, as graduates of the institute remember, a due attention wasn't paid to physical training only one-two hours for a week to dances therefore it isn't surprising at all that girls grew sickly and painful [3, p. 234].

Thus it should be noticed that doing gymnastics and dances caused quick interest from schoolgirls. Dances in general were perceived as the entertainment and the real holiday. On Sunday girls were allowed to arrange internal small balls and to dress elegant tapes and velvet ribbons [3, p. 259]. The real balls were arranged for ladies three times for a year – at birthday of an empress, for an institute holiday and on January 1. On these actions girls danced, regaled on candies, fruit and lemonade. The New Year's ball was always fancy-dress for which ladies prepared some months [3, p. 36-37].

In the charter of institute also the daily routine of pupils was defined. The day of schoolgirls began at 6 o'clock in the morning at all institutes and was distributed with a difference in an hour - one and a half, as follows: girls had to say a prayer, have breakfast and prepare for classes till nine o'clock, namely to the beginning of lessons. The first part of the educational process came to the end at 12 o'clock, throughout this time 2 one and a half hour lessons were provided. Lessons were recommenced about 15 o'clock after a lunch and the one-hour break which is taken away for rest and lasted till the 18th o'clock. After an hour rest, girls prepared homework

and were engaged in needlework for 2 next hours. During self-preparation, schoolgirls were forbidden to talk, move, look back, their behavior was limited to sitting on their place, looking at one point and repetition about itself the studied material [3, p.240]. The day came to the end with a dinner and a prayer. In general the religion took an important place in the educational process of girls. Except a double daily prayer, on Sunday and for big holidays, girls together with tutors without a fail visited a church service during which it was forbidden to talk among themselves to them, and to listen to a priest with fear and respect [5, p. 750].

The regulations of Institutes provided an assignment of separate time for rest. The existence of a recreational room or a certain big room for rest was an indispensable condition of functioning of each institution. Instructions recommended to teachers to walk pupils, to be engaged in physical activity. Before tutors the task was put to attract to entertainments of all schoolgirls [2, p. 753]. However rest-hours were limited, at best, to walks in an institute garden under a rigid control of a leader teacher. The girls who were frightened of a punishment were compelled to limit the walks by slow walking and to avoid outdoor and noisy games [3, p. 238]. In general, the everyday life of ladies was limited to walls of Institute, only sometimes they visited city churches or the senior girls had an opportunity to bathe in the river in the morning close to fifth o'clock [3, p.251].

Five hours for day were taken away for a study (three hours – from 9 till 12 o'clock – to a lunch and two – from 14 till 16 o'clock – after it). On Saturday girls repeated the learned material and read fiction French or German languages. Sunday was considered as a day off [7, p. 142-151]. In 1797 at the initiative of the empress Maria Fiodorovna a number of hours, taken away for a study, increased to eight (from 8 till 12 o'clock before a lunch, and from 14 till 16 o'clock – after it). After-dinner hours on Wednesday and Saturday, and also Sunday were allocated for rest.

Three times per day schoolgirls visited the general dining room. They were allowed using only simple and healthy food. Interestingly that separate government resolutions regulated the daily menu of pupils of institutions for young ladies. They always were given bread and butter, cheese or sausage, and also milk porridges (made of fine-ground barley, buckwheat, semolina, millet) for breakfast; lunch included some soup, a garnish with meat and a dessert (cheese cakes, brushwood, pancakes, with jam, sweet pies) [7, p. 316]. During the entertainment tutors had to teach pupils to table etiquette and watch a correct posture. Much attention was paid to hygiene (instant of hands, rinsing of a mouth) both before food, and after it [5, p. 752]. However, as often it happens, realities of life differed from official documents and orders. By the memoirs of the pupil of Kiev institution for young ladies of M. Voropanova, breakfasts and lunches were tasteless and low-quality. So, some soup was served cold and muddy, meat with fat, and desserts are sticky also toffees, flies, either their porch or a quote were often found in a stuffing. Girls drank cold tea, divorced with sugar syrup from a quarter of a roll and a bread slice. Thus schoolgirls always received an accurate portion of food, and quite often remained hungry [3, p. 245].

The day for pupils of different age came to the end in separate time. 9 hours were allocated to the youngest children for a dream; to the second age group – 8 hours, to the third – 7 hours 30 minutes, the oldest one slept – 6 and a half hours. Schoolgirls had a rest in general big rooms which had a fireplace and an extract for the best airing of a room. Doctors which positions are provided in the staff list watched over health of children [5, p. 754-755].

A rigid regulation of life of schoolgirls, class character of institutes, discrepancy of quality of education, realities of time when the education priority was stored over a study, the reduction of number of pupils and the popularity of this educational institution was entailed at the beginning of the XX century. The increasing advantage over institutions for young ladies is gained by gymnasiums which weren't a cell of conservatism and provided the education necessary for the work in an industry and a social production. With coming to the power of Bolsheviks, the need for institutes disappeared as they didn't answer the existing educational system.

Conclusions. Therefore, institutions for young ladies became the first secular female educational institutions of the country. Training of girls from prosperous merchant and noble families to public life became the purpose of data of educational institutions, allocating them a role of beautiful wives and mothers. The diploma of institute also guaranteed to pupils of employment in women's educational institutions and prosperous families to a position of a teacher or a governess. The existing charter of institutes completely regulated life of schoolgirls from a daily routine to the menu in the dining room. Rather tough rules of a conduct became complicated even more by the existing stereotypes in these educational institutions. The main rule of education of an institution – is submission to the senior, fear of a punishment. During a day girls learned languages diligently. The God's

Law, fundamentals of mathematics, social sciences, but thus the attention to a physical condition of pupils was almost not paid. A continuous starvation, an inactive way of life turned schoolgirls on sickly faces and this with the fact that teaching dances and gymnastics was provided in the schedule. However two-hour week lessons couldn't replace with dances necessary for the growing-up organism of walk and outdoor games in the fresh air. Therefore it isn't surprising that modern and less conservative gymnasiums get of great popularity at the beginning of the XX century whereas a number of pupils of institutions for young ladies were more and more reduced every year.

Prospects of the subsequent researches. The subsequent researches should be directed on studying of features of the formation of a healthy lifestyle in women's educational institutions of Ukraine in the post-revolutionary period.

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Innovation technology in the initial training of children by the example of sport games

Abstract. Purpose: to determine the characteristics of innovative technologies and the current state of organizational work with children at the initial stage of training in sports. **Material and Methods:** to understand the application of innovative technologies used coaches poll and summarized expert assessment specialists in the field of sports. **Results:** the current state of the question concerning the possibility of the initial training of children in early specialization in sports for example basketball, volleyball and tennis. Clarified the importance and necessity of innovative activities for children at the initial stage of training in sports. **Conclusions:** the identified innovative approaches for constructing the process of initial training in tennis, which are not observed in other kinds of sports.

Keywords: sport games, mini-basketball, mini-volleyball, mini-tennis, training, innovation technology.

Introduction. The progress of achievements of a sportsman-professional in sports games at the stage of the maximum realization depends on many factors: technical and tactical preparedness, anthropometrical data, physical and psychological qualities, experience of performances at competitions of a high level, partners, and the methodical-organizational level of sports training of children at the stage of initial preparation is considered not less important [1; 5; 12].

In sports games technical-tactical preparation has the most difficult structure in comparison with other sports. Differences of the game activity in defense, in attack; ensuring interaction of these components of the game activity depending on the course of a competitive fight; ensuring interaction of a significant amount of players but other needs ensuring of a professional approach to problems of training of young sportsmen and the subsequent realization of the acquired technical policy strokes in the competitive activity [8; 14].

Modern trends of the development of sports games raise questions not only opportunities of the improvement of the educational-training and the competitive processes for experts, but also a moderate and better approach to questions of the qualified preparation of a reserve at the expense of the increase in the initial stage of preparation and training of children in the conditions of early specialization (the generally developing exercises with elements of sports games) [3; 10]. After all thanks to sports the harmonious development of physical qualities of children is reached, especially coordination abilities, the fund of motive skills extends, the reserve of functional systems of an organism considerably increases, the activation of the development and strengthening of the musculoskeletal device takes place, the functioning of the main systems and internals improves [2; 4; 7].

In this regard the necessity of application of the latest scientific development and programs for the educational-training process of children grows, especially at the stage of initial preparation without which it is impossible to make the worthy competition to the leading countries of the world in different aspects of training of players [5; 11].

Communication of the research with scientific programs, plans, subjects. The research is a part of the research work which is carried out according to the built plan of the RW in the sphere of physical culture and sport on a subject 1.2. "Modern professional sport and ways of its development in Ukraine" according to the plan of the research work of the chair of sports games of National university of physical training and sport of Ukraine.

The objective of the research: to define features of innovative technologies and a current state of the organizational work with children at the initial stage of preparation in sports games.

Material and methods of the research. In the work the following methods of researches are applied:

1. Theoretical analysis and synthesis of data of scientifically methodical literature and Internet (information from the official sites of federations).
2. Poll.

3. Expert assessment of experts in the field of sports games.

4. Pedagogical supervision.

Results of the research and their discussion. Sports games are complicatedly coordination sports therefore demand an application of such techniques and means of study which would be adapted for the age, the level of physical development and physical fitness of children. Innovative technologies are sets of methods and means which support stages of the realization of innovations: introduction, training, consulting, and transfer. Usually it is necessary several years before a child learns to own adequately knowledge and skills for a game, because of what young sportsmen often lose interest in classes at the stage of initial preparation.

The analysis of the educational-methodical literature and studying of a practical experience of leading experts and coaches in the field of sports games from a subject of researches gave the chance to understand that the discrepancy to modern requirements of training programs of preparation in CYSS (legal document) is one of the problems of the first stage of selection in sports. The set of children in groups of initial preparation occurs from 8–9 years old in basketball, 8–9 years old in volleyball, only in tennis of 5–6 years old. At that time when a fight for coordinate, physically developed, according to the age of children begins in other sports much earlier (swimming of 4–5 years old, gymnastics from 3 years old). The widespread modern negligence of parents to the harmonious physical development of a child and a tribute to fashionable tendencies of the society (dances, computer literacy and learning of foreign languages) take away a great share of exceptional children much earlier of the beginning of an advertizing company of a set in sports games. Besides, the age of 6–7 years old – is the sensitive and favorable period for the development of flexibility, dexterity and coordination of movements. Coordination of movements is a fundamental principle, the base of any physical activity, especially in sports games. Each technical element in sports is under construction tissues, of motive elements familiar to a person. Therefore an ability to carry out quickly and precisely new movements in the majority depends on what stock of these coordination communications a person already has. Respectively there is a task of the creation will reserve different physical actions on the earliest age.

Experts of the theory of sport saved up a significant amount of scientific data which allow carrying out sports games training of children taking into account features of the development of the growing organism. These data cover not only an organism in general, but also the development of its separate systems which, anyway, feel on themselves influence of physical activities [6].

A lot of foreign scientists from the leading countries in sports games, such as H. M. Buseta (Spain), A. Avakumovich (Serbia), M. Mondoni (Italy), M. Spencer (England) [9; 10], M. Tennat, M. Crespo consider that the age of 6–7 years old is successful to start classes. It is an ideal way of the involvement of children to basketball, volleyball, tennis [9; 12; 13].

At the age of 5–7 years old, playing the adapted equipment it is necessary to develop and train touch feelings and motive abilities of children. Motive abilities of children will be better to develop from a significant amount of the offered gestures and movements. It is necessary to avoid an analytical study to bases of sports games at the age of 6–7 years old in different ways, offering the generally-developing actions and motive exercises in a game form.

It is important to continue to pass training and development of basic movement skills that they had opportunity gradually to acquisition specific to a sport of movement skills (especially coordination of the general mobility and the development of functions of a body) for young sportsmen of 8–9 years old. Children have to play, carrying out specific exercises, and a coach takes rules of mini-game (mini-basketball, mini-tennis, mini-volleyball) for a starting point. But before analyzing rules it is important to achieve the understanding of the following components from children:

- movements what they carry out in the space and time;
- feeling of the space limited for a game;
- actions for an attack;
- actions for a defense;
- rules which have to carry out.

Only when children are ready for it, rules of the game which will become a basis of the chosen sports game later can be presented to them.

Historical information testifies to an essential time lag and the organization of training of children in sports games. For example, mini-basketball gained the official international recognition in 1967 at the initiative of

leaders of the world basketball of Spaniard Anselmo Lopez, Englishman William Jones and Frenchman Robert Byusnel. In a year in FIBA the committee on mini-basketball which in 1991 received the status of Mini-basketball of FIBA was created and began to hold regular international festivals under the name "Jamboree". In "Jamboree" there was no those who loses, after all the main idea of the establishment to mini- basketball is proclaimed by FIBA is following: "Game mini-basketball is a satisfaction and an entertainment, but not competition!" In 1973 the federation of basketball of the USSR founded the committee on mini-basketball. The organization of the management of the mini-basketball movement in the country became the beginning of carrying out official actions for young basketball players. The first All-Union festival of mini-basketball was in Leningrad.

Features mini-basketball include adapted one for the school age: a platform size, game time, balls, height of designs change according to different age groups. There is a study of a game in basketball, but not of a set of techniques which in the future will make study to a game. The simplified rules allow acquire easily them and a long time to maintain an interest of a game, according to the age, and the prohibition of application of command tactical schemes promotes the development of tactical thinking, individual opportunities of a player, orientation on a platform.

The federation of basketball of Ukraine holds a basketball festival of mini-basketball for children of the younger group age of 9-10 years old and the senior younger group age of 11 years old once a year in summer in sports fields of Ukraine. Groups are formed according to requirements of the International federation of basketball associations (FIBA) and taking into account the submitted applications. The purpose – is to collect all leading mini-basketball collectives of the country and to define the perspective one by the following results of a season at the end of every year. Competitions are considered as the first selection in a national team of Ukraine, thereby giving an effective help to future coaches of the cadet national teams. Unfortunately, either festivals, or competitions aren't carried out for children of younger than 9 years old.

In Ukraine affairs with mini-volleyball take place also unseemly rank. Mini-volleyball – is a game for children till 14 years old. It is included into the school program of many countries. For the first time it appeared in GDR in 1961. In the USSR rules were officially approved only in 1972. There are two levels of a game: mini-3 and mini-4. There are 3–4 players and 2 reserves in a team. A team can consist in boys and girls so that the ratio was identical. According explanations of experts in the field of volleyball, a difficult material situation and a shortage of the qualified pedagogical specialists don't allow to create the condition for full training of children at the initial stage, reducing this stage and by that going to a section with modern requirements which are dictated by foreign experts of a favorite game of millions of people in our country.

According to a subject of the research it isn't found information concerning the application of well-known innovative technologies which are important for introducing in the process of training of children at the initial stage in mini- volleyball, but opposite tendencies which lead to the reduction of number of competitions, CYSS and professional clubs are found out (because of a shortage of the prepared reserve).

Mini-tennis – is a study of tennis with the use of implements and equipment, adaptive to the age, the level of preparedness and physical capacities of those who is engaged is one of the essentially new approaches in a technique of study of tennis. For today the International federation of tennis developed the program of training of young tennis players divided into three levels: red, orange and green which received the name "Play and Stay" – (Play and remain in a game forever) [9].

The program "Play and Stay" of the International federation of tennis is directed on the optimization of the training process for children till 10 years old. It provides a variation of the sizes of court and rackets, heights of a grid, use of different balls (behind a compression) and changes in rules of a game, during competitions. In our country the program of the development under the name "mini-tennis" acts as an analog of this program.

The foundations for the creation of the mini-tennis program were laid at the time of the Soviet Union, in connection with the growth of popularity of tennis, different authors, in particular, techniques of the creation of classes were described by P. M. Maydansky [8], I. Shokin which provided the mass character and the facilitated study by means of adaptive implements. They received the name "small tennis", and by the analogy with a game in mini-football, mini-basketball and later became to be called as mini-tennis. From small tennis began, and further and propagandized its use among youth the famous Soviet tennis players – N. N. Ozerov, S. P. Belits-Geyman, G. A. Kondratyeva and others. The Soviet experts were engaged in the development of a technique of study and rules of small tennis, standardization of implements. However then, despite a big experimental and educational work, mini-tennis didn't gain the serious development.

For today the International Federation of tennis actively propagandizes the application of the program of study of mini-tennis “Play and Stay” worldwide, since 2012 for children of 10 years old and younger. The main goal of the program is tennis promoting as a sport among children of preschool and younger school age thanks to the essentially new approach to a study technique to a game through mini-tennis, and also the introduction of mini-tennis in educational institutions and sports schools.

The program of mini-tennis allows applying a game approach in study from the first training classes – children learn to keep a ball in a game, and different game situations which arise thus, help them to understand its sense quickly enough. Such approach excludes need of difficult, often inaccessible for children’s perception of explanations, doesn’t demand a special storing. In game situations it is easier to seize various techniques and tactics, to understand rules of a game, to learn to keep a score independently.

As a result of classes of mini-tennis all necessary basic skills and knowledge fix gradually at children which in the subsequent transition to standard forms of trainings will allow to improve sports skill and to reach good results or to continue classes at the amateur level depending on goals and tasks.

One more important factor is that by use of courts, smaller by the size, easy balls and rackets, harmful loadings and early traumatism at children are excluded.

The program of mini-tennis includes:

- multi-level system of a study of tennis;
- study to a game in tennis, but not to a set of technique;
- ease of assimilation of game skills and rules that promotes a long maintenance of interest in classes;
- courts and implements are smaller by the size, which answers the age opportunities of children;
- use of different by the speed and height of a rebound of balls that allows to create the correct technique at the initial stage of preparation;
- special system of competitions directed on mastering skills of a game and development of tactical thinking;
- possibility of use of the program at study of adults.

The analysis and the generalization of scientifically methodical literature specifies that technical and tactical training of players in sports gains the increasing value at the stage of initial preparation where there is a bookmark and a formation of the base for the achievement of high sports results in the future. Tendencies to early sports specialization of sportsmen who can be solved due to the adaptation to the age features of players of the equipment, rules of a game, and rules of competitions in sports are observed.

Conclusions:

1. On the basis of the analysis of literary data we can note that we found innovative approaches of the creation of the process of initial preparation in tennis which aren’t observed in other types of sports games, and current trends of the development of sports games need revision of the organizational structure of preparation of the initial stage in the conditions of early specialization in basketball and volleyball.

2. Today in Ukraine the acquired traditions to mini-basketball are lost relatively and appropriate conditions for the development and the introduction of mini-basketball at the initial stage of preparation aren’t created for children which is negatively displayed on result of skill in the future at the stage of the maximum realization of opportunities of skilled sportsmen.

3. The difficult material situation in Ukraine and the deficiency of the qualified pedagogical specialists slows down the distribution of mini-volleyball, as to means of the effective organization of an initial study.

4. The use of mini-tennis as an innovative technology consists in the following factors: simplicity of a study, financial reach, reduction of time of a study, expansion of a social base of players (inclusion in a game of children from needy families), attraction of a large number of players which will promote an effective selection for the subsequent classes by tennis.

Prospects of the subsequent search of the use of innovative technologies in the form of mini-sports games at the stage of initial study will consist in the development of practical recommendations for introduction of these types of sports in programs of a study in CYSS for training of high-class sportsmen.

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Condition attendance of physical culture and other subjects of students of Kharkiv

Abstract. Purpose: to define reasons of admissions of employments on the physical culture of children and teenagers of general schools Kharkiv. **Material and Methods:** the analysis of school magazines of visit of lessons and medical maps is conducted 735 students (6–17 years) in 16 Kharkiv general schools, including. 462 boys, 273 girls; analysis of health and sporting sections in these general schools and their visited from the incurrence of students. **Results:** the features of visited of employments on physical culture and other general theoretic articles of students of junior, middle and senior classes are Set. The amount of students is determined visitant different sporting sections in extracurricular time. **Conclusions:** the visited of students is certain basic, preparatory and special medical groups of employments on physical culture and other general theoretic objects.

Keywords: medical groups, employments on physical culture, sporting sections, schoolboys.

Introduction. Social-economic and political changes, modern conditions of activity (an acceleration of a rhythm of life, a point of ecology, a reduction of physical activity), impose considerable requirements to health of the population, including children and teenagers, and cause the need for physical training and formation of the systemacity of activity [1; 6].

The models of a healthy person are presented; progressive approaches of improving technologies of a study are formed in modern scientific researches on physical training in combination with medico-preventive disciplines on the basis of the analysis of the found negative tendencies in a change of a state of health of children and teenagers [8].

According to T. Yu. Krutsevich, the social system of physical training provides the functioning of pedagogical system, but its efficiency depends on rational and capable planning of the first one [4].

Physical training in the teaching-educational sphere as a component of the general education system lays the foundation of providing and development of physical and moral health of an integrated approach before the formation of intellectual and physical qualities of a person, physical and psychological fitness, active life, professional activity on the principles of an individual approach, priority of an improving orientation, a wide use of various receptions and forms of physical improvement [3; 7].

Many scientists who characterize a dynamic state by a reserve of functions of bodies and systems researched physical health of children of the school age [2; 5].

In this regard we analyzed a condition of visit of classes in physical culture and a choice of classes by school students in sports sections which are an actual problem of health of children and teenagers.

Communication of the research with scientific programs, plans, subjects. The research is conducted according to the Thematic plan of the research work in the sphere of physical culture and sport for 2011-2015 of the Ministry of Ukraine for family, youth and sport, by the subject 3.8 "Theoretic-methodological bases of creation of the system of a mass control, an assessment of a level of the development and physical fitness of different groups of the population" (No. of state registration is 0111U000192).

The objective of the research consists in the definition of the reasons of admissions of classes in physical culture by children and teenagers of comprehensive schools of Kharkov.

The tasks of the research. To carry out the analysis of visit of lessons on physical culture concerning other subjects within two academic years; to define a state of health of children and teenagers within two academic years; to find improving and sports sections which are in GES, and desires to visit children and teenagers.

Material and methods of the research: analysis of scientifically methodical literature; poll; analysis of class registers of visit of classes and medical records (735 pupils (6–17 years old) at 16 Kharkov comprehensive schools, including 462 boys, 273 girls; Kettle indexes 2 and Robinson indexes; analysis of functioning of improving and sports sections at these schools and their visits by children and teenagers from total number of pupils;

methods of mathematical statistics.

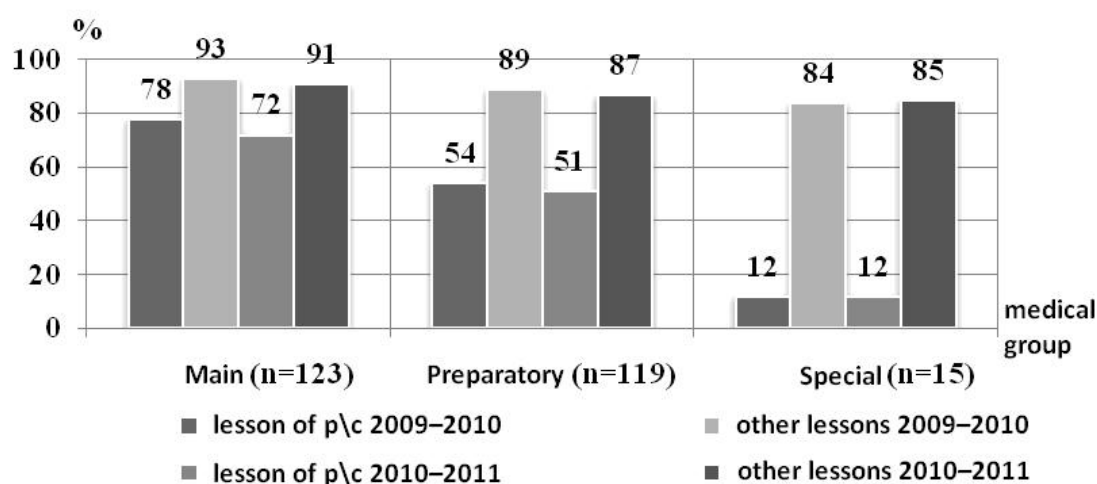
Results of the research and their discussion. The problem of physical training in Ukraine is relevant now because of the general decrease in health of children and teenagers. Therefore the system effectiveness of physical training depends on many components of the social system in which the process of physical training is carried out obligatory.

Physical capacities of children and teenagers change and correct in the necessary direction during a study at school in the course of physical training. Different methods, forms of classes which give the chance to support and change physical fitness, physical development of children and teenagers are used at lessons on physical culture [4].

According to experts [3; 7], physical culture of children and teenagers is considered as the process of mastering knowledge, skills educational and study for the following use in the course of self-improvement and, as result – about the level of physical health which they have to store or increase thanks to their desire, knowledge, a healthy lifestyle and physical activity.

The analysis of an attendance of classes in physical culture (variable modules) concerning other subjects and their influence on a state of health of children and teenagers within two academic years (2009–2010 and 2010–2011 academic years) is carried out with the use of the provision about intra school control (ISC) at schools which is developed according to the Law “About education”, “The typical provision about general education educational institution”, the charter of a school.

In the first 2009–10 a.y. it is defined that 78% of pupils (1–4 classes) of the main medical group visit lessons on physical culture (p/c), 93% of pupils are present on other subjects. Pupils of the preparatory group visit general-theoretical subjects (89%), physical culture – 54% also best of all. A similar situation is at pupils of the special medical group, only 12% attend class on p/c, 84% – other subjects (pic. 1, tab. 1).



Pic. 1. Visiting of lessons by pupils of the elementary grades (1–4 classes) of the main, preparatory, special medical groups within two academic years (n=257)

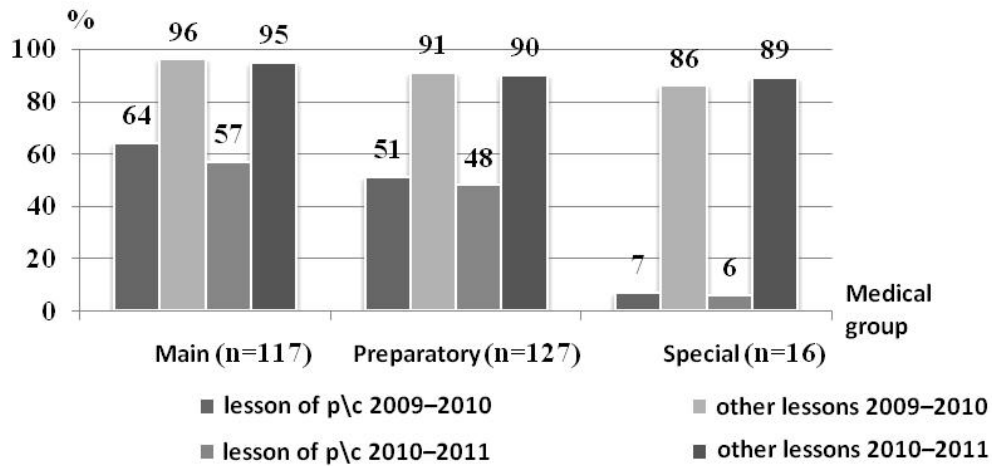
In the next academic year (2010–11) 72% of pupils of the main medical group visit lessons of p/c, 51% of pupils of the preparatory group and 12% of pupils the special group, other subjects are visited respectively 91%, 87%, 85% of a total number of children (pic. 1).

The reasons of the lack of 22% and 28% of pupils of the main group at lessons of p/c at the elementary school are the following: a good reason – an illness with an absence in GES (6% and 7%), a release from classes by the certificate about the rehabilitation period after an illness or from parents about an unsatisfactory state (12% and 14%), without a good reason – there isn't an uniform, isn't present on classes (4% and 7%) (pic. 1).

46% and 49% of pupils of the preparatory group which are absent at lessons of p/c because of good reasons: 5% and 8% (an absence on classes – an illness), 40% and 39% (a presence on classes with the certificate of a discharge from classes, the reference from relatives of an unsatisfactory condition of a pupil); without a

valid excuse – 1% and 2% (isn't present on classes, there is no uniform). 88% of pupils of special group which are absent at lessons of p/c from which – a good reason – 9% (absence on classes – an illness) and 79% – presence on classes with the reference about discharged of classes (pic. 1).

64% of pupils of 5-9 classes of the main group attended classes on p/c in the first year of the research and 57% in the next year, while other subjects of 96% and 95% respectively. In the preparatory group indicators made 51% and 48% and 91% and 90%, in the special group 7% and 6% and 86 and 89% (pic. 2).



Pic. 2. Visiting of lessons by pupils of the middle classes (5-9 classes) of the main, preparatory, special medical groups within two academic years (n=260)

Table 1

Visiting of lessons of physical culture and other subjects at comprehensive schools of Kharkov

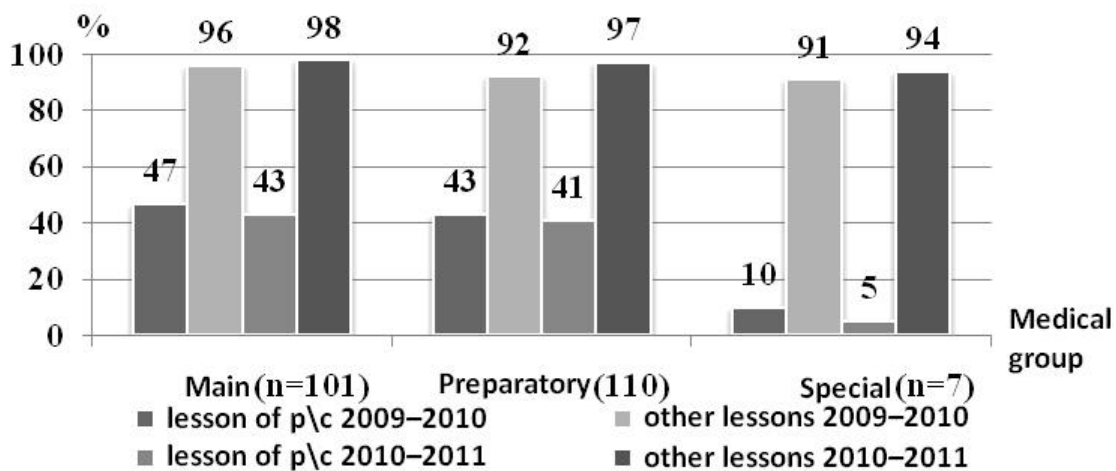
Class	Medical group	Quantity of pupils	2009-10 a.y.				2010-11 a.y.			
			Lessons p/c		Others subjects		Lessons p/c		Others subjects	
			V	M	V	M	V	M	V	M
1-4 (n=257)	Main	123	78% (95)	22% (28)	93% (114)	7% (9)	72% (88)	28% (35)	91% (114)	7% (9)
	Preparatory	119	54% (64)	46% (57)	89% (106)	11% (13)	51% (60)	49% (59)	87% (103)	13% (16)
	Special	15	12% (2)	88% (13)	84% (12)	16% (3)	12% (2)	88% (13)	85% (12)	15% (3)
5-9 (n=260)	Main	117	64% (74)	36% (43)	96% (112)	4% (5)	57% (66)	43% (51)	95% (111)	5% (6)
	Preparatory	127	51% (65)	49% (62)	93% (118)	7% (9)	48% (61)	52% (66)	90% (114)	10% (13)
	Special	16	7% (1)	93% (15)	86% (14)	14% (2)	6% (1)	94% (15)	89% (14)	11% (2)
10-11 (n=218)	Main	101	47% (46)	53% (55)	96% (97)	4% (4)	43% (43)	57% (58)	98% (98)	2% (3)
	Preparatory	110	43% (47)	57% (63)	92% (101)	8% (9)	41% (45)	59% (65)	97% (106)	3% (4)
	Special	7	10% (1)	90% (6)	91% (6)	9% (9)	5% (1)	95% (6)	94% (6)	6% (1)

Note. V-visited lessons; M-missed lessons.

The absence of pupils of the main group at lessons of p/c at high school (36%; 43%) are defined as because of a good reason of 4% and 5% (an absence on classes – an illness) and 29% and 36% (a presence on classes with the certificate of discharge from classes, the reference from parents of an unsatisfactory condition of a pupil); without a good reason – 3% and 2% (there is no uniform, isn't present on classes, there are no motivations, fatigue after other classes, laziness) (pic. 2).

The reasons of absence of pupils of the preparatory group at lessons on p/c during the first (49%) and the second (52%) academic years made: because of a good reason (7%; 10%) – an absence in GES by an illness, 37% and 36% – a presence on classes (with the certificate of discharge from classes, the reference from parents of an unsatisfactory condition of a pupil), without a good reason – 5%; 6% – there aren't present uniforms, fatigue after other classes. Absence of pupils of the special medical group at lessons of p/c is recognized as: because of a good reason – 11%, 14% – an illness and 82%, 80% – with the certificate of discharge from classes.

The attendance of lessons of p/c decreases from 47% to 43% (the main group); from 43% to 41% (preparatory); from 10% to 5% (special) concerning other lessons at pupils of the senior classes within two academic years (pic. 3).



Pic. 3. Visiting of lessons by pupils of the senior classes (10–11 classes) of the main, preparatory, special medical groups within two academic years (n=218)

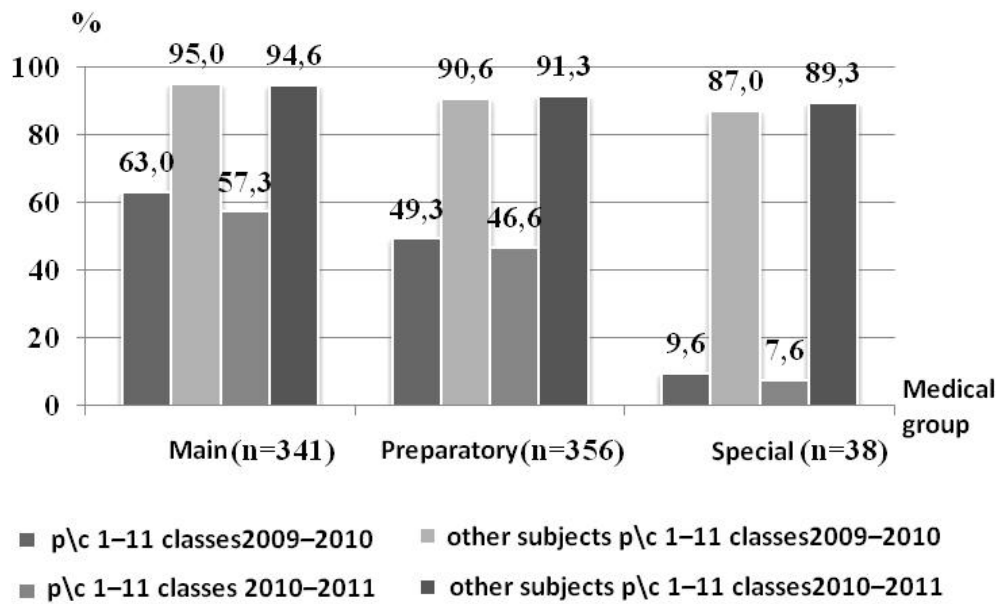
The reasons of absence of pupils of high school didn't change at all, that is an admission of classes happens at the main group because of a good reason with the absence on classes from 2 to 4% (illness) and from 45% to 52% with the presence without a participation on classes of p/c (with the certificate of discharge from classes, the reference from parents of an unsatisfactory state of health of a pupil), and also from 3% to 4% without a good reason with the presence (there are no uniforms, fatigue after other classes, laziness).

The analysis of visiting of lessons of physical culture by pupils from the first till the eleventh classes within two academic years showed that after the first academic year 63,0% of pupils (1–11 classes) of the main group visit lessons of p/c, 49,3% of pupils of the preparatory and 9,6% of the special medical group, while other subjects – 95,0%; 90,6%; 87,0% according to groups. Indicators of visiting of lessons of p/c lowered and made 57,3% – the main group, 46,6% – preparatory and 7,6% – special at the same time within the second academic year. Attendance of other subjects made 94,6%, 91,3%, 89,3% (pic. 4).

The analysis of the reasons of absence of pupils at lessons on physical culture at comprehensive schools of Kharkov showed that the main admissions of classes on p/c happen after diseases (with the certificate of discharge from physical activity).

The carried-out analysis of a state of health of pupils by medical cards found out that pupils of 1-4 classes 47,4%, 5–9 classes – 45,2%, 10–11 classes – 41,8% entered during 2009–10 to the first group (the main medical group). The indicator of the attendance lowered to 44,5% (1–4 classes), 33,3% (5–9 classes), 38,9% (10–11 classes) within the second year of the researches (2010–11) (tab. 2).

The second medical group (the preparatory medical group) included 45,6% of pupils of 1-4 classes, 42,5% – 5–9 classes, 38,7% – 10–11 classes, the indicator increased to 47,3% of pupils of 1-4 classes, 49,1% – 5–9 classes and 41,0% – 10–11 classes the next academic year.



Pic. 4. The average value of visiting of lessons of p/c by pupils (1-11 classes) concerning other subjects at school (from a total number of lessons which were visited) within two academic years (n=735)

Table 2

State of health of pupils of comprehensive schools of Kharkov (n=735)

State of health	1-4 classes		5-9 classes		10-11 classes		1-11 classes	
	Academic year							
	2009-2010	2010-2011	2009-2010	2010-2011	2009-2010	2010-2011	2009-2010	2010-2011
I group	47,4%	44,5%	45,2%	33,3%	41,8%	38,9%	44,8%	38,8%
II group	45,6%	47,3%	42,5%	49,1%	38,7%	41,0%	42,2%	45,8%
III group	7,0%	8,2%	12,3%	17,7%	19,5%	20,1%	12,9%	15,3%

Note. I group – the main group; II group – the preparatory group; III – the special group.

7,0% (1-4 classes), 12,3% (5-9 classes), 19,5% (10-11 classes) of pupils entered to the third medical group (the special medical group) at the beginning of researches. The next year the indicator raised to 8,2% (1-4 classes), till 17,7% (5-9 classes), till 20,1% (10-11 classes) of pupils (tab. 2).

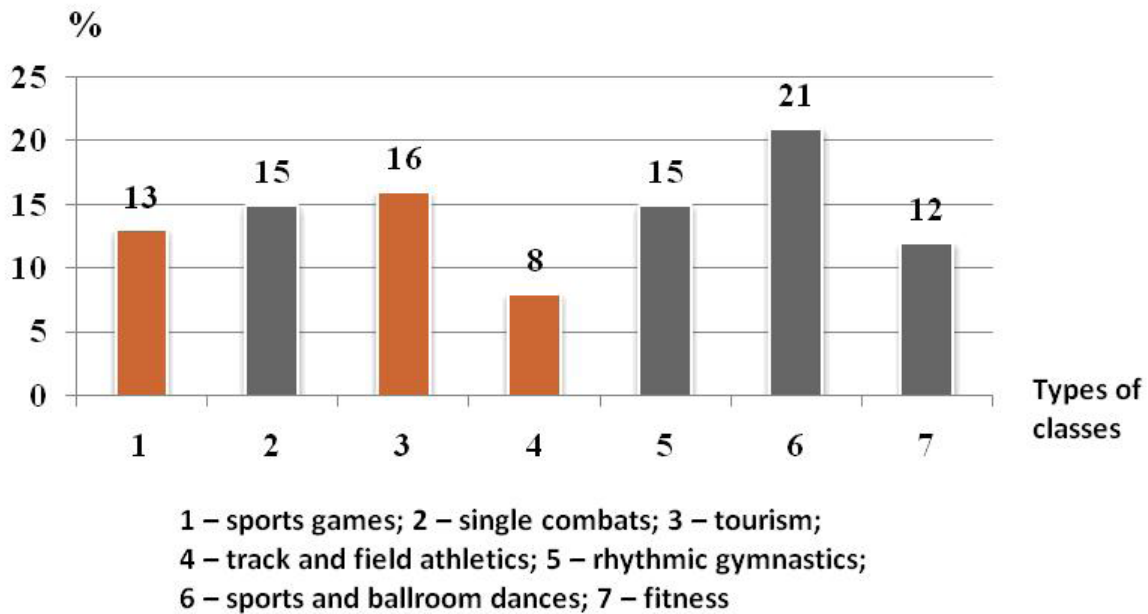
Thus, the state of health of pupils in 44,8% answered criteria of the main group, in 42,2% preparatory and in 12,9% special during 2009-10 from the first till the eleventh classes, the next 2010-11 a number of pupils of the main group reduced to 38,8% (-6%) and increased to 45,8% (+3,6%) in the preparatory group and till 15,3% (+2,4%) in special medical groups.

The carried-out analysis of a condition of physical culture testifies to the increase in a number of pupils of 1-11 classes of comprehensive schools respectively at the preparatory and special medical groups.

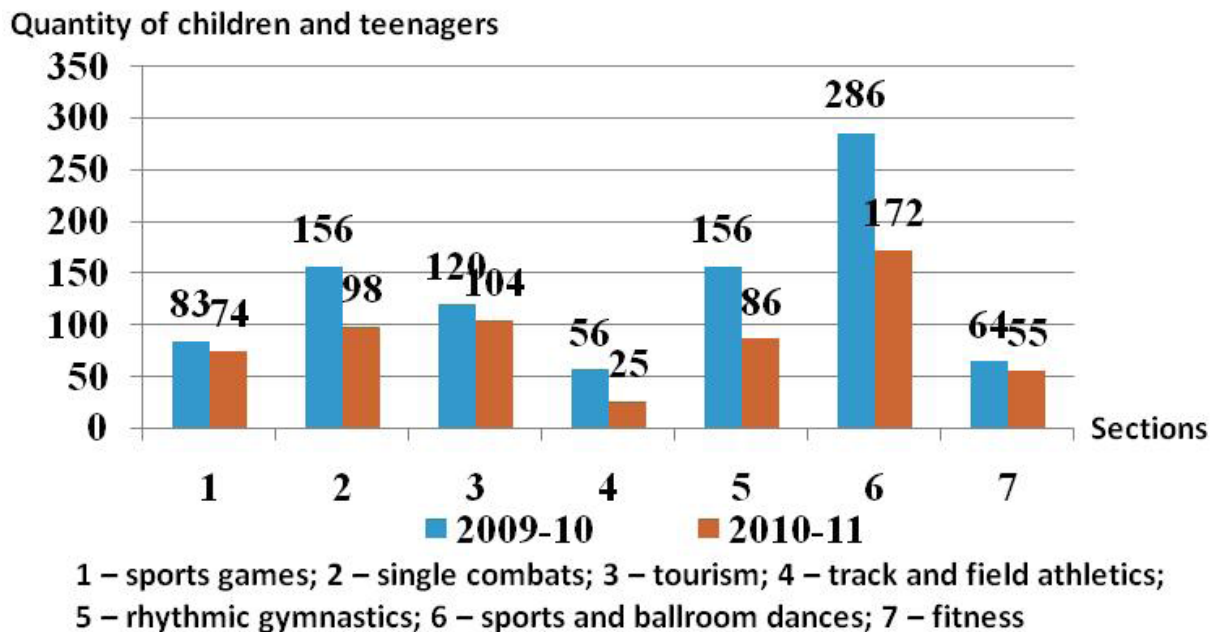
The social system of physical training of pupils is interdependent from out-of-school activity [4; 7] therefore further we defined the most significant improving and sports sections which function in general education institutions of Kharkov (pic. 5).

The analysis of the obtained data of visiting of improving and sports sections at sixteen schools of Kharkov found out that sports sections on sports and ballroom dances (21%), tourism (16%), single combat and rhythmic gymnastics (15%), sports dances (13%) and track and field athletics (8%) (pic. 5) are more cultivated. At the same time classes only on sports games, tourism and track and field athletics are free of charge, other types of classes need from parents material expenses.

It is determined that only 6% (921 pupils) of school students 16 comprehensive schools of Kharkov were attended by improving and sports sections in 2009-10 academic years (pic. 6).



Pic. 5. Improving and sports sections in general education institutions of Kharkov



Pic. 6. Visiting of improving and sports sections by children and teenagers at comprehensive schools from a total number of pupils (n1=921; n2=614)

The greatest number of children and teenagers (31%) visited sports sections on sports and ballroom dances, on 17% – single combat and rhythmic gymnastics, 13% –tourism, 9% – sports, 7% –fitness and 6% – on track and field athletics.

The next 2010–11 the percent of visits of improving and sports sections by children and teenagers decreased to 4% (614 pupils) from a total number (15341 pupils) and made 28% (172) who visited sections on sports and ballroom dances, 17% (104) –tourism, 16% (98) – single combat, 14% (86) – rhythmic gymnastics, 12% (74) – sports, 9% (55) –fitness and 4% (25) – track and field athletics.

Conclusions:

1. It is determined that the reasons of the decrease in an attendance of lessons on physical culture by

pupils of the main, preparatory and special medical groups within two academic years is: good reasons – an illness (from 4% to 10%), a release from classes after an illness (from 25% to 79%); without a valid excuse – there is no uniform, there are no motivations, fatigue after other classes, laziness (from 1% to 4%).

2. Strengthening of health of pupils during the teaching and educational process are one of the main tasks of a school. At the same time a number of pupils of the main medical group reduced on 6% in two academic years in which pupils have to put the harmonious, high or average level of physical development with the high and above an average level of functionally-reserve opportunities of the cardiovascular system; increased on 3,6% number of pupils of the preparatory group who don't need yet physiotherapy exercises; increased on 2,4% a number of pupils of the special group in which pupils have considerable deviations in a state of health which don't interfere with a study at school.

3. It is revealed that sports sections as on a paid basis function at 16 comprehensive schools of Kharkov (single combat, rhythmic gymnastics, ballroom and sports dances, fitness), and a free basis function (sports, tourism, track and field athletics). Within two years (286 children and teenagers (the first year) and 172 (the second year)) visit most of all ballroom and sports dances, 156 and 98 different types of single combat, 156 (86) rhythmic gymnastics, 120 and 104 improving and sports tourism, 83 and 74 – sports, 64 and 55 – fitness and 56 and 25 – track and field athletics. At the same time a number of children and teenagers in sections decreased in two years: on 10,8% – sports, on 14,1% – fitness, on 13, % – tourism, on 37,2% – single combat, on 39,8% – ballroom and sports dances, on 44,9% – rhythmic gymnastics, on 55,3% – track and field athletics.

Prospect of the subsequent researches. The subsequent researches will be directed on the definition of morphofunctional features of children and teenagers with defects of a bearing at comprehensive schools and the development of physical exercises for their correction.

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Research of level of psychological preparedness of 30-40 years old tourists skiers in the preparation period

Abstract. Purpose: Compare the results of research of the psychological state of 30-40 years old tourists skiers at various stages of preparation period. **Material and Methods:** 14 people aged 30 to 40 years old who have a different experience in water, hiking and mountain as well as ski-sport hiking took part in research. Analysis of scientific and methodical literature, pedagogical observations, pedagogical experiment, methods of mathematical statistics is used. **Results:** The test results of 30-40 years old tourists skiers which are the participants in the experimental group received at different stages of preparation period and the results. Their comparative analysis is held. **Conclusions:** It was found that, at the stages of preparation period indicators of personal qualities and concentration had always risen, reaching the highest degree at the end of the experiment.

Keywords: tourists skiers, psychological preparation, concentration, attention, quality, personality, experiment, results, rate, testing.

Introduction. Psychological preparation of tourists skiers includes the formation of knowledge on the basics of psychology and upbringing moral and volitional and personal qualities. Psychological preparation of tourists skiers can be divided into two components: general and special. General psychological preparation is aimed at forming the necessary moral and volitional qualities of a tourist-skier. Special (preparation to overcome the specific natural obstacles) in each particular case should have: a certain installation to overcome obstacles (safety, speed and etc.). motivation of action; awareness of complexity of the constraints and opportunities to overcome it; the formation of hard confidence in the abilities and opportunities to meet the challenges; overcoming negative emotions caused by the upcoming actions; the creation of the state of psychological readiness for maximal volitional and physical stress as well as the close interaction with other team members [1, 2, 5, 6, 9, 11].

At the same time public and social upbringing forms social activity of tourists skiers and the whole group, which is manifested in community service, environmental protection, regional studies and other activities.

Moral upbringing of tourists skiers is the basis of formation of the most important consciousness and moral qualities. For ski tourism one of the most important qualities is teamwork, including a sense of duty and responsibility, comradesly mutual assistance, demanding to others and to himself/herself in the interests of collective, discipline.

Upbringing of volitional qualities of tourists skiers is carried out during preparation training and in hiking conditions. Overcoming obstacles is a necessary factor in the development and manifestation of the will. The main volitional qualities which are necessary for tourists are: determination, courage, perseverance, initiative, self-control and patience.

It is clear that the sense of purpose is the main willful property which defines the direction and level of development of the individual. In bringing up of sense of purpose it is necessary to put an available aim before the tourists skiers and achieve it. In hikes, mountainous touring, ski touring this purpose may be the success of the tourist hikes in the pre-selected area, which must be accompanied with the increase of sports skills [1, 4, 6, 8, 9].

Many researchers believe that [2, 4, 7, 9, 10] courage is the ability to confront fear and act in dangerous situations with a certain security. Many technical methods in tourism related to overcome natural obstacles, require courage, and bring it up in the process of their implementation.

Decisiveness is the ability to make decisions quickly and reasonably and to begin to implement them in a few variants and ambiguous consequences of a decision. Especially it is often required to show resolute leader of the tourist group in selecting the options of the way.

Perseverance is the ability to strive to achieve the purpose constantly in spite of some difficulties and setbacks. Tourists' perseverance manifests in regular employment in tourism in all environments.

Initiative is the ability to take certain actions addressed to solve the specific and general problems on their own way. It is especially important the initiative in solving the problems of security and other situational tasks in tourism.

Excerpt is the ability not to hurry with the actions; conclusions; expression of feelings which interfere with the implementation of the decision; not to submit to influence the persons showing the lack of confidence; pusillanimity; cowardice; etc. In tourism, the implementation of even the wrong decision in choosing the way of changing the way is often preferable in search solutions of the best way if it is not related with security.

Patience is the ability to resist to fatigue in difficult conditions, negative emotions, certain time to withstand relatively high loads, using extra strong-willed efforts. In tourism, a heavy backpack and many kilometers of the route are the main test.

A number of researchers [3, 7, 9, 10] say that in the upbringing of personal qualities of tourists, the well-known methods of forming the consciousness of the person (lectures, method of example, and others); methods of organization and activity of formation of behavior experience (pedagogical requirements and tasks, variety of exercises, creating bringing up situations etc.); methods of stimulation (competitions, promotions, punishments and others) are used.

Connection with academic programs, plans, themes. Researches are carried out in accordance to the thematic plan of research of the Department of Winter Sports, Cycling and Tourism of Kharkov State Academy of Physical Culture (KSAPC) of the Ministry of Education and Science of Ukraine for 2013-17 on the topic «Fundamentals of sport tourism in the recreational activities of different age groups in Ukraine» (the number of state registration 0114U000366).

Purpose of the work is to determine changes in the degree of «Big Five» of personal qualities and concentration of attention with the help of the method «mixed lines» with tourists skiers during preparation training.

Methods of the research: analysis of scientific and methodological literature, teaching observations, pedagogical experiment, methods of mathematical statistics.

Organization of research. Investigations were carried out in May – January, 2012 - 2013. The experimental group consists of 14 people aged from 30 to 40, with many years of touring experience.

Results of the study. In the process of preparation training used means of the training in a certain extent impact on formation both individual and group of psychological qualities.

That's way during the preparation it was appropriate to identify the severity of personal qualities of tourists skiers (0-3 low; 4-6 lower than the average, 7-9 average; 10-12 higher than the average, 13-16 high) which in our research were determined by the method proposed Gretsov A.G. (2006) (Table. 1) [3].

Table 1

Degree of manifestation of personal qualities of 30-40 years old tourists-skiers during preparation period (n=14)

№	Indicators, points	30-40 years old		
		$\bar{X}_1 \pm m_1$	$\bar{X}_2 \pm m_2$	$\bar{X}_3 \pm m_3$
		May	August	January
1.	Extraversion-introversion	8,6±1,00	10,9±0,87	13,3±1,02
2.	Emotional stability - neuroticism	10,1±0,60	8,6±0,71	6,6±0,75
3.	Openness and closeness to new experiences	10,7±0,55	11,9±0,82	13,6±0,62
4.	Consciousness - disorganized	7,2±0,88	6,9±0,94	12,8±1,03
5.	Friendliness - hostility	9,9±0,72	11,9±0,58	13,1±0,58

Testing tourists skiers of 30-40 years old the average degree results of manifestation which corresponded the readiness to perform any efficiently work in a team than individually were received, during the period of preparation indicators of significantly increased on 4.7 points ($t = 3,59$; $p < 0.01$) and reached the highest degree.

The indicator of personal qualities neuroticism and emotional stability also changed, and at the end of

the research the level of expression was lower than the average, but at the same time it corresponded to the increase work in stressful situations ($p < 0,01$).

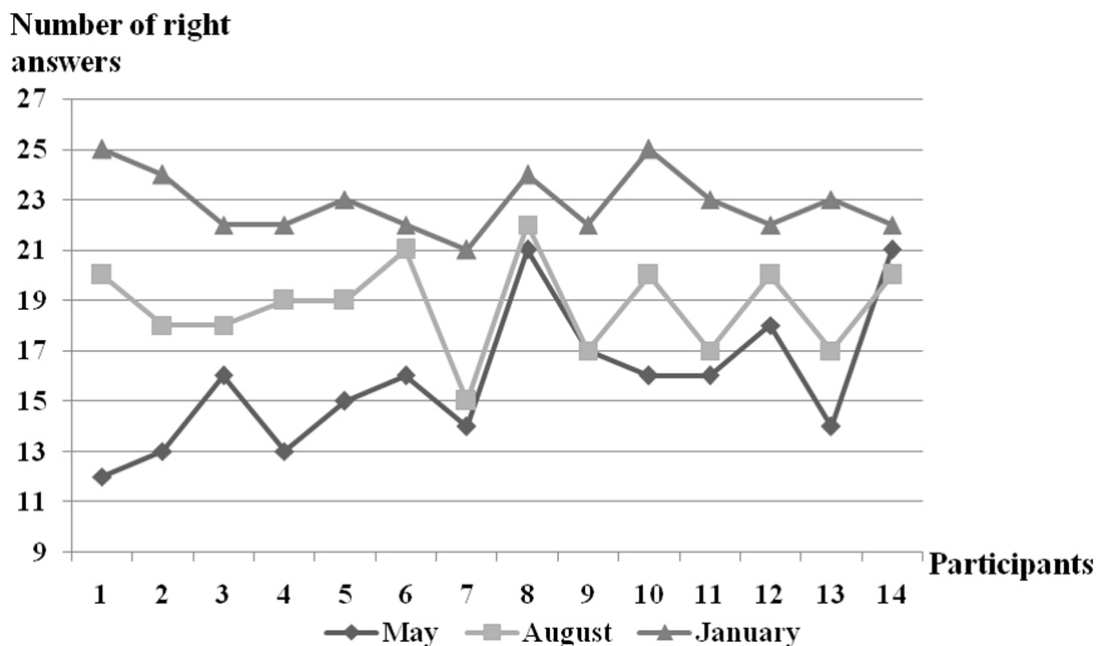
During the research it was the instability of opinion, while in the group it was complete perception of everything new that had appeared ($p < 0,01$).

The indicator of personal qualities of conscious and disorganization for eight months had an average degree that caused desire to control each other, as well as to worry because of real or perceived mistakes, in the future there were sense of purpose, reliability in actions, persistence with a high degree of severity ($p < 0,01-001$).

During the preparation the fifth quality friendliness and hostility statistically significantly changed and the result had a high degree of expression, which is 3.2 points ($t = 3,38$; $p < 0,01$) relative to the beginning of the research.

We also carried out the research of concentration of tourists skiers' attention that is focus on one activity, which characterizes the degree, the certain work depth, using the methodology of mixed lines (Pic. 1).

In the beginning of the researches great differences between the indices of the tourists, which reached 9 points in May, in the middle (August) they reached 7 points and at the end (January) – 4 points were revealed.



Pic. 1. The level of concentration of tourists skiers of 30-40 years old ($n=14$)
1 – May; 2 – August; 3 – January.

The indicator of attention was enabled us to identify a high level of concentration in a short period of time. The high level of concentration often coexists with scattering, which is the other side of passion, absorption in some matter (Table 2).

Table 2

The level of concentration of tourists skiers of 30-40 years old ($n=14$)

Indicators, points	30-40 years old			Rating of statistical significance	
	$\bar{X}_1 \pm m_1$	$\bar{X}_2 \pm m_2$	$\bar{X}_3 \pm m_3$	t	p
	May	August	January		
Mixed lines	15,9±2,17	18,8±1,65	22,9±2,89	$t_{1,2}=1,08$ $t_{1,3}=2,89$ $t_{2,3}=2,07$	$p_{1,2} > 0,05$ $p_{1,3} < 0,05$ $p_{2,3} < 0,05$

Statistical significance indicators of 30-40 years old tourists skiers' concentration of attention identified the difference between indicators of the first and third researches and was 7 points ($t=2,89$; $p < 0,05$).

Conclusions:

1. The research of psychological condition of 30-40 years old tourists skiers showed that at the beginning of the experiment neuroticism, closeness, which depend on the tendency to variability of mood, readiness to accept failure are pronounced more.

2. At the end of the experiment under the influence of training loads tourists showed a high level of claims – the desire to imagine a more difficult purpose to achieve the results.

3. During preparation period, a high degree of concentration on the training activity, which allows in future reduce the number of possible mistakes that can lead to accidents and injuries in a ski hiking.

Further studies will be aim to identify psychological preparedness of tourists in other tourist activities.

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Analysis of the performance of national teams in Greco-Roman wrestling at the World Cup 2015

Abstract. Purpose: to analyze the performance of national teams in Greco-Roman wrestling at the World Cup in 2015. **Material and Methods:** the analysis of 118 highly skilled wrestlers of Greco-Roman style. **Results:** 10 basic technical actions that is more often used by wrestlers. Analysis of competitive activity of wrestlers of Greco-Roman style on the KW-2015 showed that more technical actions carried out in the front – 199 techniques than on the ground – 135 techniques. Wrestlers have a high-end high efficiency performance of reception throughout the bout. **Conclusions:** it was found that in the competitive technology dominated the offensive, the fight is ongoing at a fast pace, techniques are performed after prior training and if the athlete is confident that the reception will be executed.

Keywords: competitive action, national teams, effectiveness, Greco-Roman wrestling.

Introduction. Analyzing a tendency of the development of a fight in recent years, most of experts meet that for the development of wrestling including as an element of the program of the Olympic Games, it is necessary to take measures for the increase of productivity of wrestles at the preservation of high intensity of a fight throughout the whole fight [2; 6; 10; 12; 14].

The level of technical and tactical actions (TTA) of a sportsman mainly defines his success in a match [4; 6; 15; 18]. Scientific and methodical ensuring training of the qualified wrestlers demands first of all a choice of the most effective TTA and their further improvement [3; 8; 11; 13]. It is caused by that the composition and the structure of productive TTA quickly changes in sports practice. Therefore for training of high-class sportsmen it is important to inform wrestlers and coaches in time on the perspective directions of the development of a wrestling. Thus the analysis of the competitive activity of highly skilled wrestlers and the strongest national teams of the world is actual [1; 5; 9; 16; 17]. One of the prestigious team competitions in wrestling is the World Cup (WC) in which the strongest national teams of the world participate.

Communication of the research with scientific programs, plans, subjects. The work is performed according to the plan of the R W of Kharkov state academy of physical culture.

The objective of the research: to carry out the analysis of the performance of national teams on Greco-Roman wrestling on the World Cup of 2015.

Tasks of the work:

- to determine the level of technical and tactical preparedness of highly skilled wrestlers on WC-2015;
- to reveal distinctions in technical and tactical preparedness of teams-participants of WC-2015.

Material and methods of the research: analysis of scientific and methodical literature, pedagogical supervision, analysis of video records of competitive activity of wrestlers, timekeeping, mathematical statistics.

Results of the research and their discussion. We made pedagogical observations over the competitive activity of highly skilled sportsmen-wrestlers. Greco-Roman wrestling competitions were an object of supervision: The World Cup (WC) of 2015. 118 fights of wrestlers were analyzed.

Results of the performance of eight teams are given in tab. 1-3. In the comparative analysis of skill were considered: quality of victories and defeats; variety of technical actions; indicators (points, techniques and preventions passing in a fight).

Apparently from tab. 2, the national team of Azerbaijan won 23 victories from 31 carried-out matches and won the first place. Among victories on “touch” and noticeable advantage of the Azerbaijani, Russian and Turkish wrestlers is true on points (on 6 meetings). More often others were lost on points of Armenian wrestles (6 fights) and the German wrestlers (5 meetings). It should be noted that the Iranian sportsmen have more, than another; it is awarded victories in connection with removal of the opponent because of the passivity (2 fights). The Armenian wrestlers lost rather many fights according to preventions (2 meetings), and the Turkish wrestlers – on “touch” (2 fights).

Table 1

Results of matches between teams

№	National teams	Results of meetings					Victories: Defeats	Place
		Group A						
1	Iran	–	2:6	6:2	7:1	6:2	21:11	3
2	Azerbaijan	6:2	–	7:1	7:1	4:4	24:8	1
3	Sweden	2:6	1:7	–	6:2	2:6	11:21	6
4	Germany	1:7	1:7	2:6	–	6:2	10:22	7
Group B						Finals*		
5	Russia	–	5:3	7:1	6:2	4:4	22:10	2
6	Hungary	3:5	–	5:3	4:4	6:2	18:14	5
7	Armenia	1:7	3:5	–	2:6	2:6	8:24	8
8	Turkey	2:6	4:4	6:2	–	2:6	14:18	4

Note. Finals*: Germany-Armenia; Sweden-Hungary; Iran-Turkey; Azerbaijan-Russia.

Table 2

Distribution of matches according to the result

Place	National teams	Quantity of fights	Number of victories				Number of defeats			
			T	PP	P	«R»	T	PP	P	«R»
1	Azerbaijan	31	2	4	16	1	–	1	7	–
2	Russia	32	–	6	15	1	1	1	7	1
3	Iran	30	1	1	15	2	1	2	8	–
4	Turkey	31	1	5	7	1	2	–	14	1
5	Hungary	31	1	1	13	1	–	4	10	1
6	Sweden	28	2	2	7	–	1	4	12	–
7	Germany	31	–	1	8	–	1	5	15	1
8	Armenia	32	–	4	5	–	1	6	14	2

Note. T – “touch”, PP – it is pure on points, P – on points, “R” – in connection with disqualification of the opponent for three preventions.

The analysis of a technical arsenal of the competitive activity of highly skilled wrestlers allowed to allocate 10 main technical actions which are most more often used for WC-2015: fall over by a fin – 76 times (23%), fall over by a return belt – 8 (2%), sprints by a back belt – 26 (8%), counter techniques in a mat – 25 (7%), transfers – 44 (13%), throws by a deflection – 9 (3%), throws by a subcollar – 21 (6%), dumping by knocking down for a trunk – 31 (9%), pushing out for a carpet – 82 times (25%), counter techniques in a rack – 12 times (4%) (tab. 3).

The Azerbaijani wrestlers executed technical actions most of all – 63 techniques and Russian – 60 techniques, most less German sportsmen – 24 techniques and Swedes – 23 techniques. It is necessary to notice that the German wrestlers carried out only 5 technical actions in the pit. The Azerbaijani and Russian sportsmen used simple one-point TTA – pushing out behind a mat for the achievement of a victory more often than others, and also applied difficult (4-points) TTA – throws by a deflection and a back belt with a big amplitude most. The Iranian, German, Armenian and Swedish sportsmen generally used in matches low-productive (one-point, two-points) TTA – fall over by a fin, pushing out behind a mat and transfers on the ground. The Russian, Iranian and Armenian wrestlers carried out counter techniques in a rack and a wrestling mat (on 8 times) (tab. 3) most of all.

Five – points tricks (0,5% of all TTA) and four – points (10,5%) techniques were carried out a little on WC-2015. Such beautiful throws as a return belt started disappearing from an arsenal of wrestlers. It is also necessary to notice that all five-point techniques (2) were carried out by wrestlers of the heaviest weight category 130 kg.

By the analysis of competitive actions on WC -2015 it is established that offensive actions prevail as a part of the competitive technique, a fight is conducted constantly at high speed, techniques are carried out after the previous preparation and in case the sportsman is sure that a technique will be executed.

High-class wrestles have a high productivity of the performance of a technique throughout the whole match (within two periods).

Table 3

The analysis of productivity of the technique applied by wrestlers on WC-2015

Technical actions	National teams								Σ	%
	AZE	RUS	IRI	TUR	HUN	SWE	GER	ARM		
	Quantity of technical actions									
A ground:										
1. Fins	13	12	5	16	11	8	2	9	76	23
2. Return belt	4	–	–	2	–	1	–	1	8	2
3. Back belt	6	10	2	–	3	1	1	3	26	8
4. Counter techniques	1	5	4	2	2	2	2	7	25	7
Total on the ground:	24	27	11	20	16	12	5	20	135	40
A rack:										
5. Transfers	6	6	8	9	6	1	2	6	44	13
6. Throws by a deflection	1	1	–	1	3	2	–	1	9	3
7. Throws by a tuck	4	1	–	4	5	2	2	3	21	6
8. Dumping by knocking down	10	4	2	2	3	1	6	3	31	9
9. Pushing out behind a mat	17	18	14	7	8	5	7	6	82	25
10. Counter techniques	1	3	4	1	–	–	2	1	12	4
Total in a rack:	39	33	28	24	25	11	19	20	199	60
Total in a rack and on the ground:	63	60	39	44	41	23	24	40	334	100
1-point TTA	40	40	25	16	25	13	13	13	185	47
2-points TTA	31	25	16	27	16	11	10	27	163	42
4- points TTA	8	10	3	6	8	1	2	3	41	10,5
5- points TTA	–	–	–	–	–	1	1	–	2	0,5

Note. AZE Azerbaijan, RUS Russia, IRI Iran, TUR Turkey, HUN Hungary, SWE Sweden, GER Germany, ARM Armenia.

Conclusions. The analysis of WC-2015 shows that, along with other factors, the advantage of the strongest wrestlers consists in a successful and stable use of technical and tactical actions during a match and an ability to impose to the rival the style of conducting a fight.

Tactical preparation is of great importance when carrying out technical actions. In the course of a fight it is very important to create or find ability in the difficult, fast-changing situation of a wrestling match favorable dynamic situation for carrying out the attacking and counterattacking actions.

The research of technique on WC -2015 allowed to define technical actions which are used effectively in competitive fights by highly skilled wrestlers of the Greek-Roman style: fall over by a fin, fall over by a return belt, throws by a back belt, counter techniques in a rack and on the ground, transfers, throws by a deflection and by a tuck, dumping by knocking down for a trunk, pushing out behind a mat.

The analysis of the competitive activity of wrestlers of the Greco-Roman style on WC-2015 showed that more technical actions were carried out in a rack – 199 techniques (60%), than on the ground – 135 techniques (40%).

It is established that the Azerbaijani and Russian sportsmen used simple one-point TTA – pushing out behind a mat more often than others for the achievement of a victory, and also applied difficult (four-points) TTA – throws by a deflection and a back belt with a big amplitude most. The Iranian, German, Armenian and Swedish sportsmen generally used in matches low-productive (one-mark, two-points) TTA – fall over by a fin, pushing out behind a mat and transfers to the ground. Counter techniques in a rack and on the ground were carried out by the Russian, Iranian and Armenian wrestlers most of all.

Further researches will be directed on drawing up theoretical characteristics of technical and tactical

preparedness of highly skilled wrestlers of the Greek-Roman style.

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Features of methods of physical and operational control of athlete using the «Information and diagnostic complex restoration of the functional state of an athlete»

Abstract. Purpose: the study aims to determine the possibility of using the training process athletes some parameters of heart rate variability, reflecting the physical condition of athletes before and after different size loads, as well as the recovery process in skiing. **Material and Methods:** control of real-time reactions of the body of an athlete and an operational range of recovery tools using the «informational diagnostic complex restoration of the functional state of an athlete». **Result:** to study the formation of the main components of the recovery of an athlete in skiing at different stages of sports perfection. **Conclusions:** the experimentally determined the optimal ratio of means and methods of recovery of an athlete at the stages of long-term preparation, as well as the peculiarities of the recovery process in some structural formations and their conjugation.

Keywords: computer, control, heart rate variability, heart rate, pulse, psychoelectropuncture, skiers, athletes.

Introduction. Training and competitive loads in modern sport reached such sizes that their further increase can become the reason of a failure of individual adaptation of sportsmen, a decrease in efficiency of the training process, a deterioration of sports results and an emergence of pathological changes in various functional systems of an organism at all variety of means and methods of training of sportsmen. The improvement of results in the majority of sports in the next decades will be caused by an application of more effective remedies and methods of diagnostics of processes of a restoration. The increase of productivity of sportsmen is closely connected with a volume and a character of training loads. The accounting of urgent reactions of a human body to this or that training load and, in particular, during a restoration allows to increase the efficiency of classes by the optimization of norms of loading depending on his specific features.

The training process is often connected with big physical activities and even overloads after which sportsmen do not always manage to be restored completely that brings to physical and often to psychological injuries (because of a constant fatigue the psychological spirit of a sportsman on training, on competitions weakens, the desire to train disappears and the whole complex of other adverse factors appear).

Recently the psychoelectropunctura was widely used. “Psychoelectropunctura” (from Greek *Psyche* – a soul, electro - and lat. *punctura* – a prick, in abbreviated form PEP) – is a diagnostic and therapeutic method which represents a combined use of techniques of psychocorrection and electropunctura. Psychoelectropunctura is a method of psychophysiological correction of the psychophysiological development which doesn't correspond to an “optimum” model of maintenance of a homeostasis of a human body on the accepted system of criteria, has a synergetic effect at a simultaneous action of words-incentives on subconsciousness and impulses of a small electric current on the biologically active points (BAP). The PEP method is realized in the device “Harmony-1” and the program “EURASIA” [8].

The use of PEP “Harmony-1” and the program “EURASIA” was offered for the definition of a degree of an imbalance of functioning of systems of an organism of the sportsman and the establishment of the demanding activation of activity of an organism of the sportsman in the work. For this purpose we used the author's portable device SG-3 which can be used in field conditions [8].

It is known that the heart rate (HR) is the physiological parameter, the most available to registration reflecting processes of the vegetative regulation in the cardiovascular system. Dynamic characteristics of a cardiac rate (CR) allow estimating the expressiveness of shifts of sympathetic and parasympathetic activity of the vegetative nervous system (VNS) at changes of a physical condition of a person.

Data of the variability of heart rate (VHR) can be useful to understanding of chronological aspects of trainings of sportsmen and moments of time of the optimization of a physical state as they reflect vegetative influences on a heart system. VHR can also give important information on the deterioration of physical condition

of sportsmen as a result of the influence of various factors [6–8].

Communication of the research with scientific programs, plans, subjects. The work is performed according to the Thematic plan of the research works for 2013–2015 on the subject “Scientific and methodical bases of the use of information technologies at training of specialists of the branch of physical culture and sport” (number of the state registration is 0111U003130).

The objective the research: the definition of possibility of the use in the educational-training process of sportsmen of some parameters of variability of a cardiac rate reflecting a physical condition of sportsmen before and after loadings, various in size, and also recovery process in skiing.

Material and methods of the research. During the conducted research we solved a problem of the delimitation of the parameters of VHR of sportsmen at rest and after physical activity on a correlation rhythmography (skaterogramma) and histogram of a ratio of quantity of RR-intervals in various intervals of their duration.

The portable handheld skaterograph SG-3 which is developed on the basis of Kharkov state academy of physical culture which allows determining VHR indicators by the analysis of a number of cardiocycles (NN-intervals) by the method of a sliding selection, and also the analysis of a standard duration of (3 minutes) selection was used in the work[1; 2].

13 skiers-racers of different qualification took part in the researches. From them are: 4 – the masters of sports (MS), 6 – candidates for the master of sports (CMS), 3 – sportsmen of the Ith sports category (I cat.).

The measurement of the background parameters VHR at rest at sportsmen was taken before physical activity in a sitting position in 2–3 hours prior to performance or before training. The second measurement was taken after a performance at competitions or after a training load. Before the second measurement the sportsman carried out not less than 5 minutes massage with the use of different metal needles applicators of Lyapko which are a new technique for relaxation of muscles and restoration of breath. Then the sportsman had a rest sitting within 5 minutes before the stabilization of a rhythmogramma (without a slow trend of HR).

We accepted the level of intensity of physical activity during the performance of exercises of skiing for maximum if HR kept at the level of 190–210 bpm⁻¹ within more than 7 minutes during the performance of an exercise at masters of high qualification. For skiers of low qualification the range of increase of HR was determined 175–190 bpm⁻¹ within not less than 5 minutes.

The essence of a correlation rhythmography consists in the creation of a graphic arrangement of points, each of which corresponds to a duration of two next R-R intervals, thus the ordinate of a point corresponds a current, and an abscissa – to the subsequent R-R interval [2]. In norm the two-dimensional skaterogramma has a form of an ellipse extended along a longitudinal axis.

Such form of an ellipse means that some size of the unaccounted nature of arrhythmia is added to respiratory arrhythmia [3]. At a sinus arrhythmia the middle of an ellipse of skaterogramma can be determined by a meaning of an indicator of the statistical analysis of a heart rhythm – mode. Mo – mode, the most often met value of duration among N-N intervals which are equivalent to duration of pauses between reductions of heart rates indicating the dominating level of functioning of sinus knot. At sympathicotonia a value Mo decreases (the correlation field moves by the beginning of coordinates), at vagotonia– increases (the cloud of skaterogramma moves to the right on a bisector from the beginning of coordinates) [3].

Geometrical methods allowing receiving the law of distribution of cardiointervals as random variables are also used for the analysis of VHR. Thus the distribution of duration of cardiointervals is displayed on a histogram.

The diagram will be with a narrow basis and a sharp top (excessive) in stressful situations, and also at pathological conditions. The asymmetric diagram is observed at transition processes, violation of stationary process. The polyconic diagram testifies to a nonharmonic rhythm (extrasystole, vibrating arrhythmia).

Geometrical methods allow estimating the variability of a heart rhythm by means of the following parameters: mode, amplitudes of mode and variation scope. As corresponds to the quantity of RR-intervals which meet most often, it allows estimating a real condition of systems of regulation of a patient.

The additional calculated parameters are used to estimate an extent of adaptation of the cardiovascular system to various factors and to define an extent of regulation of these processes.

Results of the researches and their discussion. Results of the conducted researches of indicators of VHR of skiers-racers showed that the area of an ellipse of skaterogramma at rest and its location depends on qualification

of an athlete. The middle of skaterogramma could be on the right from a point of intersection of coordinates (1,0 s; 1,0 s) at athletes of high qualification ($M_o=1,1$ s) or on the left from a point of intersection of coordinates (0,75 s; 0,75 s) at sportsmen -skiers of the I category and CMS ($M_o=0,7$). After physical activity the sizes of an ellipse decreased, and it moves on a bisector by the beginning of coordinate axes. The research revealed that M_o makes 500 ms after physical activity of the maximum intensity at sportsmen-skiers of high qualification, and $M_o=550$ ms is at sportsmen of the I category and CMS. The area of an ellipse of skaterogramma considerably decreased in sizes and in a form and could turn into a point at $M_o<500$ ms.

It is known that an emission of blood from heart and a pulsation of vessels depend on a breath depth. On a breath the systolic volume of emission decreases from the left ventricle and inflow of blood to a heart increases. It is followed by the increase of pulling a wave of blood from the periphery. Thus, there is an additional wave in the pulse movement of blood – respiratory when in a rhythm to a breath (with a smaller frequency, than a pulse rate) height of a pulse wave of blood changes. So, the parasympathetic system has the modulating impact on activity of the sympathetic system [5]. At the present stage the practical use of methods of the analysis of VHR in sport helps to solve effectively many problems of a diagnostic and predictive profile, an assessment of functional states, control of efficiency of recovery influences, etc. However opportunities of this methodology aren't exhausted and its development proceeds.

Conclusions:

1. The results of the research showed that a complex use of skaterograph "SG-3" and PEP "Harmony-1" and the program "EURASIA" allows defining in real time a state the morphofunctional systems of an organism which are most subject to the process of exhaustion. It is completely confirmed in skiing where the result in competitions depends on the coordination of rational breath and physical actions.

2. The received preliminary results allow speaking about the possibility of optimization of the mode of physical activity as in the organization of training process, and the optimization of the mode passing of a distance in the conditions of competitions.

Prospects of further researches are connected with an expansion of a practical use of a method of the analysis of VHR by means of the portable device SG-3 in different types of sport for the operational solution of a problem of estimation of a functional condition of an organism of a sportsman, and also the control of adaptation processes. A further introduction is directed on an automation of the process of measurement of VHR and a computerization of statistical processing of an experimental skaterogramma.

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The theoretical background of modernization of physical training content in higher education institutions

Abstract. Purpose: to study the problem of designing the content of unprofessional physical training at institutions of higher education. **Material and Methods:** analysis of regulatory documents and literature on the theory and methodology of physical education. **Results:** the article deals with the problems of determination the nomenclature of sources and factors that influence the selection and design of physical education's content, the role and meaningful essence of them are proved, the new approaches to the detection of invariant and variable components of academic curriculum are suggested. **Conclusion:** the role and brief essence description of particular components of main sources and factors of non-professional sports education are detected, their particular hierarchy and importance are suggested. A variety of sources and design factors of unprofessional sports education is divided into two parts: non-teaching and teaching.

Keywords: selection and design, sources, factors, physical education content.

Introduction. The problem of the improvement of the system of physical training in higher educational institutions was repeatedly considered at the state level [5; 14; 17; 18]. The legislative base of the organization of physical training in HEI was investigated by O. V. Poproshayev [16]. Theoretic-methodological bases of the improvement of the system of physical training in HEI were researched by scientists of different activities [2–4; 6; 12; 13; 18]. Separate attempts of the modernization of the maintenance of a training material are observed in the works of experts-teachers [1; 15] but others. In all noted documents and researches the unsatisfactory level of the organization of physical training of students was noted. It is necessary to consider a decayed one also a state program of 2003 which doesn't consider modern requirements of physical training of students. Among many and various problems which appear before modern higher educational institutions, is such which arise again and again, needing new decisions at each stage of the development of the system of the higher education. It is possible to distinguish from such problems what are connected with the increase of the efficiency of study, its intensification and optimization, the development of modern methods and forms of study, the improvement of the system of estimation of educational achievements of students, and so forth. Among the main problems are such on which decision much other depends. The projection problem (selection and designing) of the content of nonprofessional sports education in higher educational institutions belongs to such main. The analysis of programs of a subject matter "Physical training" testifies that for the last decades the contents of programs almost didn't change. Only in programs of 2009-2011 a number of variable modules were entered. The lack of scientific-theoretical approaches to the design of the content of sports education for students of different courses of study is one of the reasons of such state. Researches of this problem prove that high-quality design of any content of education including to the content of nonprofessional sports education, depends on the definition of factors which influence the process of selection and designing and sources from where is scooped this contents.

The starting position of the concept of design of the content of sports education is that the global function of study is transfer of the content of social experience to the younger generation (in a broad understanding of culture) for its preservation, reconstruction and development. In other words, the only source, from where scoops the content of education, is a culture.

The definition of sources and factors of its selection and designing is a condition of the evidence-based design of any content of education in general, and to the content of nonprofessional sports education in particular. I. Y. Lerner [9; 10] who noted that the design of the content of education inevitably faces two questions: a) from where to scoop the content of education;) what circumstances and conditions objectively influence or are subject to the account when determining the content of education, its components, in their concrete embodiment.

The first question needs the definition of sources of the design of the content of sports education. The second question provides the definition of those circumstances or objects of reality which influence designing of the content of nonprofessional sports education, but the concrete contents don't enter. Such circumstances, or objects of reality, call factors which influence the making contents of sports education. In general-scientific understanding, according to O. O. Ivanova of [6] and other authors, factors are objects, phenomena, processes which influence the design of the content of education. It is necessary to carry valuable reference points of society, its requirement in education taking into account the development tendencies, conceptual approaches to education as to social institute, an idea of a structure of the personality, requirements of society, in formation of people of certain qualities of the personality and so forth.

Factors of the design of any content of education are considered in two aspects from positions of their different functions. The first aspect is connected with that the factor can be considered as circumstances and objects of the reality which include concept a source as the source of the contents can also be considered as a factor which influences its designing. The second provides the consideration and the accounting of factors which influence designing of the content of education, but aren't its source. Factors-sources should be considered a social experience (its four-component structure) and kinds of the activity. Kinds of the activity differ in that they are general for many branches of the public work: production, scientific, public and so forth. At the general-theoretical level it is possible to define such main sources of the design of the content of education: social experience, types and fields of the activity, knowledge of regularities of the assimilation of the content of education, methods of study, means of study, organizational forms of study, condition of a concrete higher educational institution, profile of training of specialists, content of the activity of a teacher. Concerning the content of sports education we will expand this list and we will present it with the observance of a certain hierarchy.

We will guide below the main sources and factors of the design of the content of nonprofessional sports education, except social experience, types and fields of the activity which are already investigated in other scientific works [7; 12; 16].

Communication of the research with scientific programs, plans, subjects. The work is performed according to the plan of the scientific work of the chair of the theory and technique of physical training of CI "KHPA" of Kharkov regional council and the chair of physical training of KIF USUFIT.

The objective of the research: to define the main sources and factors of the design of the content of nonprofessional sports education in higher educational institutions.

The task of the research:

- to consider a problem of the design of the content of nonprofessional sports education in higher educational institutions;
- to investigate a question of the definition of nomenclature sources and factors which influence the selection and the designing of the content of nonprofessional sports education;
- to prove a role and a substantial essence of each of them.

Material and methods of the research. The analysis of normative documents and references on the theory and the technique of physical training.

Results of the research and their discussion. Requirements of the society and the purpose which it sets before an education system are an important factor which influences the design of the content of nonprofessional sports education. These special requirements and the purposes define strategic activities of different establishments concerning the design of the content of education.

The purposes and the main tasks which are set by the society before physical culture of higher educational institutions of humanitarian and technical profile are considered as the following source factor of the design of the content of nonprofessional sports education. The whole and the main tasks of HEI of sports, military and other special profiles significantly differ from the first. The problem of the definition of the evidence-based purposes in physical training of higher educational institutions remains yet not solved. So, G. G. Natalov [13], concerning the questions of the definition is more whole, notes that the purposes at us, as a rule, the global: all-round and harmonious development of the personality, moral purity, spiritual wealth and physical perfection, health of the nation, healthy lifestyle. The purposes are remarkable, there are no words. But the purpose has to be objective, such which gives in to diagnosing and is accessible. The lack of each of these components turns the purpose into positive wishes. And these purposes are inaccessible and such which aren't diagnosed, and is

accessible. The lack of each of these components turns the purpose into positive wishes. And these purposes are inaccessible and such which aren't diagnosed, so are considered as the biased. Definitions of the purposes in the sphere of physical training researched many scientists who presented different approaches to the solution of this problem.

L. P. Matveyev [11] carries to the main objectives of physical training: "preparedness of each member of the society to a fruitful work and other socially important kinds of the activity; preparation for a qualitative work; physical fitness of a serviceman by means of specialized military and applied physical preparation".

Being guided by V. S. Lednev's researches [8] from a problem of the definition of the content of education, namely by the need of the accounting of structure of the personality in which it turns on "functional mechanisms of mentality, the experience of the personality, the property of the personality", it is possible to carry to main objectives of sports education of students of HEI: the formation of the experience of the identity of a student in the sphere of physical culture; the development of functional mechanisms of mentality by means of physical culture; the formation of typological properties of the personality in the course of formation of physical culture of the personality. L. P. Matveyev [11] formulates specific tasks of physical training thus: 1) the optimization of physical development of a person in the direction of all-round development of physical qualities peculiar to it, the improvement of motive abilities, strengthening and long-term preservation of health; 2) the specific educational tasks which provide the system formation of necessary individual fund of motive abilities in life, skills and related knowledge (physical education).

In the state training program "Physical training" for higher educational institutions of Ukraine of the III-IV levels of the accreditation (2003) the main objective of a subject matter "Physical training" is a consecutive formation of physical culture of the identity of the expert of an appropriate level of education [5]. This main objective, according to authors of the noted program, has to be implemented a complex of educational, improving and educational tasks:

- the formation of understanding of a role of physical culture at the development of the personality and preparation of it to the professional activity, motivational valuable the relation to physical culture, the establishment for a healthy way of life, physical improvement and self-education, requirements, in regular physical exercises and sport;
- the formation of the system of knowledge on the physical culture and healthy lifestyle which are necessary in the course of activity, study, work, family physical training;
- the strengthening of health, assistance to the correct formation and all-round development of an organism, prevention of diseases, ensuring high level of a physical state, working capacity, during the entire period of study and so forth.

The general tasks are concretized for educational, sports and special offices taking into account features of the organization of the educational activity at them.

The analysis of the given purposes and tasks testifies about their washed-away, too generalized character that doesn't allow to call them a source formation of the concrete content of sports education for a certain extent of study. There is a question to authors of the program "Why both the main objective and the derivatives from it tasks are identical to students of different courses". In our opinion, it is necessary to define the main functions of each office taking into account features of study and on their basis to formulate the leading purposes and derivative of them a task in a concrete form before formulating the whole and corresponding to them tasks. Only such approach will allow defining reasonably the concrete content of sports education for each office of study and a certain course.

The source and the factor of the design of the content of nonprofessional sports education need to be considered the principles of study and the corresponding regularities. Nomenclature and substantial essence of the principles of study are opened rather in details in textbooks and manuals on didactics. In our materials we will cover the principles and regularities of the design of the content of nonprofessional sports education. It is known that the principles are formulated for the realization of requirements of the society and the derivative purposes from them by which it is necessary to be guided during the design of a certain content of education. The formulation of these principles has a historical character which the stage and condition of the development of society, the purpose of a ruling class, and the direction of the elected pedagogical system influence. The principles characterize the general approach to the selection of the concrete content of education, show that is possible or it is impossible to include, but don't give the concrete answer to a question what exactly needs to

be included in the content of education. A number of authors (I. Ya. Lerner, A. V. Hutorskoy but other) carries to the basic principles of the creation of the content of education:

- a) compliance of the content of education to the modern level of science and equipment;
- b) compliance of outlook at the scientific-theoretical level;
- c) compliance to progressive social, moral and esthetic ideals;
- d) compliance to a task of education of socially active personality;
- e) realization of communication with life, its problems in the form of disclosure of branch of application and practical value of knowledge and ways of activity;
- f) providing the conditions necessary for preparedness for various work, observance of the polytechnic principle;
- g) ensuring physical development of the personality.

A shorter list of the general principles of the design of the content of education is directed by S. A. Krupnik (2000):

– the principle of historicity, the principle of an ontologism, the principle of systemacity, the principle of technological effectiveness.

Concerning a problem of the definition of the specific principles of the design of the content of sports education, it is possible to mark such of them:

1. The principle of the compliance of a program material to basic fundamental fundamentals of science about physical culture.
2. The principle of the unity and contrast of logic of science about physical culture and logic of a subject matter “Physical training”.
3. The principle of the structural unity of the maintenance of a subject matter taking into account the personal development and formation of students.
4. The principle of the accounting of the substantial and procedural parties of study.

In general L. P. Matveyev [11] includes to the basic principles of the creation of physical training: the continuity of the process of physical training and the systemacity of rotation in it of loadings and rest; the gradual strengthening of the developing-training influences and the adaptive balancing of their dynamics; the cyclic creation of system of classes; the age adequacy of the directions of physical training.

Also regularities of study are considered as a source-factor of the design of the content of education. I. Y. Lerner [9, 10] offers such complex of the general regularities of study which influence the selection and the designing of the content of education:

- educational character of study (positive or negative);
- any study is realized only at the purposeful interaction of a teacher and those who studies;
- study happens only at the vigorous activity of students;
- purposeful study of a student of a certain activity is reached at inclusion him in this activity;
- there are constant dependences between the study purpose, the contents and methods.

The analysis of textbooks and manuals on the theory and the technique of physical training [11; 12] allow drawing a conclusion that the problem of the definition of the principles and regularities of the design of the content of sports education wasn't investigated at the theoretical level. And, as a result, questions of the design of the content of sports education were almost not studied.

“The state standard of the higher education in Ukraine” is one of the leading sources of the design of the content of education, certainly. The analysis of the contents of this standard needs the separate research and within our materials it can't be carried out. Therefore we will only note that training programs for different courses of study of higher educational institutions are created only on the basis of the maintenance of the state standard.

An important role of a source factor is played by study methods for the definition of the concrete content of nonprofessional sports education. As methods of study provide the compatible activity of a teacher and students, students with the level of preparation also join in the designing of the content of education. Methods and their connections as compound techniques, cause the changeable additional contents. That is study can be presented as interact of a teacher, students and the content of sports education which is the subject to the assimilation.

Means of the modernization of study in aspect of tools and ways of the activity of students with them are an

independent, constantly changeable source of the content of education. Historically means of study (textbooks, evident devices, technical means of study, and so forth) constantly changed. There are considerable shifts both in selection of the content of education, and in a study technique taking into account introduction of the computer technique in modern HEI. The considerable influence on the design of the content of nonprofessional sports education gives a material support of the educational process. The existence of the modern sports equipment, sports devices and tools, necessary quantity of implements (balls, jump ropes, gymnastic sticks, and so forth) sometimes plays a crucial role in the design of the content of sports education.

As separate source and factor of the selection and the designing of the content of nonprofessional sports educations speak forms of the organization of the educational activity of students at the educational classes. It is connected with different number of students who carry out physical exercises at the same time (individual, group, frontal, circular forms of the organization and so forth), different ways of communication between a teacher and students, the system of estimation and control.

It is also necessary to refer the need of inclusion in a variable part of working programs modern kinds of sports activity to the modernization of the content of study: different modern types of aerobics and fitness, powerlifting, elements of national sports and others behind the existence of conditions of a certain HEI.

In the real study a part in formation of the content of education is played by conditions in which activity of HEI is carried out. It is about different climatic, natural, ethnic conditions, and also the professional profile of study and staffing is considered. Further, taking into account between article, we will only list a certain complex of sources and factors which also influence the design of the content of nonprofessional sports education:

- content and form of physical exercises and their classification;
- theoretical bases of sports which are a projection of sections (modules) of the training program;
- educational and control standards, and also tests of the determination of the level of motive abilities of students.

Conclusions. The condition of a problem concerning the definition of the main sources and factors of the design of the content of nonprofessional sports education is analyzed in the conducted theoretical research. The role and the short substantial characteristic of separate components is given, they are offered a certain hierarchy and the importance. The marked-out variety of sources and factors of the design of the content of nonprofessional sports education can be divided into two blocks: not pedagogical and pedagogical. We include to not pedagogical: social experience (four-component structure); types and fields of the activity; composition and structure of the corresponding science; requirements of the society and the purpose which it sets before the education system; climatic, natural, ethnic, personnel conditions and features of the activity of a certain educational institution; inter-scientific knowledge which consider a health issue of a person and physical culture as a compound general culture. We included to pedagogical: functions and purposes of sports education; State standard; principles of study; regularities of study; study methods; means of study; forms of the organization of study; system of estimation of educational achievements of students and determination of the level of physical fitness. But in materials which are offered for discussion, the given sources and factors which influence has an external character.

The subsequent research of the noted problem provides the research of internal aspects of the design of the content of nonprofessional sports educations which are connected with the definition of requirements, tendencies and interests of students of different courses of study in the maintenance of a training material on classes on physical training.

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Analysis of the sponsorship activities of the organizing committee “Kiev city marathon-2014”

Abstract. Purpose: to share the experience of the marketing technologies application in the physical culture and sports sphere and to improve the commercial activities of sports organizations during the planning and holding the mass sporting events. **Material and Methods:** the basic forms and methods of the sponsor activities of the Organizing Committee of the competition “Kiev City Marathon-2014” were analyzed with system analysis, SWOT-analysis and sociological questioning (12 specialists from the Organizing Committee of “Kiev City Marathon-2014” and 95 visitors of the “Kiev City Marathon-2014” were questioned). **Results:** the best way for obtaining the sponsorship is to use the level-approach by the organizers, which means that all sponsors were divided on different levels and each one had certain privileges. It had resulted in appropriate sponsorship agreements. **Conclusions:** the results of research given in the article will enable professional sportsmen to most effectively search and work with the sponsors in the physical culture and sports sphere, as well as to introduce modern mechanisms of interaction between businesses and sport organizations.

Key words: sponsor, sponsor activity, organizing committee of track-and-field competitions, sponsorship agreement.

Introduction. In order to share the experience of the marketing technologies application in the physical culture and sports sphere and to improve the commercial activities of sports organizations during the planning and hosting the mass sporting events authors analyzed the main forms and methods of sponsor activity of the Organizing Committee (OC) of “Kiev City Marathon-2014”.

As to Artychevsky V.N., marketing in physical culture and sports sphere is the process of planning, price making, promotion and selling sports goods and services via exchange that satisfies as a producer (physical persons and organizations), so a consumer.

Prof. Guskov S.I. [2] supposes that sports marketing include marketing of sports goods, competitions and services. It consists of all ways of activity that responds to demands and necessities of sport consumers via exchange process. Author believes that it is necessary to define marketing of sport from marketing in sport. Any sport organization is involved in marketing of sport, and different industrial and commercial organizations use sport for their marketing activity.

Sport sponsorship is one of the main channel of marketing communications at all developed markets (foremost US and EU), which is characterized a high organization and attractiveness. The high level of developing of this direction could be seen in particular by the high level of institutionalization of the segment. Thus, there are definite sponsor associations which are involved in the information providing of sport sponsorship and help to monitor its efficiency; special research companies which produce the main product – the researches on effectiveness of sponsorship on the produced methodology; special editions on sport sponsorship in EU countries.

As to Sponsorship Research International, on the average the stake of sport sponsorship is about 6-7% in all advertising expenses in the EU market, and the US sport sponsorship’s market volume is more than \$13 billion in 2007 and \$48.6 billion in 2011 [16]. These figures are the evidence of the high level of developing and well segmenting of this market which is also characterized with variability of stakeholders and kinds of proposed services. Different aspects of sponsorship are described in scientific publications of foreign authors, such as Altuchov S., Beach J., Guskov S., Konwell T., Kusun V., Kutepov M., Michuda Yu., Chedvig S., etc.

As a result of analyzing the main literature sources we could find out that the usage of marketing communication tools is very important for the sport events organizers. It is also very crucial point for our country, but there is lack information in literature sources of the Ukrainian publishers.

The connection of the work with the scientific programs, plans, subjects. The work is performed within the implementation of the complex scientific project of NUPESU for 2011-2015 1.7 “Theoretic ground and

definition of forms and ways of the innovative technologies' implementation in sports management in Ukraine and foreign countries" (the state registration number is 0111U00719).

The aim of the research –to analyze the features of sponsor activity in the physical culture and sports sphere and to find out the most effective approaches to making of the sponsorship programs for Ukrainian sports organizations (on the example of the Organizing Committee "Kiev City Maraphon-2014").

Tasks of the research:

1. To define the features of the sponsor activity in sports field.
2. To analyze the main forms and methods of the sponsor activity of the OC "Kiev City Maraphon-2014".
3. To propose the recommendations for effective implementation of the marketing tools in sports sphere and for improvement of the commercial activity of sport organizations during planning and holding the mass sport events.

The material and the methods of the study.The following methods of research were used: analyses of scientific and methodological literature and Internet resources, system analyses, SWOT-analyses, social questioning, methods of mathematic statistics. The complex of general methods and particular methodology of implementing of the social-economical researches, system analysis of the Ukrainian and foreign experience of the usage of marketing tools in sport sphere was the theoretical basis of the research. Methods of the empiric level allowed getting the information about the forms and methods of the sponsor activity of the OC "Kiev City Maraphon-2014". Results of the SWOT-analysis allowed finding out the problem aspects of sponsor support of sport organizations and to propose the recommendations for optimization of the commercial activity of sport organizations during planning and organizing of the mass sport events.

The results of the study and their discussion. Modern sport society is characterized by appealing of new types and forms of sponsor activity which is the result of the satisfaction of increasing necessities of population as in various forms of motor activity, so in new types of spectacle services.

The organizing committees have to constantly take into account changes at goods and services' markets while organizing of the sport events at all levels (international, regional, local). They use marketing tools in their activity which stimulates the specialists for acquisition of new knowledge and practical skills in marketing field.

It is crucial to apply marketing approach in commercial oriented sports in certain social-economic conditions in Ukraine. As to Prof. Michuda Yu., it allows to create a competitive product offering that makes a profit via meeting the needs of people in training, health and spectacular services. However, this is further compounded by lacking of theoretical knowledge and summary of practical experience of marketing activity in sports field.

Sport event marketing system is generally mixed with four main elements, such as:

1. Product – the spectacular service (the type of sporting activity having as its objective the achieving of the special psycho-emotional state of a person and characterized with the feeling of empathy or aesthetic enjoying). The short-term and long-term aspects of the own competitive sport product (athletes/teams, related services, souvenirs etc.) and its demand are defined on the basis of the market research.

2. Price – the monetary value of the production, in particular, of the spectacular service. In accordance with the marketing strategy OC develops the various combinations of ticket selling for sport event taking into account different consumer types and the levels of their solvency. The higher level of the sport event, the higher cost of tickets.

3. Place– while organizing the commercially oriented sport events, a very important element of the marketing activity is to choose the sport facility or territory where this event will take place. It should facilitate all technical terms and also be convenient for spectators. Depending on the event program, it is necessary to think about the maintenance of premises and to zone the territory of sport complex for achieving the maximal economic profit.

4. Promotion (complex of marketing communications) – is one of the most important marketing elements for sharing the information about the outgoing sport event and attracting the spectators. This complex includes a lot of tools, such as public relations, advertising, sponsors involvement, etc.

Sponsorship could be as a support with some monetary funds (*financial sponsorship*), or support with certain goods or services that are necessary for holding the sport event (*product sponsorship*), or sharing the air-time in mass-media or traffic access in the electronic networks (*informational sponsorship*). Sponsorship is changed by the advertising during sport event. So, sponsors are interested in cooperation with OC during track-and-field marathons and crosses for sharing the information about their products among their potential

consumers – spectaculars of the event (*direct advertising*), or for brand expansion among the participants and viewers of the event or for creation of a brand positive choice (*brand advertising*).

Marathon, half-marathon and intermediate mass races could develop running culture as in Kyiv, so in Ukraine. These mass events are aimed at a broad audience. So any big company from various sectors of the economics (such as airlines, banks, telecommunication companies, retailers, sport brands, automobile manufacturers, etc.) could be a sponsor.

“Kyiv City Marathon-2014” was one of the large-scale events in Kyiv city life that had all necessary elements, such as advertising campaign, blocked racing circuit in the city center for 6 hours, marathon city with tents, professional medical assistance and a solid list of sponsors, among which “Wizz Air”, “Obolon”, “Asics”, “McDonalds”, “Rozetka”, “Jaffa”, “Sheriff”, “Kamelia”, “Boris” as a medical partner, TV channel “1+1”, newspaper “Vesti”, journal “Correspondent”, “MensHeals”, radio-stations “AutoRadio” and “ProstoRadio” as the informational partners are presented.

Based on the five-years work experience of hosting the marathon, company could agree for sponsor support in 1-2 years after the first meeting, if OC has maintaining the connection with representatives of the company.

It is crucial for OC to understand what benefits for future sponsors it could provide. Depending on the scale of the event, there are some benefits for sponsors, such as:

- 1) self-generated income (before, during and after the event);
- 2) advertising of a product/service;
- 3) creation of a brand positive choice (via mass media, cover sponsorship) [1].

For example, sponsors providing OC with catering or clothing will gain more profit from 1 and 2 above-mentioned positions rather than from creation of a brand choice. Companies involved in selling goods for everyday life will be interested in brand promotion or in creation of a brand positive choice within their potential buyers for the growth of sales. No matter which of these benefits a sponsor is looking for most companies will be willing to provide sponsorship if the opportunity to meet their goals and recover their costs is presented clearly and properly.

As a result of our investigations, the amount of sponsor support has to conform to the scale of the event. Regardless of the desire and readiness of the potential sponsors to provide a support, the benefit has to considerably exceed the investments into the event. Sponsor put into the whole amount of sponsoring support the costs of all goods (services), logistics, personnel and administrative expenses concerning this event. Goods given by the sponsor are usually evaluated with the amount that can be obtained from selling them.

There is one more important aspect which should be taken into account while cooperating with potential sponsors – the audience of the event (participants and viewers). The more participants take part into the event, the greater interest it will gain in sponsors, and as a result the bigger sponsor support can be received by the OC. Thus, having analyzed the “Kyiv City Marathon-2014” participants’ list, we can see the following structure: the average age of a participant is 36 years old, it varies from 19 to 53 years old, in particular 34% - 16-24 years old participants, 66% - 25-45 years old participants, among them 73% are men and 27% are women. As to professional occupation, 41% of the participants – students, 27% - middle managers, 32% - top managers and self-employed. Audience was more than 3000 registered participants.

The main reasons for participating into the “Kyiv City Marathon-2014” were the following:

- “run for myself” (70% of answers);
- “run for fun”, “my friends run and me either” (12%);
- professional interest, “the result is important” (5%).

It could be found out that 87% of participants of the event was convinced that holding such competitions may help to involve population into the regular sport activity. The main tasks for mass sport events are the advertising of the sport disciplines and promoting healthy lifestyles (as to 74% of the respondents), the recreation of population (12%), the leisure organization of citizens (11%) and the finding out and support top athletes (3%).

As a result of questioning the 95 visitors of the “Kiev City Marathon-2014” the interest to sport of the Kyivites is generally mass medial (see Table 1). Sport fans choose TV or Internet, but not a newspaper as an informational source from the mass media, though the analytic quality of the sport newspapers nowadays is much higher than previous publicity and new TV channels.

Table 1

What sport events or shows have you attend or watch?
(in percentage from the number of questioning visitors)

Answer	Attend during the last 12 month	Watch regularly on TV
Soccer	8	29
Figure skating	0	3
Hockey	0	17
Gymnastics	0	6
Track-and-field	60	8
Swimming	12	2
Car races	0	6
Cycling races	7	15
Box	0	21

Also the Kyivites have been questioned to determine the conditions for involving the citizens to attend the sport events held in Kyiv or its districts. The respondents were asked question “What can attract you as a visitor or fun at sport event?” and had a possibility to choose some variants of the proposed answers (see Table 2).

Table 2

What can attract you as a visitor or fun at sport event?
(in percentage from the number of questioning visitors)

Close location of the sport event	56
Free transportation to the sport event location	34
Advertising campaign or lottery holding among the visitors	5
Spectator value of the event	60
Participation of the famous persons or athletes in the Opening or Closing ceremonies	57
Low ticket costs	25
Free sport souvenirs (t-shirts, hats, toys, etc.)	50
Free catering	4
Possibility to share the sport fans' ideals	10

So, the main condition for involving themselves to attend the sport events is the spectator value of the event for the most respondents (60%). The preferences in “Participation of the famous persons or athletes in the Opening or Closing ceremonies” and “Close location of the sport event” were fairly equally divided (57% and 56% accordingly).

Almost a half of the questioned visitors were motivated with granting free sport souvenirs (t-shirts, hats, toys, etc.), and 34% of the questioned visitors choose the free transportation service to visit the sport event.

Having analyzed the commercial activity of the OC of the “Kiev City Marathon-2014”, the following forms of sport sponsorship could be determined:

1) Monetary sponsorship. The title sponsor of the “Kiev City Marathon-2014” was air company “Wizz Air”. And the name of the marathon changed for “Wizz Air Kiev City Marathon-2014”. The value of sponsor package was € 50 000, that was about 60% of total budget.

2) Media support. Mass media support is one of the strongest tools of a sponsor activity. It could promote the appearance of new sponsors and provide the wide publicity of the events. Media support is an exclusive agreement with special information channel for advertising of the event. This advertising will be welcomed by other sponsors. In 2014 OC of the “Kiev City Marathon-2014” signed the sponsorship and partnership agreements with 31 media resources.

3) Sponsor support in the form of clothing. Sponsor companies from clothing industry are “the easiest” sponsors as a rule. These organizations would prefer to put their logo not only at printed advertising banners, but also at athletes' clothing for making the deepest effect of their advertising campaign.

1500 “Asics” branded t-shirts were presented to the first who registered for marathon, half-marathon and 10-km distance race at the “Kiev City Marathon-2014”. In total more than 3000 participants took part in the

event.

4) Sponsor support in the form of catering. In some cases the catering could be the most expensive in the event budget. One of the best ways of solving this problem is to invite catering company as a sponsor. Water is one of the vital thing as for every-day life, so during the marathon racing. It would be desirable for the OC to have a sponsor from water-supplying industry that could provide athletes with unbottled water during the racing and with bottled water at the finish.

For example, the part of sponsor support of TM "Prosora" from "Obolon" was given with the wholesale price for water in the "Kiev City Marathon-2014". Thus, buying the product the OC increases the volume of sales of the water-supplying company "Obolon". Also TM "Jaffa" was involved in this process by presenting of 0.5 l packages of juice to every participant who finishes the race. One of the most popular milk-food companies "Danon" made a gift for all children participating in youth races. Fruits and nuts that are necessary for athletes during the race distance were bought by budget funds, because of the absence of the partner from networks of catering supermarkets.

5) Sponsor support in the form of logistics. This kind of sponsor support is the great field for imagination of a marketer. It could be as tent equipment, constructions for racing roots, sanitary and cleaning facilities, medical care, policing during the marathon.

As a usual several organization are involved in this type of support announced with outdoor publicity near the main event constructions, such as marathon's tent city, medical care tents, etc.

6) Sponsor support in the form of housing. Every sport event is needed in some accommodations for participants and guests. For example, the "Radisson Blue" hotel in the Podol district that is close to marathon city offered a 20% discount for participants of the "Kiev City Marathon-2014". Also the conference hall of the "Radisson Blue" hotel provided a space for press-conferences of the OC.

Thereby, sponsors and partners which cooperated with the OC of the "Kiev City Marathon-2014" had the following benefits:

- **Use the participant's package for own advertising campaign.** 3000 registered participants got the package with products and promo materials given by sponsors and partners. The package included the event program, branded t-shirt, start number, chip, backpack.

- **Advertising materials in printed and electronic forms.** The official web-site attendance was over 10000 clicks during 3-month period before the event. So sharing the information about the marathon and sponsors' events at web-site and in printed materials was such a good advertising

- **The prizes for winners.** The absolute winners (6 athletes), winners in different age categories (120 participants) and youth winners (24 children) were awarded with sponsors' gifts.

- **The right to name one of the race distance.** One of the example is "PerwoolSport&Active energy run". The name of the race was printed at the start number of the participant and at the finish strip.

- **Advertising at the official web-site of the event.** The level of the General sponsor allowed to put the logo with promo information about the sponsor company at the title page of event's web-site and to share the link to this information from other web-site pages.

- **Advertising in the printed materials.** The level of the General sponsor allowed to publish the information about the sponsor company (with logo) at the title and back sides of printed materials (such as event program, etc.), and also to include the sponsor's promo prospect into a participant's package.

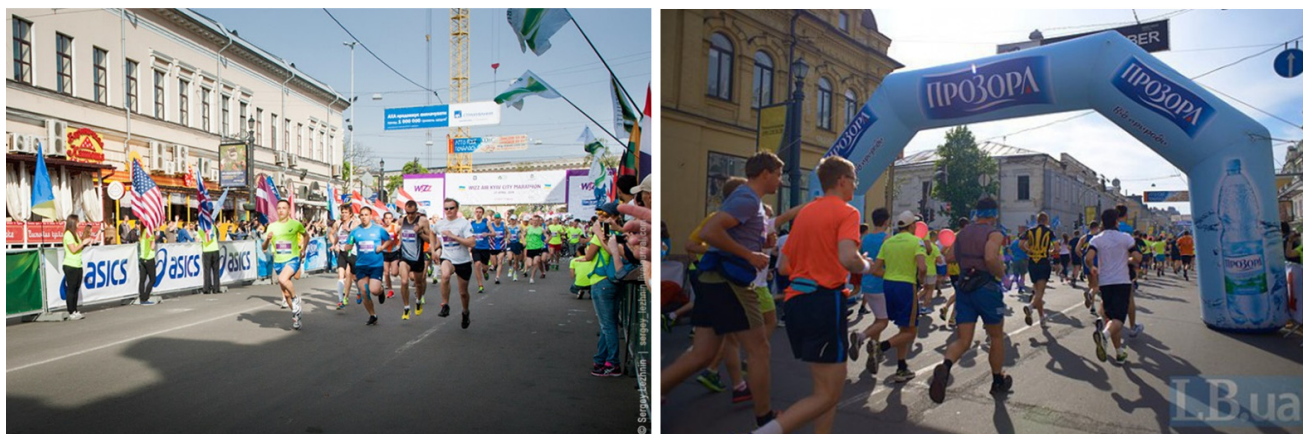
- **Product promo-stands.** As a result of questioning of 12 specialists from the Organizing Committee of "Kiev City Marathon-2014", the event was very successful for making promo-actions and demonstration the sponsors' products during the event. The high involvement of the participants and visitors in this campaign was noticed.

- **Placing the banners for the event.** Kontractovaploscha being a historical heart of Kyiv city was chosen as a place for organizing the "Kiev City Marathon-2014". The banners with sponsor information at the enclosing structures for racing roots and inflatable constructions were installed (see Picture 1).

- **Branded t-shirts for volunteers.** Each volunteer, participated in the "Kiev City Marathon-2014", was presented a branded t-shirt. The volunteer team consists of 150 members.

- **Support of the organizer's team.** Wearing the same cloth, for example tracksuits, allows the marathon organizer's team to stand out from other athletes. The sponsorship contribution helped to cover jersey production costs with the logo that provided a lasting marketing presence over whole event and

beyond.



Pic.1. Placing the sponsors' banners for "Kiev City Marathon-2014"

The questioning of the participants of the "Kiev City Marathon-2014" and analyzing of the sponsorship allowed not only to collect the statistic facts, but to conduct SWOT-analysis. As to results, the main strong points are the following:

- the massive scale of the event;
- support of the event by Kyiv city administration;
- participation of the athletes from different cities and countries;
- souvenir and awards;
- catering for participants.

The main weak points are the following:

- complicated process of the registration on the web-site;
- not so well coordinated work of the controllers and volunteers at the race distance;
- absence of the seats for visitors.

Participants of the event, runners, healthy life-style people and visitors of the mass events such as "Kiev City Marathon-2014" consider the creation of the club/school/organization for communication of the like-minded people and for teaching the techniques of running to be very important for engaging different categories of population for systematic sport activity and healthy life-style.

The questioning of the visitors of the events showed that Kyivites are interested in visiting of such events like "Kiev City Marathon-2014". The analysis of the participants' list of the marathons for the last 3 years showed that the number of foreign athletes which took part in the event was also grown up. In perspective our capital became more attractive for tourists and we could position like one-of-running countries.

The organization of the webcast of the marathon allows to draw attention of the fans, friend of the athletes and their relatives and to wider the target audience for sponsors.

Big popularity of the "Kiev City Marathon-2014" and continuously growing number of participants give a great opportunity for sponsors to higher the brand awareness and target audience for increasing of the sales.

Proceeding from above noted, we have an opportunity to draw the following **conclusions**:

- "Kiev City Marathon-2014" was organized at a high professional level using marketing technologies which had resulted in the increasing of the popularity of healthy life-style and the attracting the general public to the running culture;

- 23 sponsors and partners from different economic sectors cooperated with OC, also 31 media sponsor agreements were signed;

- the best way for obtaining the sponsorship is to use the level-approach by the organizers, which means that all sponsors were divided on different levels (title sponsor, general sponsor, media patronage, etc.) and each one had certain privileges. It had resulted in inappropriate sponsorship agreements. The air company "Wizz Air" was a title sponsor with the highest benefits. The amount of its sponsor package was €50 000, which was over 60% of total sponsorship budget.

The prospect of the subsequent researches. The further searching of new methods and approaches to sport sponsorship is going to be continued, so as the improvement of the marketing activity of sport organizations in planning and hosting the mass sport events.

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Dominant valued reasons of future rehabilitologists while studying of discipline «massotherapy»

Abstract. Purpose: exposure of dominant reasons during studying of discipline «massotherapy» by the students of direction of specialize «Health of man» of Kharkov state academy of physical culture. **Material and Methods:** motivation of students of future rehabilitologists at the study of discipline «massotherapy» was determined by a questionnaire at the beginning and at the end of practical pursuit conducted within the framework of business game. Out of the academic group of specialization the «Physical rehabilitation» two sub-groups of students were formed. **Results:** the limited level of their personal interest is exposed to study the discipline of «massotherapy» and necessity to increase interest acquire its knowledge. **Conclusions:** positive influence of the offered method is revealed on the level of interests, values and reasons in relation to the study of discipline «massotherapy».

Keywords: dominant reasons, massotherapy, rehabilitologists, motivation of students, business game.

Introduction. Massotherapy is an effective procedure both in the independent use, and in a complex with other means of physical rehabilitation. Its effective action extends on different pathological conditions of a human body.

Considering a situation in the county when in specialized medical institutions the number of arrival of the wounded fighters increases, such question becomes an actual as an ability of providing pre-medical help in conditions of military operations [1]. But not less actual is a question of carrying out their physical rehabilitation after carrying out certain medical actions. In this direction different techniques of massotherapy in a complex with other means of physical rehabilitation allow reducing the process of renewal of the lost function of a human body after the carried-out treatment considerably [2].

Despite of the considerable efficiency of an action of a massage procedure on a human body, recently an assistance of the importance of rehabilitologist decreases gradually in medical institutions. So, an official capacity of a massage therapist is reorganized into a nurse's position from massage, and an instructor of medical physical culture with the higher education – into a nurse's position from MPC, with the corresponding official salary of an average link. At the same time such experts have considerably the highest professional status and the corresponding salary in various SPA salons and in private specialized centers of an improving orientation. Similar situation gradually reorients interest of students not in interests of studying of massotherapy, and on mastering other, simpler and at the same time highly paid types of massage.

Study of students, future bachelors of the direction of preparation of “Health of a person” is a responsible process of training of specialists, whose professional activity is connected with human health with which they should work [3; 8]. But, as practice of training of specialists of this direction shows, not all students equally treat study. A certain part from them studies honestly, a certain – attends class especially formally. Unfortunately, among them is also such which not regularly attend class. Administrative actions most often for everything fill up a number of those who attends the academic classes formally.

Recently the question of the increase of motivation of students to a study got special relevance in HEI. This problem is actively developed both in native, and in foreign pedagogies devoted to the research of questions of the motivation of a study [4; 6; 7]. Authors allocate the internal and external motivation which, in turn, are divided on positive and negative. Such are most often distinguished from motives of the educational activity of students: social, informative and communicative. They are developed at the different levels of sensibleness and differ in a big variety. There are positive and negative, constant and temporary, leading and dependent, active and passive among them [5; 7]. Valuable motives that influence a desire to be engaged in this or that professional activity are not less important.

Valuable orientations which are within the motivational scope predetermine a value and a sense of the integrated knowledge, skills in the educational and professional activity as one of bases of the development of

society and the personality, a ratio of vital directions of the personality with universal values. It should be noted that there is also a development of intellectual feelings in the course of formation of the attitude towards health of surrounding people as to value that is the emotional relation to the process of knowledge, esthetic feelings which strengthen intellectual, appear in the most various experiences.

All this directs at that the analysis of the motivational sphere of the identity of students of Kharkov state academy of physical culture when teaching the discipline "Massotherapy" is one of the urgent and responsible tasks of a teacher. This problem needs to be considered as the general reorientation in values and estimates of the modern society concerning life and health of a person. It is not easy to find out the motivational sphere of students as they aren't always ready to be frank with teachers concerning the reasons which induce them to study.

The objective of the research: the identification of the most significant dominating motives of a study when studying the discipline "Massotherapy" by students the 4 courses of the specialty "Physical rehabilitation" of Kharkov state academy of physical culture (KSAPC).

Such tasks are set for the achievement of the objective:

1. To define dominating motives of future rehabilitologists when studying the discipline "Massotherapy".
2. To find possible ways of the formation of motivation of future rehabilitologists to classes by massotherapy.

Material and methods of the research. Our research is directed on the detection of advantage of valuable, professionally-informative and social motives. The anonymous questioning and the analysis of its results concerning the existence and the amount of the dominating motives to studying of the discipline "Massotherapy" were carried out for this purpose. For this purpose the questionnaires-enquirers were distributed to students of the IV course of specialization "Physical rehabilitation" of KSAPC at the beginning of the academic year where a task was set to them to answer a question concerning their attitude towards the discipline "Massotherapy":

1. Do you mean the discipline "Massotherapy" as one of means to be to useful for people in renewal of their health?
2. Does the course "Massotherapy" promote your desire to ego-trip, as an identity of an expert who is capable to form the valuable attitude towards people and their health.
3. Is it interesting to you to learn an essence of the discipline massotherapy and to learn possibilities of its influence on a human body?
4. Is it possible to be a good rehabilitologist, having a minimum of knowledge from the discipline "Massotherapy"?
5. Can you see a sort of the future professional activity in the discipline "Massotherapy" for the purpose of receiving material remuneration?

The answers to 1 and 2 questions belonged to the valuable motivation, to 3 and 4 –professionally informative, to 5 –social. Students were offered to note only positive and negative to disregard for full frankness of answers.

Results of the research and their discussion. These students studied the discipline "Massotherapy" in the VII educational semester. Lectures were given according to the working program. A practical training was given in two subgroups in the form of business games where according to the current conditional situation the differentiated techniques of carrying out massotherapy dealt with the subsequent study of them *tete-a-tete* [3]. Thus, the students of the first subgroup were motivated for a work with conditional sick people who have wound or injuries received during the participation in military operations and during the work in emergency situations. Practical trainings were hold with students of other educational group within a business game behind a usual subject of the household or production reasons of receiving a pathological state.

The repeated questioning of students of both groups was carried out at the end of a semester. The analysis of the carried-out questioning is provided in the table.

Such results were received, analyzing the results of answers of students at the identification of the dominating motives when studying the discipline "Massotherapy". Students of both groups gave approximately identical number of positive answers with a difference in 1%, 2% at the first poll on all questions.

At the second poll of rather valuable motivation, students of the first subgroup gave for 26% of positive answers more, and the second – for 11% on the first question of a massage image as to means to be useful for people in renewal of their health. On the second question concerning the assistance of this discipline to desire

to form the valuable attitude towards people and their health, positive answers students of the 1 subgroup gave on 28% more, and the second – on 12%.

Formation of motives of future rehabilitologists to studying of the discipline “Massotherapy” (%)

Kinds of motives		Answers to questions of rather motivational sphere to studying of discipline «Massotherapy»							
		I group				II group			
		1 poll		2 poll		1 poll		2 poll	
		yes	w/o	yes	w/o	yes	w/o	yes	w/o
I	Valuable motives								
	1. Massage images as means to be useful for people in renewal of their health	48	52	74	26	47	53	58	42
	2. Assistance to the course “Massotherapy” to desire to ego-trip and to form the valuable attitude towards people and their health	54	48	82	18	53	47	65	35
II	Professionally-informative motives								
	3. To learn the discipline essence “Massotherapy» and to learn possibilities of its influence on a human body?	67	33	75	25	65	35	70	30
	4. Opportunity to be a a rehabilitologist, having a minimum of knowledge from the discipline “Massotherapy»?	37	63	22	78	37	63	31	79
III	Social motive								
	5. To see massotherapy as a a sort of the future professional activity for the purpose of receiving a salary of an expert of a high level.	55	45	60	40	56	44	64	36

Concerning the professionally-informative motivation, students of the first subgroup answered on 8% more, while in the second – for 5% on the third question of interest of knowledge of opportunities of this discipline of positive answers. On the fourth question of opportunity to be a specialist in massotherapy, having a minimum of knowledge of positive answers, in the first subgroup was on less 15%, in the second – is less on 6%.

The social motive presented by one question of massotherapy as means of receiving a high salary, positive answers in the first subgroup was on 5% more, and in the second – on 8%.

Conclusions:

1. Considering data of the conducted poll of students, future rehabilitologists, concerning them the motivational sphere concerning mastering the discipline “**Massotherapy**”, it is possible to note that valuable motives of future specialists of the first subgroup focused on a work with victims grew considerably during military operations and at emergency situations. It promoted the increase of the value of the professionally-informative motivation. On this background the growth of the social motive is insignificant. All indicators except social have a insignificant growth in the second group focused on a work with the usual contingent of sick people,.

2. Means of the implementation of formation of the motives which are necessary for successful mastering of the chosen profession is a business game with an obligatory educational component where future rehabilitologists work within the purposeful conditional situation defined, established by the teacher which has to beat off interests of society.

3. The leading factor of formation of the positive relation to mastering a future specialty of a rehabilitologist and, in particular, the discipline “Massotherapy” is a resistant civic stand of future experts and their patriotic relation to the state.

Prospects of the subsequent researches will be directed on the identification at students of the dominating motives when studying the discipline “Sports massage” in this direction.

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