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Contents Themes:
1. Physical education of different population groups.
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.
5. Biomechanical and informational tools and technologies in physical education and sport.
6. Management, psychological-educational, sociological and philosophical aspects of physical education and sport.
7. Historical aspects of the development of physical culture and sports in Ukraine.

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CONTENT

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INDICATORS OF STRENGTH ENDURANCE OF SCHOOLCHILDREN OF VARIOUS MEDICAL GROUPS

Abstract. ***Purpose:*** *to find the peculiarities of the natural development of certain physical properties of middle school aged schoolchildren of various medical groups.* ***Material:*** *the testing was conducted in 16 secondary schools in Ukraine on 1414 schoolchildren of school age (10–16 years), including 761 boys, 653 girls.* ***Results:*** *a period of accelerating the development of power endurance of the abdominal muscles of schoolchildren was determined. With a decrease in the level of health a sensitive period of development of effective strength endurance gradually shifted to 1–2 years***.** ***Conclusions:*** *periods of accelerating rate of development of power endurance in children with poor health were shorter, a growth rate was significantly lower than in healthy children of the same age.*

Keywords: *schoolchildren, endurance, health.*

Introduction. An improvement of indexes of physical preparedness is one of the important tasks which face physical culture at school [6]. Information about the dynamics of changes of these indexes with the age of children will allow correctly to define favourable periods and skilfully to carry out the process of development of physical skills of schoolboys. In fact, the periods of accelerating development of those or other physical skills are considered as "sensible" to pedagogical influences.

Actuality of researches, directed to the scientific ground of individual or typologically aimed programs of classes of physical education is implicit. The state of health is one of high-efficiency criteria of division of children and teenagers of identical sex and passport age into relatively homogeneous groups. Contradictory character of existent data, absence of information on the periods of accelerating development of physical skills for the schoolboys of different medical groups is grounded actuality by researches in this direction.

Sometimes, there are many contradictory data about age-old periods which are characterized by the accelerating rates of development for schoolboys of different ages, sexes, samotypes. Thus, widespread is an idea, that purposeful development of certain physical quality in periods of accelerating natural development more effective, than in periods of natural genesis [1; 4; 9]. However S. P. Ljovushkin [3] believes that it is worth to distinguish periods with the high rates of development of physical internals and actually sensitive periods, "sensible" to pedagogical influences (physical exercises, directed to their development). Results of the researches conducted by him [3] proved that not always the greatest increases of indexes of physical preparedness were observed in the conditions of the purposeful forming during accelerating natural development. Individual specialists, for example, V. I. Shaposhnikova [8], assumes that the periods of accelerating a height are preceded to the periods of saltatory evolution of physical internals.

In the modern special literature the information is absent about whether these periods are different for children, who by the state of health are directed to the different medical groups. Thus, data of the special literature are grounded to assume possibility of existence of divergences in the terms of periods of accelerating development of physical internals for schoolchildren with different health levels. In particular, it is established by specialists, that for children with substantial defects in a state of health (lag in mental development) the sensitive periods of development of physical internals fall 2–3 years behind as compared those healthy ones of the same age [7].

Research connection with the scientific programs, plans, themes: research was conducted within the framework of theme of the research work on the order of Department of education and science, youth and sport of Ukraine (order №1241 from 28.10.11) of "Ground of normative base of level of physical preparedness of schoolchildren in 5-9th classes of general educational establishments" for the period of 2012–2013.

Therefore a research purpose was to set the features of dynamics of natural development of separate physical internals of schoolboys of middle school age of different medical groups.

Task of research:

1. To establish the periods of accelerating development of power endurance of abdominal muscles for the schoolboys of different medical groups.
2. To compare the periods of accelerating rates of development of power endurance of abdominal muscles by making use of different exercises.

Material and research methods. Testing of 1414 schoolchildren out of 16 general schools of Ukraine of middle school age (10–16 years) is conducted, including. 761 boys, 653 girls. Among the tested school children were 353 of basic medical group (BMG), preparatory medical group (PMG) – 653, special medical group (SMG) – 408.

Applied methods: theoretical cognition (induction, deduction, analysis, synthesis, generalization); pedagogical supervision; methods of mathematical statistics. Application of battery from 11 tests allowed to estimate the level of physical preparedness of schoolboys of middle school age and compare the results of testing of schoolchildren of the health groups, different age-related groups and also to trace the dynamics of changes with years of school studies. All tests met the basic criteria of standardization of tests, having enough high coefficients of validity and reliability. For the additional forming of motivation to display of maximal results, testing were conducted as competitions between academic classes for a rank of the "strongest class".

For finding out of relative rates of increase of level of physical skills a methodical approach was used, offered by A. A. Guzhalovskiy [2], who foresaw establishment of difference between results, obtained in the nearest age-old segments, i.e. between 10 and 11 years (a1), 11 and 12 (a2) and etc.; establishment of general difference, i.e. between 10 and 16 years (b); finding out in how the “b” is more than

the "a" (c=b/a). Age-old periods were considered the periods of very high or maximal growth of motive possibilities rates, when the annual increment of indexes of development of physical skills of schoolboys 2 times as much exceeded the rates of average annual growth of result of test rates; by the periods of submaximal, or high growth rates, when an increase of result of test was from 1,51 to 2 relative unites; by periods of mildly high growth rates, when a part grew not more than 1,5 times as much ; by the periods of less high or slow development, when a part was less than 1,0 relative unites.

Results of research and discussion. Boys in mid-school age shows deceleration of growth of general endurance rates, and for girls after 14 years is the substantial worsening, that is why it was suggested to estimate the level of development of not aerobic, but by power endurance of schoolboys.

The results of schoolboys of BMG in execution of exercise of raising of trunk in squat during 30 sec. testified to the substantial decline of power endurance of muscles of stomach with the age of (11) 12–13. An especially sharp decreasing was observed at the age of 14–15 (67,91% – for girls, $p<0,000$) and 36,46% – for boys, $p<0,001$). For boys and girls of PMG at this age-old period some decline of indexes took place also, however not such substantial (18,19% and 2,43% accordingly), that is why at the age of 10–16 the results were not practically changed. The indexes of children of SMG (Fig. 1) have enhanced with every year of studies and the greatest increases were at the age of 14–15 (13,14% and 5,78% accordingly, $p>0,05$).

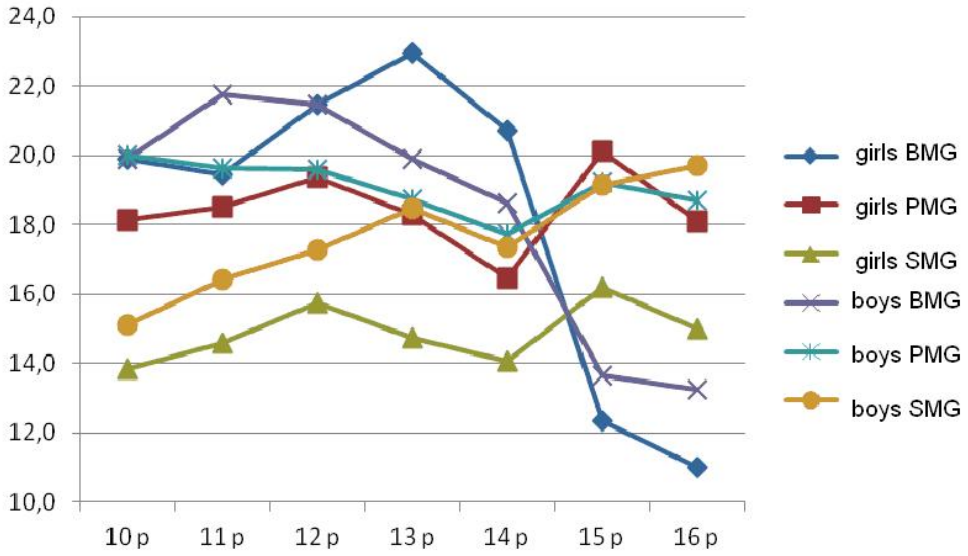

Fig. 1. Dynamics of results of implementation of exercise in power endurance of muscles of abdominal press (exercise of raising of trunk in squat position during 30sec.) by the schoolchildren of different medical groups

The analysis of relative increases (fig. 1) of results of performance of exercise witnessed that for the girls of BMG rates of accelerating development of power endurance of muscles of stomach fell on 11–13 years. In PMG a period was shorter

and appeared at the age of 13–14, i.e. on a year later from BMG. In SMG accelerating rates were at age of 14–15, rates of increases, true, were average, i.e. below than in other medical groups. As for boys they had similar tendencies, however not so clearly, as for girls. Thus, in this exercise, especially for girls, there was a clear tendency to lag behind periods of accelerating development of physical skills with the decline of health level.

Abdominal oblique muscles, together with the muscles of back participate in different domestic routine, with inclinations and turns of trunk. A strong muscular corset allows to keep a healthy backbone and good carriage Oblique muscles, together with the of musculus rectus abdominis, form a beautiful and slender waist, give to the body of sporting style. Therefore next exercise which was used for determination of level of power endurance of abdominal muscles, that is raising of trunk during 30 seconds. It was performed from starting position, lying on a gymnastic mate on a right (left) side, feet – arcuated in genicular joints under the corner of 90°, are fixed (under the bottom cross-bar of the Swedish wall), right (left) arm is bended (a palm is on a breastbone), left (right) arm – behind a head. The amount of raising of trunk was set off in two attempts (by a right and left side every other 2 min. of rest) at which amplitude of movement of shoulder joint) equaled 45° (15–20 cm).

Table 1

Periods of accelerating development of power endurance of schoolboys of different medical groups

Physical internals	Exercises	age	Girls			Guys		
			BMG	PMG	SMG	BMG	PMG	SMG
Power endurance (muscles of stomach)	Raising of trunk is in squat, during 30s, one time	10–11						
		11–12						
		12–13						
		13–14						
		14–15						
		15–16						
Power endurance (slanting muscles of stomach)	Raising of trunk, lying on right.left. side, one time	10–11						
		11–12						
		12–13						
		13–14						
		14–15						
		15–16						

Conditional marks:

maximal (very high) rates of increases of motive possibilities

submaximal (high) growth rates

mildly high growth rates

That girls had The analysis of the got data showAnalysis of data obtained showed as to girls there had a greater amount of reliable divergences in the results of performance of exercise of raising of trunk aside than for boys, that testifies to importance of taking into account of differences in the levels of preparedness of girls

of different medical groups during joint activities in physical education. In all age-related groups the indexes of strength of muscles of trunk of children of SMG substantially fells behind from the indexes of children of BMG. An exception is observed by the results of BMG and SMG for girls of 10 and of 15 years old between PMG and SMG.

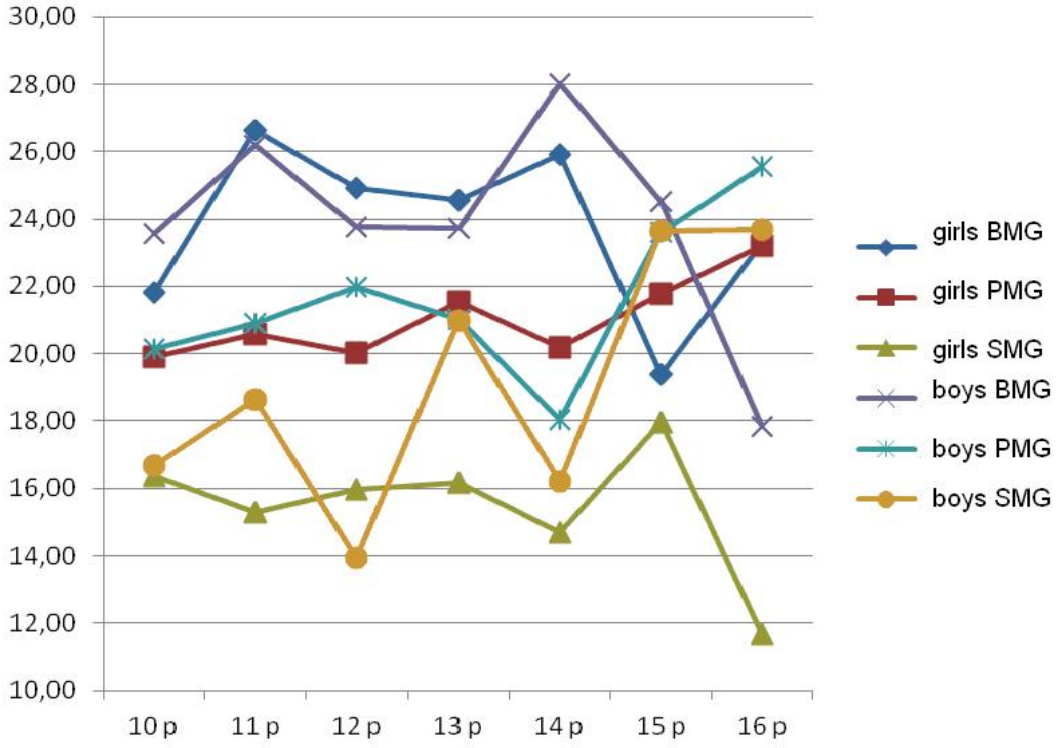

Fig. 5 Dynamics of results of performance of exercise on power endurance of muscles of abdominal press (exercise of raising of trunk aside during 30sec.) by the schoolchildren of different medical groups

During a period of 10–14 years the results of schoolgirls of BMG were higher, than PMG and SMG. In the 15th aged girls the results of BMG became (38,41%, $p<0,001$) worse substantially, and in SMG – became better and that is why approached the results of girls of BMG and PMG. In the 16th aged girls there was an opposite picture: in BMG of improvement was less than (20,37%, $p=0,05$), than in SMG (47,07%, $p<0,05$). Consequently, divergences in the results of girls of BMG and SMG remained reliable ($p<0,05$). Thus, in the dynamics of indexes of strength of muscles of abdominal press of children had the oppositely directed dynamics a characteristic feature at the age of 14–15 and 15–16 years of girls of BMG and SMG. The boys of BMG in this aged period also had a period of the substantial worsening of indexes; this very period was more protracted: it lasted from 14 to 16 years (24,95%, $p<0,05$ and 34,25%, $p<0,05$). In the same time the indexes of boys of PMG and SMG became better substantially(14,93%, $p<0,05$; 34,06%, $p=0,001$).

The analysis of relative values of increases (see table 1) showed substantial divergences in terms, duration and intensity of periods of accelerating development of the power endurance of muscles of trunk for the representatives of the different age-related, sexual and medical groups. A general tendency was what that for the

schoolboys of PMG and SMG of both sexes was the favourable period at the age of 14–15.

Generalizations of data, obtained as a result of the conducted research allows to assert that periods of accelerating development of the same physical skills that was established on results of performance of different exercises, did not coincide, that is confirmed by the opinion of B. A. Nikitjuk [5]. There were some differences from obtained earlier results [1; 3; 4; 9 and others] as to relation of beginning and duration of periods of maximal and high rates of development of physical skills. It reflects dialectical complex of the phenomenon of alternations of the different stages in life of man and lack of knowledge in this field. However, our researches revealed the general for both exercises of the periods of accelerating rates of development of power endurance of the prelum abdominale muscles. Thus, the power endurance of abdominal muscles by the best way will develop for the girls of PMG from the age of 12 to 16 years, SMG – 14–15 years, guys of PMG and SMG at the age of 14–15. In other sexual medical groups we did not succeed to trace the coincidence of terms of accelerating development of power endurance of abdominal muscles upon results of two different exercises.

Conclusions:

1. It is determined that the periods of accelerating rates of development of power endurance of the masculus abdominis with application of different exercises coincide partly Thus, the favorable period for purposeful strengthening of the abdominal muscles for the girls can be considered a period of PMG from the age of 12 to 16, SMG – 14–15 years, for boys of PMG and SMG – 14–15 years.
2. It is well-proven that for schoolboys, which belong to the different medical groups, heterochronia of periods of the high rates development of power endurance and difference in their strength is observed. In SMG periods of development of power endurance were shorter, rates of increase were substantially lower than in BMG.
3. It is determined, that with the decline of health level, the sensitivity period of effective development of power endurance was gradually shifted (for 1–2 years) to the end of aged period of 10–16 years. Thus, a tendency is confirmed as to lag of periods of high rates of development of physical skills for children with defects in the state of health.

Prospects of further researches are seen in comparison of periods of accelerating development of other physical skills for the schoolchildren of different medical groups.

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MARKETING ACTIVITIES IN THE FIELD OF PHYSICAL CULTURE AND SPORTS AS A PHENOMENON OF SOCIAL COGNITION

Abstract. ***Objective:*** *To study the social content of marketing activities in the system of physical culture. Marketing activities in the sphere of physical culture and sport is regarded as an object of social cognition. To show the value of commercial and non-profiable t marketing and its dependence on the state social policy and public opinion. To clarify the role of physical culture and sports services within the areas of social policy of social programs. To find content of marketing activities in the system of physical culture as related to the solution of the classic marketing issues and problems caused by the specific feature of physical culture and sport as a sphere of social activity. Conclusion: The market in the sphere of physical culture is bifurkalnym and needs special marketing approach, due to the fact that there is a need to balance the interests of both parties: final users (they are not solvent enough) and sponsors, patrons who pay for services provided to final consumers.*

Keywords: *sports and sports services, social programs, social policy, marketing activities.*

Actuality of theme. Marketing – one of the main subjects for the professional market leaders, such as retailers, advertising professionals, marketing researchers, managers of new products, etc. They need to know how to describe the market and divide it into segments, how to assess the needs, requirements and wishes of consumers within the target market, how to construct and test the product with the right for the consumer market properties; how to convey through consumer prices the idea of the value of the goods; how to choose skilled mediators so that the product was widely available, well presented; how to advertise and sell goods that consumers knew it and would wish to purchase [5].

The concept of marketing is a scientific system of services and gaining mutual profits. The use of it likewise an invisible hand guides the economy to meet the ever changing needs of many millions of consumers. Today, however, the marketing practice often resorted to the use of special techniques aimed exclusively at promoting consumption. Demand is need to adopt a specific form of cultural level appropriate to individual personality. Requirement – a need backed up by the purchasing power. It is easy to enumerate the demand of a particular society at a particular time. However, demand is not enough reliable indicator because it changes. Instead, the choice is influenced by fluctuations in prices and income.

A human chooses a product, a complex of properties, which provides him the most "fun" at this price.

Human needs, wishes are satisfied by goods. Under the goods we mean something that can satisfy the need or lack for propose the market to attract attention, acquisition, use or consumption. Exchange is the basic concept of marketing as an academic discipline. Marketing only occurs when people decide to satisfy their needs and demands through exchange. Exchange – the act of obtaining from someone a desired object with an offer of something instead.

Objective to study social content of marketing activities in the physical training that can be described with a help of the responses to the traditional issues of marketing services. Who is a client to be oriented, who is a contingent of consumers? What services to provide and offer on the market? What must be quality? How much? Who will provide them? Where? When? At what price and on what terms [2, p. 19]?

Agreement – a commercial exchange of value between two parties, it requires a few conditions:

1. Availability of two valuable –significant objects;
2. Agreed terms of its implementation;
3. Agreed implementation time;
4. Agreed venue.

Market – a combination of existing and potential buyers of goods. In developed society the market – it is not necessarily a physical place for transactions. In the presence of advanced communications and transport exchange through advertising, television, internet system and the like but without entry into physical contact with customers.

Marketing – the final concept of the market cycle; it is the job with market for the exchange, aim to meet human needs and desires. The role of marketing in the economy – increasing its commercial and operational efficiency. At the present stage marketing is understood as an expression of market-oriented management style of thinking that can not only respond to the development of market conditions, but also itself to change the parameters of the environment, to ensure access to the market, market expansion the market security.

Marketing has emerged in the United States on the verge of the XIX-th and XX-th centuries as one of the areas of economic research and management practices; marketing was seen in close connection with market capitalist economy as one of the most important elements. Meanwhile, marketing tools allow it in any economic climate serves as social targeting of the production and services. In this sense, marketing is of responsible nature of the socialist economy. This is proved by the fact that the methods of marketing are alike, and used in our country in the management of the economy (with certification of product quality, price differentiation and its revision, development plans and schemes for the placement and development of industries and businesses, the preparation of production programs, designing of capital construction, research and development, etc.) But there was no coherent and flexible system of methodical devising and coordination of all its elements. This

system and the appropriate tools was given by Western marketing to the business practices [9, p. 142].

It is considered that marketing can work only with a saturated market. This is true, if only to consider the marketing as tool of competition. However, the marketing activity at any degree of saturation of the market is able to adjust the behavior of consumers and producers to their mutual benefit. Orientation, structure and most of the marketing methods are more general and quite appropriate for the Ukrainian economy. Adaptation of western marketing to Ukrainian conditions can be processed more effectively if in full measure to cover yet the achieved high level of this sphere of knowledge and to consider marketing not only as elaborated carefully a specific activity, but as a philosophy of leadership. As you know, marketing in the field of physical culture and sports is marketing associated with the organization of physical health – building activity and sports work with population [3, p. 56]. In a view of that, the main trends of marketing activities in the above said field will be:

– identifying the needs, desires, interests and capabilities of potential and actual persons wishing to engage in physical education;

– development of target orientation physical and health-improving and sports activities;

– formation and optimization of features of sports, recreation and sports activities (herein including, firstly, the characteristics of the selected educational process, material and technical, and staff provision of sessions), taking into account the interests, needs and capabilities of persons wishing to engage in;

– assessment and insurance of the required quality level of organized forms of the physical recreation and sports pursuit;

– assessment and insurance of the necessary level of competitiveness of programs of physical recreation and sports activities.

Naturally, a most of these above-mentioned problems are so interrelated that to consider them one by one in actual practice is not possible. Thus, the issue of the development of the target orientation of sports work can not be separated from the problems of formation of their specifications. Competitiveness of programs is largely stipulated by their quality, i.e. the ability to meet the needs of people engaged in physical culture and sports, and therefore by the degree of target orientation and also by characteristics of organized forms of physical culture and sports, as well as by the nature of the interests and needs of the individual. We do not set ourselves the task of differentiation and the greater separation of the marketing problems associated with the projecting and organization of physical recreation and sports work with population. Instead, our goal – to help sports organizations to develop and implement a coherent strategy for such work, but a lot of decisions on certain issues.

In fact, most researchers are unanimous in what, that physical training and sport may be necessary for survival and, in particular, to meet the needs of leisure and entertainment.

The next most important factor is the need for safety and confidence in the future, a kind of educational and psycho-physiological "insurance policy" of the individual. Next is followed by a group of social needs or requirements involved.

They are closely related to the need for success and respect from others. The top of the hierarchy of needs is considered as a group of self-expression – the realization of its own potential and growth as a person. Besides, one must consider the fact that the expected outcomes of physical training and sport should be classified. We propose to divide them into two groups:

The first group includes the results of educational- training process provided by coaches.

The second group – the results which contribute to solving their personal problems, such as: health and general strengthening of the body, improving physical shape and mentality, increase of visual appeal, the results of recreational, hedonic and social-communicative nature, catharsis, and the like. However, most researchers agree that the indicators of the first group are not in the lead, they are important only insofar as contribute to solving the problems of meeting the needs of motion, proper rest, success, fulfillment, self-expression, etc. That is the main incentive that encourages physical training and sports, is human's desire to resolve their most significant, from his (her) point of view, the shortcomings, get rid of their subjective emotions. This means that the physical target orientation of programs of physical culture and sport activities, as well as, encouraging incentives of marketing (especially those related to communication policy of sports organizations) should be based on the basic principles of marketing "Find a need (problem) and fulfill it." This approach should be clearly voiced and brought to the minds of potential and actual consumers, both in advertising and news reports and personal contacts [8, p. 46].

Thus, we believe that the orientation of the target physical culture and sports activities should be developed for each target group separately, which brings us to the need of previous segmentation.

The principle of the consumer sovereignty is possibly realized, but only in the case of individual-oriented technology in recreation and sport activities. This approach envisages:

– principal goal – increasing the value and competitiveness of the individual in terms of its mental and physical, as well as social and economic status;

– priority factor – both personal sporting success and satisfaction of the human attainment of good physical fitness shape;

– determining the content, methods, forms, tools and teaching methods of physical training on the basis of compliance with the nature of sports interests and needs of the typological groups;

– designing and implementation of individual programs of lessons of physical culture and sport.

All of the above requires a transition from rigid pedagogical management to government policy and cooperation with those who wish to engage in physical culture and sports. The full realization of this process is possible only by organization of qualified marketing preparedness of sports organizations.

Adapting the marketing major issues to the system of physical culture, which operates in the market system as a sphere of social services, one can single out major problems of marketing activities of physical culture and sports organizations:

1. identifying the needs, interests and capabilities of potential and actual consumers of social services in the field of physical education and sports;

2. formation of packet services (as basic(physical culture and sports) and additional services);

3. assessment and ensuring essential level of quality and competitiveness of package of services;

4. choice of pedagogical techniques (programs, methods, forms, tools, techniques, teaching methods of instruction and training, including methods and forms of monitoring and evaluation, and etc.) those are implemented within framework of the provision services for physical education and sport, and mostly meet the interests, needs and capabilities of different consumer groups;

5. choice and decisions regarding the required amount (including duration) and regime (initial provision, the degree of regularity, a sequence) of service delivery;

6. choice and decision-making with respect to material and technical provision (choice of types of sports facilities and the level of material and technical equipment of the sports centers in accordance with the requirements of the chosen pedagogical process, requests of the consumer groups);

7. establishment of characteristics and priorities with respect to the community, which provides services in the field of physical culture and sports, as well as support of the staff sports facilities;

8. pricing for services, decision of the conditions and forms of payment, methods of price adjustment;

9. organization of promoting and selling services in the field of physical education and sport (casting agents, methods of sales and stimulation);

10. formation of communal politics: design and organization of promotional activities (choice of addressees, carriers, channels of distribution, volume, forms and methods of messages delivery) organization of favorable public opinion, personal contacts, etc. [4, p. 57]

On the other hand, considering the issues of inclusion of certain services in the field of physical culture and sports in the social package of the company, we have to focus not only on the willingness of our employees, but also consider real opportunities of enterprise as well as the opportunity to minimize costs associated with inclusion of such services in the social package. Thus in this case we have to turn our attention to such aspects of marketing in the field of physical culture and sports as follows [1, p. 142]:

– identifying the needs, interests and capabilities of potential and actual consumers of the services in the field of physical culture and sports;

– development and optimization of package and characteristics of services to be rendered (this includes, first, the characteristics of material-technical and staff security), taking into account the interests, needs and capabilities of the final consumers;

– assessment and ensure the necessary quality package of services provided;

– opportunity to minimize the financial cost of providing maximum coverage of those wishing to take advantage of this or that social benefits.

Thus, the problematic content of marketing activities in the physical training is associated, at the one hand, with the classical solution for marketing, on the other hand, has features, that are caused by the specific nature of physical education and sports as a sphere of social activity.

Firstly, according to the concept of marketing, the final consumer is recognized as the central figure of marketing relationships and activities. He is no less than final consumer who unites around him all the other subjects of the market, doing the market choice of services of physical culture and sport, terms of their provision, educational technology and staff, take an active part in the provision of services and creates conditions of the transactions of these services. The paradox is in that, despite of being central figure, the client is one of the least protected and informed among all partners of marketing.

The consequence of this situation in the field of youth sports is important participant of marketing relationships becomes parents as a specific subject. This is also due to the fact that children, adolescents and young people are, in most cases, dependents of parents and the implementation of market freedom of choice of young people largely depends on the means of the family.

Conclusion. Parents act as indirect users of the services of physical culture and sports, those are a wide range of marketing (including information and intermediary) functions in many ways likewise the functions of professionals in marketing. The main difference is in that, parents carry out their marketing activities in the interests of the final user – their own child, while marketing specialists operate by way of considering the interests of both parties, but their preference is a producer of services [6, 7].

Secondly, the role of the state is an essential in marketing services for physical culture and sports, as opposed to the marketing of other services and goods. This is due to the fact that the success of the marketing potential in the field of physical education and sport is largely stipulated by practical measures of assistance from government authorities at all levels.

Thirdly, physical education and sport is, for the most part, a non- commercial sphere (nonprofitable). This fact is a cause of a number of features of marketing, that functions in the system of physical culture.

As the commercial marketing main goal is profit, so the goal of the nonprofitable one is the purpose of the successful realization of social programs, that requires improvement of service quality, consumer's belief, various kinds of investors (public and social institutions, patrons, sponsors, etc.), for such services. Social services in the field of physical culture and sports are usually provided either completely free or below cost price. Pricing affects not only the cost of providing services, but also subsidies (budget, sponsorship) and income from own business of sports organizations. As it is known, the main sources of funding for physical education and sport are the state budgets, social organizations and various foundations, sponsors, etc. That means that the consumer and the source of solvent

demand do not match. Therein is one of the problems of important marketing problem – search for answers to the question: "Who, what for and to what extent, has to pay?"

Market of specific organization of sports- orientated is divided in two, the organization has to deal simultaneously with the two markets, each of which can be considered complete. The first one is represented by the final consumers who do not have sufficient funds, other – sponsors, trustees, donors who pay for services provided to final users. This bifurcation of the market services for physical culture and sports requires marketer to maintain balance of the interests of both parties. Promotion of sports and physical culture services in nonprofitable marketing is quite specific as closely associated with a large dependence on social policy of government and public opinion. Therefore, a non-profitable marketing is more widely uses the methods of public relations and cooperation with the media and communications. The fate of the traditional commercial advertisements in the system of physical culture is negligible; often herein services are not advertised, but sports organizations and various sporting actions. The lack of clear economic indicators of total outcomes of sportive work complicates monitoring and analysis of its economic efficiency. Here the principle of "expenditures-receipts" is replaced by the principle of "expenditures – social priorities".

Fourthly, it should be noted, that the success of organizations that provide social and cultural services in the field of physical culture and sports, largely depend on the success of their marketing teams, organized to carry out a wide range of relevant functions – from the market research and strategy development of marketing strategy to the provision of the services. This allows to consider the complex of issues of staff as a key one, that determines the quality of a solution to all of these above mentioned problems of marketing activities of sports and physical culture organizations.

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SPORTS AND PHYSICAL HEALTH WORK IN THE LEGAL INSTITUTIONS OF HIGHER LEARNING

Abstract. ***Purpose:*** *to determine the characteristics of the organization of the process of physical education and sports work of physical education departments and sports clubs of the Yaroslav the Wise National Law University.* ***Methods and materials:*** *the theoretical analysis and generalization of special scientific and methodical literature.* ***Results:*** *the matters of organization of physical education, sporting and mass participation work are discussed. The structure of the organization of the functioning of sports clubs and physical education departments at the university is clarified. The basic forms of physical education, which are cultivated in the university, are represented.. The data on the leading clubs athletes, their achievements and trainers is provided.* ***Conclusions:*** *it has been proven that the student sports clubs are the basis for the organization of mass physical culture and sport activities.*

Keywords: *students, lawyers, university, physical education, sport, sports clubs, sportsmen, trainers.*

Introduction. In 2014**,** Yaroslav the Wise National Law University celebrates the 210th anniversary since its foundation. Today, National Law University is the unique higher education institution of international fame, where more than 23 thousands of students are studying at 7 institutes and at 9 departments. During the whole period of its existing in Ukrainian educational space, the University always devoted a great attention not only to educational and scientific activities, but also to the matters of the state of students health, their physical education and sport improvement.

The fact that the health of the generation of Ukraine and its future depends on the organization of motion activity of young students, remains indisputable.

In this connection, the analysis of sporting and mass participation work among young students is quite necessary. Besides, sports student collectives always were ahead and were the propagandists of sporting mass movement [1].

Currently, the peculiarity of public policy is the concentration on the education of the active modern people generation. The higher education institutions, which continue to become the focus of development of physical culture in towns and whole regions, have a particularly crucial role in solving this challenging task.

The analysis of the latest researches and publications, and the practical experience evidence that the problems of theory, methodic and organization of physical education in the system of higher education, particularly in non-specialized higher education institutions, remain open [2–8].

A great number of points at issue emerges: on the one hand the Program of physical education since 2014 year, which is the guide for higher education institutions, and the Order of Ministry of Education and Science of Ukraine № 4 of 11.01.06 provide for the physical education exercises no less than 4 hours per week during the whole training period; and on the other hand –the autonomy of higher education institution potentially foresees the selection of subjects by its leading structures.

The connection of the research with scientific programs, plans and subjects. The research is the constituent part of scientific and research work of the physical education department № 3 of Yaroslav the Wise National Law University.

The goal of the research: to identify the peculiarities of the process of organization of physical education and sporting activities of the physical education departments and sports clubs of Yaroslav the Wise National Law University.

The material and methods of the research. The theoretical analysis, generalization of special scientific and methodical literature.

The research results and its discussion. The process of physical education of the students of Yaroslav the Wise National Law University is carried out during the academic year in various forms, which are interconnected and, besides, complement each other and represent a single mechanism of physical and sport improvement of students.

– the main form – academic physical education exercises 4 hours per week in the first and second course, provided by the university curriculum. The first exercise is aimed at overall physical condition of students in traditional sports such as track and field athletics, sports games, gymnastics etc. The second exercise is sectional, so the students have an opportunity to choose the sport, in which they want to improve, on their own. Both exercises are planned by the academic office and their realization is provided by 26 academics of three departments of physical education, including 7 masters of sports, 10 Candidates of Sciences, associate professors, 12 senior lecturers and 4 lecturers.

The principle of health-improving orientation, one of the main ones, forms the basis of academic subject «Physical education». Therefore, the lecturers solve the following tasks during the classes with the students of first course:

– the adaptation of students to the learning environment at the higher education institution; providing the knowledge about healthy lifestyle; the formation of the need for the systematical physical exercises and sports activities; the education of physical qualities of students; teaching of new abilities and skills.

At the second course, the following tasks arise before the lecturers:

– to continue the process of the education of physical qualities of students and to form the need for the constant physical perfection of future lawyers.

– unassisted physical exercises and sports activities contribute to better mastering the teaching material, allow to increase the overall time for physical exercises, hasten the physical perfection and, moreover, are the efficient form of physical education and sport in everyday life and recreation of students. This form of study is carried out on basis of wide initiative of student government and with the assistance of the workers of the Medical center of the University.

– mass sports and health-improving activities and sports days, which are conducted by the University, are aimed at the attraction of the young students to the regular physical exercises and sport, at health promotion and improvement of physical and sport fitness of students. They are realized during the free time, at the weekends and holidays, during the practical trainings;

– the training exercises at the sections of six sports clubs. Moreover, sports and health sections for both students and lecturers function at the University: sections of badminton, sports aerobics and cheerleading, man and woman basketball and volleyball, bridge, swimming, track and field athletics, man and woman handball, football, artistic and recreative gymnastics. More than 1000 students and more than 250 lecturers attend these sections.

– the participation of students of the University in sports competitions of different levels – in championships and World Cups, various international competitions, championships and Ukrainian Cups etc.

– the educational work of the lecturers of physical education departments at hostels, concerning unassisted morning gymnastics activities and different kinds of motion activity.

– the presentation of the performance results of our sportsmen at the competitions of different levels in the newspaper «Vivat Lex» and on the University website.

– preventive measures with students, regarding the matters of healthy lifestyle, prevention of tobacco smoking, drug and alcohol abuse.

The previous year was in fact fantastic for the University in terms of the number of sports achievements. For the first time in the history of educational institution, the record number of European and world champions, and World Universiade is fixed.

The XXVII World Summer Universiade in Kazan (Russia) became the main and momentous competitions, where the students of Yaroslav the Wise National Law University performed as a part of national team of Ukraine. The sportsmen of higher education institutions of Kharkov, which joined the national team of Ukraine, won 9 medals. The students of our non-specialized University won three of nine medals. It is a gold medal of Gvozdik Alexander – boxing, a silver medal of Chernyak Inna – sambo, and a bronze medal of Chernyak Marina – judo. The President of Ukraine awarded Gvozdik Alexander an Order of Merit, Second Class, Chernyak Inna – an Order of Princess Olga, Third class, and Chernyak Marina – a medal «For work and victory».

The creation and functioning of six sports clubs is the unique acquisition of the University (Fig.):

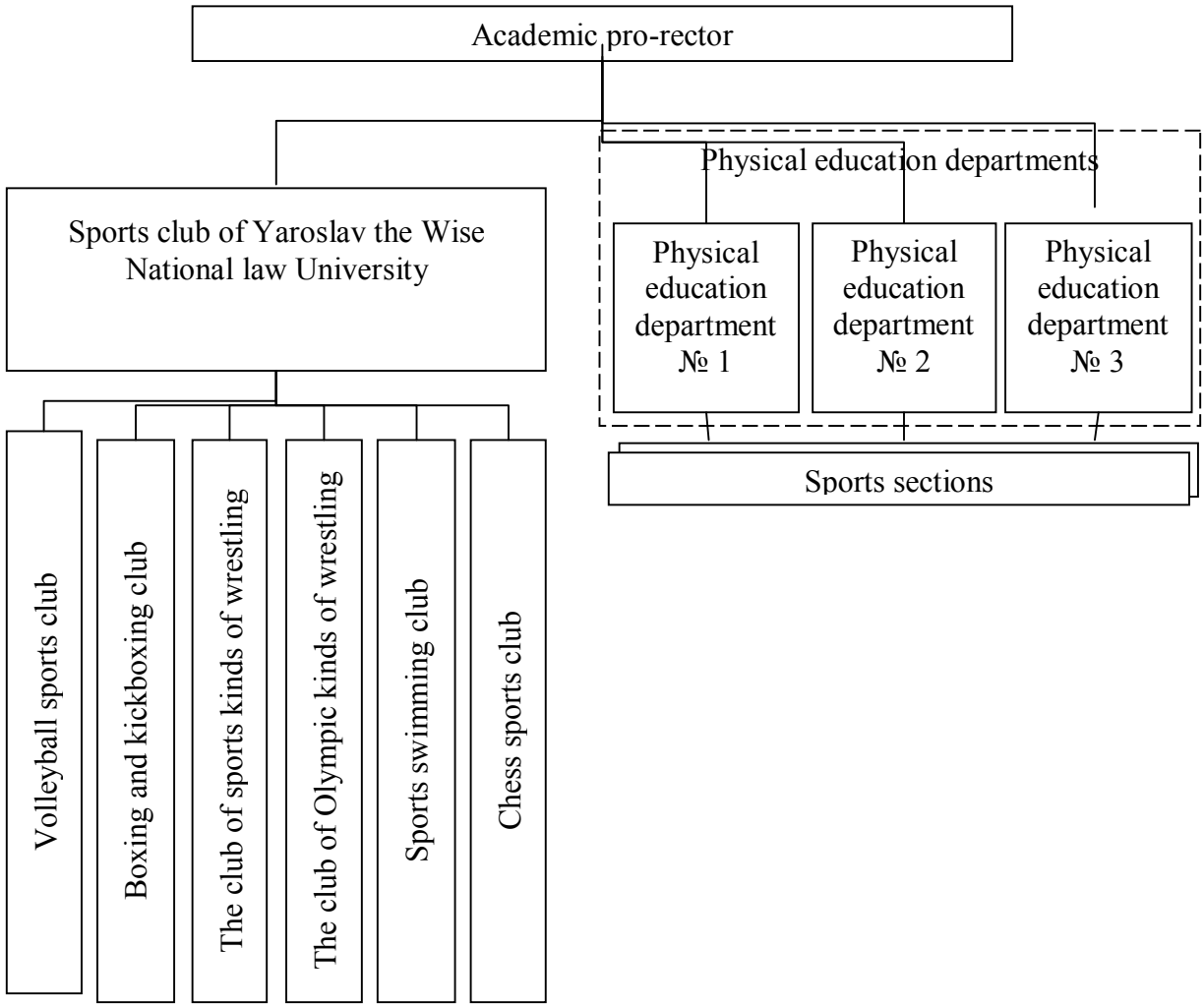

Fig. The structural scheme of subordination of sports clubs and physical education departments at Yaroslav the Wise National Law University

1. Chess Club, headed by Brodskiy Michael Leonidovich, the honored coach of Ukraine and international grandmaster.

The members of the Club are:

– Ushenina Anna, the 14th world champion, the honored master of sports of Ukraine. Along with the Ukrainian team, she became the European champion, and then the world champion in the team classification. According to the presidential decree, she was awarded the «Order of Princess Olga» of the Second class for sports achievements, won the prize «Chess Hetman of Ukraine», and was awarded the Certificate of Honor of Kharkov Town Council;

– Moiseenko Alexander, the playing chess coach, the honored master of sports of Ukraine. He became the European champion in 2013, along with the Ukrainian team – the bronze medalist of World Championship in the team classification, the silver medalist of the international supertournament of XIX category. He won the prize «Chess Hetman of Ukraine» and was awarded the Certificate of Honor of Kharkov Town Council;

– international grandmasters: Eljanov Pavel, Dolukhanova Eugenia, Kovchan Alexander, Onishuk Vladimir won the international competitions in 2013 and received awards.

The total number of medals, won by Chess Club in 2013, is 18 (11 gold, 5 silver and 2 bronze medals). At the World Championship – 2 gold medals and 1 bronze; at the European Championship – 4 gold medals; at the International tournaments – 10 medals: 4 gold medals, 5 silver and 1 bronze; at All-Ukrainian tournaments – 1 gold medal. The national team won the Club Championship of Ukraine.

In the previous year, the University held the international chess tournament Ukraine – Poland, in which the international grandmasters participated and where the national team of Ukraine won. Besides, the session of simultaneous chess game between the students of the University and world champion Denis Shkatula. In addition, the simultaneous chess game session was held by the 14th world champion Ann Ushenina and active European champion Alexander Moiseenko.

2. The Club of sambo and judo wrestling is headed by Viskov Dmitry Petrovich, master of sports of Ukraine in sambo wrestling.

The members of the Club are:

– Chernyak Inna, master of sports of international level. The silver medalist of Summer Universiade of 2013 in sambo wrestling, the winner and awardee of a great number of international and All-Ukraine tournaments. According to the presidential decree, she was awarded the «Order of Princess Olga» of the Second Class for sports achievements;

– Chernyak Marina, master of sports of international class. The bronze medalist of World Summer Universiade of 2013 in judo wrestling, the winner and awardee of many international and All-Ukraine tournaments. According to the presidential decree, she was awarded the medal «For work and victory»;

– Retinskiy Stanislav, master of sports of international level. He is the competitor of World Summer Universiade, bronze medalist of Championship and European Cup of 2013 in judo wrestling, the winner and awardee of many All-Ukrainian tournaments;

– Melnichenko Kirill, master of sports of international level. Kirill is the competitor of World Summer Universiade, bronze medalist of World Cup stage in sambo wrestling, silver medalist of open Continental Judo Wrestling Cup, the winner and awardee of many international and All-Ukrainian tournaments;

– Gulyaev Artem, master of sports of Ukraine. The silver medalist of All-Ukrainian Universiade of 2013 in sambo wrestling. The mayor of Kharkov awarded him the Letter of acknowledgement for great sports achievements and personal contribution to the sambo and judo wrestling development;

– Medvedev Kirill, master of sports of Ukraine. Kirill is bronze medalist of European Championships among juniors in sambo wrestling, the winner and awardee of All-Ukrainian tournaments.

The national sambo wrestling team won the XXVII All-Ukrainian Summer Universiade.

The Club won 120 medals during the year of 2013: (40 – gold, 29 – silver and 51 – bronze medals); There are the following medals among them: at the world-class competitions – 4 medals (1 silver and 3 bronze medals); at the competitions of European level – 8 medals (2 gold, 2 silver and 4 bronze); at the international competitions – 8 medals (2 gold, 2 silver and 4 bronze); at other tournaments – 64 medals (21 gold, 17 silver and 26 bronze).

3. The Club of boxing and kickboxing is headed by Karnitskiy Eduard Antonovich, the honored coach of Ukraine.

The members of the Club are 40 sportsmen; among them are the following ones:

− Gvozdik Alexander, the honored master of sports. In 2013, Alexander won World Summer Universiade in boxing; he is the winner and awardee of many international and All-Ukrainian tournaments. According to the presidential decree, he was awarded the Order of Merit of Second Class;

− Savelyeva Yelena, master of sports of Ukraine. The winner and awardee of many All-Ukrainian tournaments in kickboxing and wushu.

The Club won 15 medals during the year of 2013 (7 gold, 5 silver and 3 bronze medals). There are the following medals among them: 5 gold medals, won at the international competitions, and 10 medals (2 gold, 5 silver and 3 bronze), won at All-Ukrainian tournaments.

4. The Club of Greco-Roman wrestling is headed by Dzhereliy Valeriy Victorovich.

The members of the Club are 60 sportsmen; Dzhafaryan Mraz, master of sports of Ukraine, the awardee of international and All-Ukrainian tournaments, is among them.

The total number of medals, won by this Club is 26 (6 gold, 6 silver and fourteen bronze medals).

5. The head of the Club of swimming is Lutsenko Yuriy. The members of the Club are 45 sportsmen, among which are 4 masters of sports of Ukraine, awardees of the international and All-Ukrainian tournaments.

6. The head of the Club of volleyball is Romantsov Vladimir Ivanovich. The Club consists of 25 sportsmen, among which are 3 masters of sport of Ukraine.

Thus, our University won 263 medals (105 gold, 67 silver and 91 bronze) during the year of 2013.

Today there are 4 honored masters of sports among students, graduate students, academics and members of clubs, 11 master of sports of international level, 11 international grandmasters, 2 international chess masters, 29 masters of sports of Ukraine.

The staff of the University is proud of its sportsmen and coaches, which increase the University fame by performing at the world competitions and winning the high-class medals.

Last year the University has already opened the second sporting complex. This complex is one of the best ones in Kharkov. The total area of it is nearly 3 thousands of square meters. There are 10 specialized gyms, the capacity of which is 160 men for

one class. These are the gyms of sports games, fitness and aerobics, artistic and recreative gymnastics; the gyms for table tennis, boxing and kickboxing, and combat sport; the sports room for board games and the workout room for the University staff.

All the gyms have modern equipment with different functions, which is intended for the exercises of recreative and sports orientation. The dressing rooms, shower rooms, lavatories, recreation rooms, having an area of about 500 square meters, equipped with modern sanitary engineering equipment and furniture. The most of the gyms are adapted for invalids. Besides, the building is equipped with a wheelchair ramp.

Conclusions. The need for creation of comfortable environment is regarded as the main element on the way to successful attraction of students and lecturers of the University to physical culture exercises and sports activities. The key elements are:

1. The physical education and sports club as basis for the organization of mass physical culture and sports activities.
2. Sports grounds as the place for the visitors of physical education and sports clubs.
3. Sports competitions, which should add the competitive spirit to the club system.

The perspectives of further researches. The careful and complete analysis of the work of relevant structures is planned to be carried out for the further systematic development of physical culture and sport at the University. It will allow determining the priority directions, avoiding the mistakes and defining the further steps.

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PHYSICAL HEALTH LEVEL DETERMINATION OF 10-13 YEARS OLD CHILDREN ENGAGED IN TOURISM ACCORDING TO THE AUTHOR PROGRAM «SPORTS TOURISM MULTIATHLON»

Abstract. ***The purpose*** *of the work is determining physical health level of children aged 10–13 who are engaged in tourism according to the author program «Sports Tourism Multiathlon».* ***Materials:*** *18 boys and 15 girls – pupils of Chuguev district Center of tourism, ethnography and excursions for youth took part in the research.* ***Results:*** *within the period of experiment indices of Robinson index increased from medium to above average level (among girls), Skibinsky index – from lower than average to high (among boys and girls), Shapovalova index – from low to medium (among boys) and above average (among girls), Rufie index and general level of physical health – from lower than the average to the medium level (among boys and girls).* ***Conclusions:*** *a substantial increase of indices and general level of physical health was determined even after the first year of employments.*

Key words: *sport tourism, influence of employments, level of physical health, children aged 10–13.*

Introduction. In connection with children and youth's physical health indices drop and pathological and hereditary diseases rise the problem of improving and maintaining health is becoming even more urgent. In today's Ukraine the situation with children's health is critical. According to the statistics among first grade pupils 30% have some kind of health problems [6; 12]. The most common among them are musculoskeletal system disorders (23,9%), digestive system (22,5%), visual organs development disorders (7,88%), endocrine system disorders (14,4%), and also neuro-psychic, brain disorders and chronic diseases complexes etc [2; 11].

Among school-leavers there are about 90% who have different physical health problems [6; 12].

The analysis of parts composing the notion of "health" in the majority of cases comes from a sum of anthropometric, clinic, physiological, biochemical and social factors [3]. There are a lot of permanent and temporary factors influencing health state: environment, climate, wealth, heredity, conditions and way of life, medicine, motor activity. Many authors admit that the main factor to make an impact on health is motor activity level. This is why among reasons that influence negatively on health hypodynamia is mentioned [1; 4].

According to scientists [5; 9], the optimal volume of motor activity for children is supposed to make up 12–14 hours a week on condition of appropriate physical load, however following the complex physical training program introduced in Ukraine, it does make up only three academic hours. Which means motor activity of a modern Ukrainian pupil is 25–30% lower than health criteria. This is why additional employments in sports classes provide schoolchildren's motor activity level increase.

One of the directions implied in out-of-school learning system and helping to solve the aforesaid task is participation in tourist-ethnographic classes. Learning and development in such classes occur together with pupils' active assistance in the raw. This is the most efficient, applicable and the least expensive means of physical health improvement and development for children.

Tourism as a kind of active recreation suggests health improving effect, positively influences physical workability and provides person's physical qualities improvement. Tourism is mostly an outdoor activity and includes medium, regulated physical load, which gives a boost to cardiovascular system.

In works by different authors [5; 8; 10] there defined improvement in health among people who took up different forms of sport tourism, however a question of impact of regular employments in various kinds and forms of sport tourism onto children's physical health level is not still researched well enough, which determines urgency of this work.

Connection of the work to academic programs, plans, topics. The research is conducted in accordance with General research work plan in the field of physical education and sport for 2011–2015 on topic 3.7 «Theoretical-methodological basis for building a system of physical growth and development mass control and estimation in different social groups». State registration number 0111U000192.

Goal of the research is to define physical health level among 10-13 years old children who have been employed in sport tourism after the author «Sports Tourism Multiathlon».

Tasks of the research:

1. To complete literature analysis as for the health state among children and employments influence.
2. To define physical health level among children aged 10–13 who have been into sports tourism according to the author program «Sports Tourism Multiathlon».

Materials and methods of the research. The 10-13 years old pupils of Chuguev districr center of tourism, ethnography and excursions for youth took part in the research and were employed in tourism according to the author program «Sports Tourism Multiathlon» (18 boys, 15 girls) during a three years long period.

The starting research was conducted at the beginning of September 2010, which is at the beginning of children's employment in the group. All the following measures were taken at the end of 2010–2011, 2011–2012, 2012–2013 academic years at training on days off by midday.

The author program presupposes 216 hours a year: 2 classes every week, 3 hours each. The program includes general topics, orientation on location, organization and conducting of trips, general and special physical training and basics of tourist training which imply technical-tactic schooling in various kinds of tourism (on foot, on bike and by water).

To define physical health level among boys and girls participatory rapid appraisal is used, that is introduced in the work by S.D.Polyakov and others [7], for these we determined the following indices: body length and body mass, lung capacity, heart rate, arterial tension, timed inspiratory capacity, Rufie index – squatting 30 times in 45 seconds, quantity of body bending when lying with feet fixed without hands' help in 60 seconds. Using the aforesaid indices there were determined: Quetelet-2 index, Robinson index, Skibinsky index, Shapovalova index and Rufie index, that were evaluated in grades and after their sum schoolchildren's physical health level was defined. However, besides general estimation we took into consideration each single indices, which allowed to define "weak points" of children's organism.

Material of the research have undergone a statistical calculations, which included arithmetical mean, standard mean error, divergence possibility evaluation between the starting and the final indices according to Student t-test with respective level of importance.

Results of the research and the discussion. The research made at the beginning of experimental method implementation show mostly lower than the average level among boys (table 1).

Table 1

Physical health level among boys of 10-13, who are employed in tourism according to author program «Sports Tourism Multiathlon»

Indices		Years			
		10 (n=18)	**11 (n=18)**	**12 (n=18)**	**13 (n=18)**
Quetelet-2 index	kg/m^2	19,3±0,31	18,5±0,39	18,2±0,32	18,3±0,30
	grades	2,6±0,31	4,1±0,29	4,3±0,17	4,1±0,18
	Indices estimation	balanced (+)	balanced	balanced	balanced (–)
Robinson index	arb. units	91,1±1,37	84,6±0,67	80,7±0,52	79,1±0,37
	grades	3,0±0,00	3,0±0,00	3,1±0,06	3,6±0,12
	Indices estimation	average	average	average	higher than average
Skibinsky index	arb.units	660,3±41,85	1094,9±44,18	1551,7±55,07	2163,0±81,83
	grades	2,0±0,29	3,7±0,22	4,5±0,17	4,2±0,18
	Indices estimation	lower than average	higher than average	high	high
Shapovalova index	arb. units.	70,1±2,91	108,2±3,41	144,9±3,29	183,2±4,08
	grades	1,0±0,00	1,9±0,21	2,7±0,12	3,6 ±0,17
	Indices estimation	low	lower than average	average	higher than average
Rufie index	arb. units	15,0±0,39	13,3±0,40	11,7±0,27	10,7±0,16
	grades	2,3±0,12	2,6±0,15	3,1±0,16	2,9±0,10
	Indices estimation	lower than average	lower than average	average	average
General sum		10,9±0,42	15,4±0,54	17,7±0,30	18,4±0,32
General physical health level estimation		lower than average	average	average	average

Quetelet-2 index that characterizes physical growth and development level introduces indices for boys aged 10 in range of 18,1–19,9 kg/m^2, which stands for balanced constitution with a tendency to excess weight (see table 1).

Boys aged 11 and 12 who were employed in tourism according to the program «Sports Tourism Multiathlon», indices on Quetelet-2 index showed balanced constitution (18,0–20,0 kg/m^2), and boys aged 13 – balanced constitution with a tendency to weight deficit. In age periods of 10–11, 11–12 and 12–13 reliable changes in Quetelet-2 index indices were not defined ($p>0,05$), but during the whole period of experiment the changes in index level made up 1,0 kg/m^2 ($p<0,05$) (table 2).

Table 2

T-test matrix and possible levels (p) of changes reliability on indices of physical health level among boys of 10–13, who are employed in tourism according to author program «Sports Tourism Multiathlon» (n=18)

Group	11 y.o.	12 y.o.	13 y.o.
10 y.o.	1 – 1,61; p>0,05 2 – 4,26; p<0,001 3 – 7,14; p<0,001 4 – 8,50; p<0,001 5 – 3,04; p<0,01 6 – 6,58; p<0,001	1 – 2,47; p<0,05 2 – 7,10; p<0,001 3 – 12,89; p<0,001 4 – 17,03; p<0,001 5 – 6,96; p<0,001 6 – 13,17; p<0,001	1 – 2,32; p<0,05 2 – 8,46; p<0,001 3 – 16,35; p<0,001 4 – 22,57; p<0,001 5 – 10,20; p<0,001 6 – 14,20; p<0,001
11 y.o.		1 – 0,59; p>0,05 2 – 4,60; p<0,001 3 – 6,47; p<0,001 4 – 7,75; p<0,001 5 – 3,32; p<0,01 6 – 3,72; p<0,01	1 – 0,41; p>0,05 2 – 7,19; p<0,001 3 – 11,49; p<0,001 4 – 14,10; p<0,001 5 – 6,04; p<0,001 6 – 4,78; p<0,001
12 y.o.			1 – 0,23; p>0,05 2 – 2,51; p<0,05 3 – 6,20; p<0,001 4 – 7,31; p<0,001 5 – 3,19; p<0,01 6 – 1,60; p>0,05

Note. *1 – Quetelet-2 index; 2 – Robinson index; 3 – Skibinsky index; 4 – Shapovalova index; 5 Rufie index; 6 – physical health level.*

Robinson index indices, that introduce cardiovascular system and motor activity of the children, under the influence of tourism employment during every year of the experiment improved with various chance of reliability ($p<0,05$, 0,001). Boys aged 10-12 showed average results. During this period the indices improved by 10,4 arb. units ($t=7,10$; $p<0,001$) and boys aged 13 had indices higher than average, which testifies cardiovascular system state improvement.

According to Skibinsky index the functional capabilities of respiratory system is determined, also organism's resistance to hypoxia and will power. At the beginning of the experiment 10 years old boys had Skibinsky index indices lower that the average (660,3 arb. units), and after one year of employment made up 1094,9 arb.units ($t_{10,11}=7,14$; $p<0,001$), which stands for a grade higher than average. At the age of 12 boys' results improved by 456,8 arb. units and reached high level ($t_{11,12}=6,47$; $p<0,001$). The high level of Skibinsky index indices was observed at the end of experiment as well. During the experimental period in total changes in this indices made up 1502,7 arb. units ($t_{10,13}=16,35$; $p<0,001$).

The indices of Shapovalova index depend on strength, speed and spine and prelum abdominale muscles speed endurance development. At the beginning of the

experiment the boys showed low level of Shapovalova index indices (less than 97 arb. units) which suggests underdevelopment of the mentioned qualities. After the first year of the experiment boys' results reached lower than the average level (108,2 arb. units), having improved by 38,1 arb. units ($t_{10,11}$=8,50; p<0,001). During the following year they improved by another 36,7 arb. units ($t_{11,12}$=7,75; p<0,001) and reached the average level. By the end of the experiment boys' indices rised to higher than average level (183,2 arb. units). In total Shapovalova index indices improved by 113,1 arb. units ($t_{10,13}$=22,57; p<0,001).

Cardiovascular system reaction to physical load according to Rufie index among 10-11 years old boys made up a grade lower than average, among boys aged 12 and 13 the results were respectively average. The reliable changes were distinguished during all the experimental periods, and by the end they made up 4,3 arb. units ($t_{10,13}$=10,20; p<0,001) in relation to the starting ones.

General physical health level among boys at the beginning of the experiment was lower than the average, and after the very first year of experiment employment it rose by 4,5 grades ($t_{10,11}$=6,58; p<0,001) to the average and gradually was improving up till the end of the experiment ($t_{10,13}$=14,20; p<0,001).

Among girls employed in the author program during the three years Quetelet-2 index indices were of balanced constitution (table 3).

Table 3

Physical health level among girls of 10-13, who are employed in tourism according to author program «Sports Tourism Multiathlon»

Indices		**Years**			
		10 (n=15)	**11 (n=15)**	**12 (n=15)**	**13 (n=15)**
Quetelet-2 index	kg/m^2	17,9±0,30	18,4±0,37	18,9±0,29	19,2±0,33
	grades	3,9±0,34	4,1±0,33	4,7±0,19	4,3±0,19
	Indices estimation	balanced	balanced	balanced	balanced
Robinson index	arb. units	90,6±0,96	85,5±0,74	83,5±0,55	82,9±0,46
	grades	3,0±0,00	3,0±0,00	3,0±0,00	3,4±0,14
	Indices estimation	average	average	average	average
Skibinsky index	arb. units	549,3±22,90	901,6±29,19	1209,8±32,04	1421,2±28,29
	grades	2,0±0,14	3,1±0,14	4,2±0,15	4,6±0,14
	Indices estimation	lower than average	average	higher than average	high
Shapovalova index	arb. units	89,2±4,93	125,9±5,18	161,6±3,82	178,3±3,50
	grades	1,3±0,16	2,1±0,24	2,6±0,14	2,9 ±0,07
	Indices estimation	low	lower than average	average	average
Rufie index	arb. units	15,1±0,61	13,1±0,33	12,2±0,28	10,7±0,20
	grades	2,5±0,22	2,4±0,17	2,8±0,15	2,9±0,09
	Indices estimation	lower than average	lower than average	average	average
General sum		12,7±0,44	14,8±0,35	17,3±0,38	18,1±0,28
General physical health level estimation		lower than average	average	average	average

The reliable changes of Quetelet-2 index indices among girls were determined at the age of 10-12 ($t_{10,12}$=2,40; p<0,05) and during the whole experiment time ($t_{10,13}$=2,91; p<0,05) (table 4).

Table 4

T-test matrix and possible levels (p) of changes reliability on indices of physical health level among girls of 10-13, who are employed in tourism according to author program «Sports Tourism Multiathlon» (n=15)

Group	11 y.o.	12 y.o.	13 y.o.
10 y.o.	1 – 1,05; p>0,05 2 – 4,21; p<0,001 3 – 9,50; p<0,001 4 – 5,13; p<0,001 5 – 2,88; p<0,05 6 – 3,74; p<0,01	1 – 2,40; p<0,05 2 – 6,42; p<0,001 3 – 16,77; p<0,001 4 – 11,61; p<0,001 5 – 4,32; p<0,001 6 – 7,91; p<0,001	1 – 2,91; p<0,05 2 – 7,23; p<0,001 3 – 23,96; p<0,001 4 – 14,74; p<0,001 5 – 6,85; p<0,001 6 – 10,35; p<0,001
11 y.o.		1 – 1,06; p>0,05 2 – 2,17; p<0,05 3 – 7,11; p<0,001 4 – 5,55; p<0,001 5 – 2,08; p>0,05 6 – 4,84; p<0,001	1 – 1,61; p>0,05 2 – 2,98; p<0,01 3 – 12,78; p<0,001 4 – 8,38; p<0,001 5 – 6,22; p<0,001 6 – 7,36; p<0,001
12 y.o.			1 – 0,68; p>0,05 2 – 0,84; p>0,05 3 – 4,95; p<0,001 4 – 3,22; p<0,01 5 – 4,36; p<0,001 6 – 1,69; p>0,05

Note. *1 – Quetelet-2 index; 2 – Robinson index; 3 – Skibinsky index; 4 – Shapovalova index; 5 Rufie index; 6 – physical health level.*

Robinson index testifies that at the beginning of the experiment girls had relatively average indices, which means there is no cardiovascular system regulation disorders, however during the experiment a gradual improvement of indices could be observed. During the first year they improved by 5,1 arb. units ($t_{10,11}$=4,21; p<0,001), the second year – by 2,0 arb. units ($t_{10,11}$=2,17; p<0,05) and the third year – by 0,6 arb. units ($t_{10,11}$=0,84; p>0,05).

It should be also mentioned that the starting indices of Skibinsky index were lower than the average, but after each following year they improved and among girls aged 11 they reached the average ($t_{10,11}$=9,50; p<0,001), among girl aged 12 – higher than average ($t_{11,12}$=7,11; p<0,001), 13 years old – high level ($t_{12,13}$=4,95; p<0,001). After only three years of employment in tourism according the program «Sports Tourist Multiathlon» the indices rose by 871,9 arb. Units ($t_{10,13}$=23,96; p<0,001).

Also in the group of girls aged 10 a low level of Shapovalova index was determined (89,2 conv. u). After the first year of the experiment the indices improved by 36,7 arb. units ($t_{10,11}$=5,13; p<0,001) and reached lower than average level. During the following year the results rose to the average and maintained at the level till the end of the experiment (p<0,01–0,001).

Rufie index indices among girls aged 10 and 11 were at lower than average level. During the first two years they improved by 2,9 arb. units ($t_{10,12}$=4,32; p<0,001)

and at 12 reached the average. The indices maintained at this level till the end of the experiment.

In such a way, physical health level which at the start of the experiment among girls was respectively lower than average, during the first year rose by 2,1 arb. units ($t_{10,11}$=3,74; $p<0,01$) and reached the average. After the second year physical health level improved by 2,5 arb. units more ($t_{11,12}$=4,84; $p<0,001$), and during the whole period of the experiment this indices in girls' group improved by 5,4 arb. units ($t_{10,13}$=10,35; $p<0,001$).

Conclusions:

1. Employment of children aged 10-13 into experimental program «Sports Tourist Multiathlon» allowed to improve physical health indices during three years long period.
2. The results among boys reliable improved in indices:

– Quetelet-2 index (aged 11 by 0,8 kg/m^2 ($p>0,05$), aged 12 – by 1,1 kg/m^2 ($p<0,05$), aged 13 – by 1,0 kg/m^2 ($p<0,05$) in comparison to the start);

– Robinson index (aged 11 by 6,5 arb. units ($p<0,001$), aged 12 – by 10,4 arb. units ($p<0,001$), aged 13 – by 12,0 arb. units ($p<0,001$) in comparison to the start);

– Skibinsky index (aged 11 by 434,6 arb. units ($p<0,001$), aged 12 – by 891,4 arb. units ($p<0,001$), aged 13 – by 1502,7 arb. units ($p<0,001$) in comparison to the start);

– Shapovalova index (aged 11 by 38,1 arb. units ($p<0,001$), aged 12 – by 74,8 arb. units ($p<0,001$), aged 13 – by 113,1 arb. units ($p<0,001$) in comparison to the start);

– Rufie index (aged 11 by 1,7 arb. units ($p<0,001$), aged 12 – by 3,7 arb. units ($p<0,001$), aged 13 – by 4,3 arb. units ($p<0,001$) in comparison to the start);

– Physical health level (aged 11 by 4,5 grades ($p<0,001$), aged 12 – by 6,8 grades ($p<0,001$), aged 13 – by 7,5 grades ($p<0,001$) in comparison to the start).

3. The results among boys reliable improved in indices:

– Quetelet-2 index (aged 11 by 0,5 kg/m^2 ($p>0,05$), aged 12 – by 1,0 kg/m^2 ($p<0,05$), aged 13 – by 1,3 kg/m^2 ($p<0,01$) in comparison to the start);

– Robinson index (aged 11 by 5,1 arb. units ($p<0,001$), aged 12 – by 7,1 arb. units ($p<0,001$), aged 13 – by 7,7 arb. units ($p<0,001$) in comparison to the start);

– Skibinsky index (aged 11 by 352,3 arb. units ($p<0,001$), aged 12 – by 660,5 arb. units ($p<0,001$), aged 13 – by 871,9 arb. units ($p<0,001$) in comparison to the start);

– Shapovalova index (aged 11 by 36,7 arb. units ($p<0,001$), aged 12 – by 72,4 arb. units ($p<0,001$), aged 13 – by 89,1 arb. units ($p<0,001$) in comparison to the start);

– Rufie index (aged 11 by 2,0 arb. units ($p<0,05$), aged 12 – by 2,9 arb. units ($p<0,001$), aged 13 – by 4,4 arb. units ($p<0,001$) in comparison to the start);

– Physical health level (aged 11 by 2,1 grades ($p<0,01$), aged 12 – by 4,6 grades ($p<0,001$), aged 13 – by 5,4 grades ($p<0,001$) in comparison to the start).

The perspective of further research presupposes to conduct a comparative analysis of physical health level of the tourists who are employed in tourism according to oriented learning programs of tourism-ethnographic youth associations.

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COMPARATIVE ANALYSIS OF METHODS OF TRAINING AND DIETARY HABITS OF ATHLETES-BODYBUILDERS IN TRANSITION PERIOD

Abstract. ***Goal:*** *the substantiation of the training method and nutrition technique in the preparation of athletes-bodybuilders during the transition period, taking into account weight recovery of athletes after the competition period.* ***Material and Methods:*** *the characteristics of different methods of preparation of bodybuilders for recovering lean body mass. The comparative characteristic of exercise and nutrition techniques, which are most commonly used in bodybuilding.* ***Results:*** *the optimal training technique for athletes-bodybuilders, depending on the original form of sportsman in the beginning of transition period of training, are identified and grounded. The dependence of changing of the body weight of a sportsman on the amount of consumed carbohydrates, proteins and fats is given.* ***Conclusions:*** *the dynamics of the load according to the training method, proposed by the author, allows achieving the required degree of fitness level without overextension of adaptive-compensatory mechanisms, and daily diet provides the increasingspecific weight of muscle bulk, and not the total weight of the athlete.*

Keywords: *training technique, bodybuilding, carbohydrates, proteins, fats, microcycle.*

Introduction. Bodybuilding is one of the sports, where dietary habits determine the fitness level and the success rate of a sportsman. The nutrition of sportsmen during the transition period of preparation is of primary importance, because this exact stage implies the recovery of body functions for the further preparation in the next period [1; 4].

Nevertheless, there are still no scientifically grounded nutrition methods during the transition period in native sport. Therefore, the coaches and sportsmen have to gain practical experience by trial and error. The increased need of bodybuilders for scientifically grounded nutrition method during the transition period requires the study of the problem state and development of effective and recovering diets. During the transition period the sportsman try to consume as much vitamins and microelements as possible, use different herbal drinks on basis of such herbs as milk thistle, Indian kidney tea, motherwort, wild camomile, St.-John's-wort for body functions recovery (lever, kidneys, gastrointestinal tract, and for the reduction of risk of traumatizing [3; 12].

The transition period in bodybuilding lasts for 3–4 weeks, 3–4 micro cycles in other words. During this period, the sportsmen of different qualifications, age groups and all categories try to have as much rest after hard trainings as possible, so for this period the load is 50–60 per cent from the maximal one. In the end of every cycle, the coach evaluates the form of the sportsman and makes the corrections to the training process and nutrition schedule. The coach evaluates the peculiarities of somatotype of a sportsman (proportions, the number of gained kilograms, muscle sizes etc.). The sole weight of a sportsman acts as main preparation criterion [6; 7; 12; 16].

Thus, the scientific problem of systematic organization of trainings and nutrition of athletes-bodybuilders with maximal efficiency of training load arises. One of the main tasks for the solution of the described problem is the development of algorithmic of the training of athletes-bodybuilders during the transition period.

Such native physical culture and sports specialists as L. S. Dvorkin [5], A. I. Stetsenko [14], B. I. Sheyko [15], V. G. Oleshko [12], V. F. Pilipko, V. V. Ovsienko [13], G. P. Vinogradov [3], V. D. Zverev [9, 10]. However, the researches of training and nutrition methods for bodybuilders during the transition period for were conductedmainly by foreign research coaches. Therefore, Joe Weider recommends the twenty per cent increase of caloric value of a daily diet. The sportsman, following this approach, increases his weight by 2–3 kilograms every week. Ben Weider, the leading coach of professional division, recommends determining a metabolic rate of a sportsman during the preparation. If a sportsman has ahigh metabolic rate, then his poundage should be multiplied by twenty, if it is middle by fifteen and in case of low metabolic rate – by twelve. Thus, the calorific value of a daily diet during the initial stage of training is determined. Proceeding from the total calorie content, specific weight of main macronutrients is equal to fifty per cent of carbohydrates, thirty percent of protein and twenty per cent of fats. During the preparation period, the necessary transformation of calorific value is carried out, in accordance with training tasks, E. Konnors, T. Kimber, M. Mak-Kormik [11].

The connection of the research with scientific programs, plans and subjects. The scientific research was carried out on the subject 3.7. of Omnibus plan of scientific and research work in the field of physical culture and sports for 2011–2015 «Methodological and organizational-methodical foundations of the determining the individual norm of physical fitness of a person (the number of state registration is 0111U000192).

The goal of the research: the grounding of training and nutrition method during the preparation of athletes-bodybuilders in the transition period, taking into account weight recovery of a sportsman after the competition period.

The material and methods of the research. The members of national team of Kharkiv region in bodybuilding participated in the present research. The eight bodybuilders aged from 18 to 38 years were involved in the experiment; among them are 2 masters of sports (MS), 4 candidates masters of sports (CMS) and 2 sportsmen of the first category; the weight of the sportsmen is 75±2–121±2 kg. The participants were divided into two groups – EG1 and EG2, 4 sportsmen of equal sports

qualification in each group (1 MS, 2 CMS and 1 of first category). The participants of the experiment were training 3 times a week.

The usage of nutrition as a constituent part of preparation determined the application of two variants of daily diet, which differed in the proportion of main nutrients (proteins, fats and carbohydrates). The preparation efficiency was evaluated with a help of experts evaluation method, which considered the information about fulfilment of coach instructions, the dynamics of power and endurance indicators, and subjective qualities (state of health, mood, wish for training etc.).

The sportsmen of EG1 were training during 4 weeks with medium percentage weight and the dynamics of training that is more energetic, using high-carbohydrate and low-protein diet; the sportsmen of EG2 were training in smooth dynamics with a focus on static muscular load with low percentage weight, using high-percentage protein content and small amount of carbohydrates. The amount of fats in the daily diets of both groups remained identical and was equal to 10–20 per cent depending on micro cycle.

The analyzer of body weight (the scales TANITA BC-545, the producer – Japan) was used for carrying out the weigh-in. Based onsummarized indicators,the analyzer of body weight calculates the weight of a sportsman in kilograms.

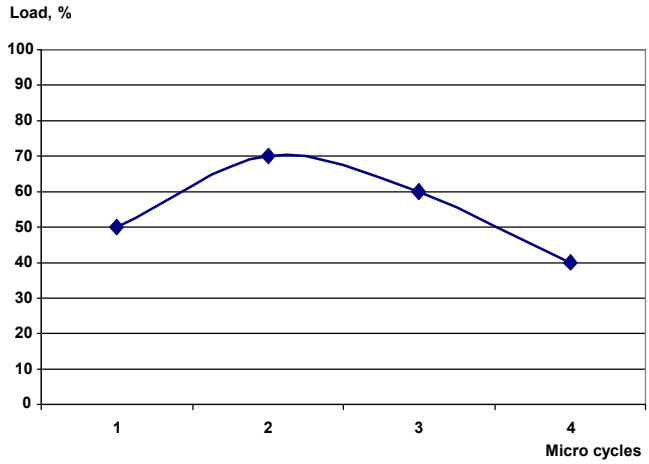
The research results and its discussion. The testing weigh-in of both groups was carried out before the beginning and in the end of the experiment (Table 1).

gTable 1

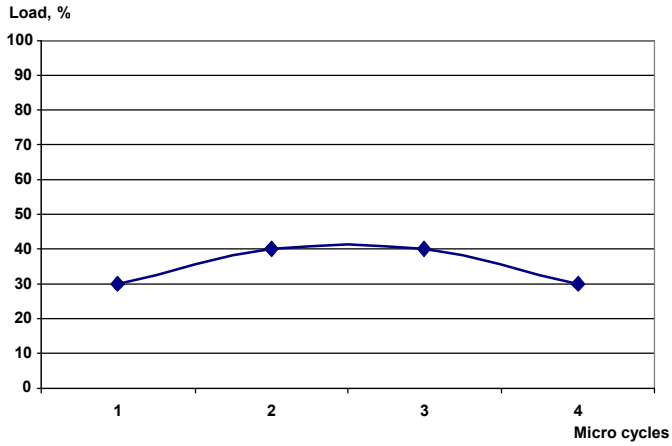
The comparison of the weight of athletes-bodybuilders in the beginning and in the end of the transition period (n_1=n_2=4)

The participants of the experiment	The category	The weight in the beginning of transition period, kg	The weight in the end of transition period, kg	The increase of body weight during the transition period, kg
EG1				
1	MS	85	105	20
2	CMS	90	108	18
3	CMS	100	121	21
4	1st category	75	90	15
EG2				
1	MS	80	87	7
2	CMS	100	108	8
3	CMS	90	95	5
4	1st category	95	105	10

The peculiarity of the training method of the sportsmen of the group EG1 (ref. Fig.1, a) is quite sharp fluctuations in load: from 50 to 70 per cent in the middle of the transition period and from 70 to 30 per cent in the end of the period.



a



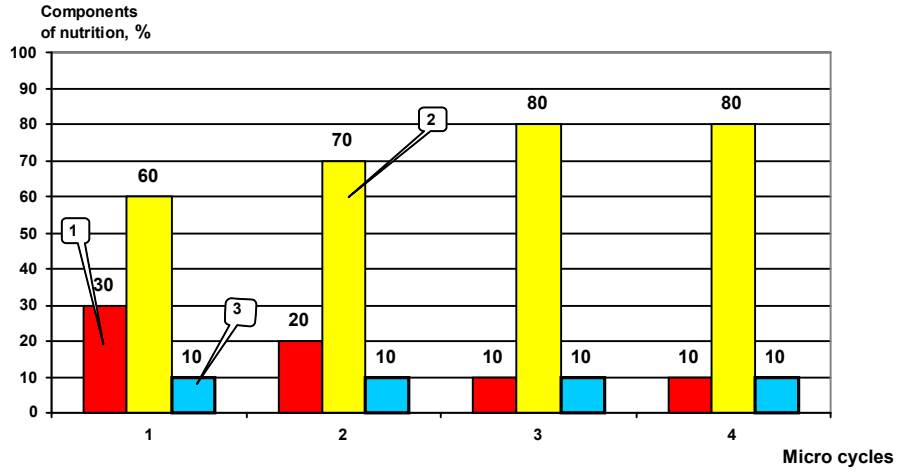
b

Fig. 1. The dynamics of the load in per cent age terms from maximum during four cycles for the sportsmen of:
A – EG1, b – EG2

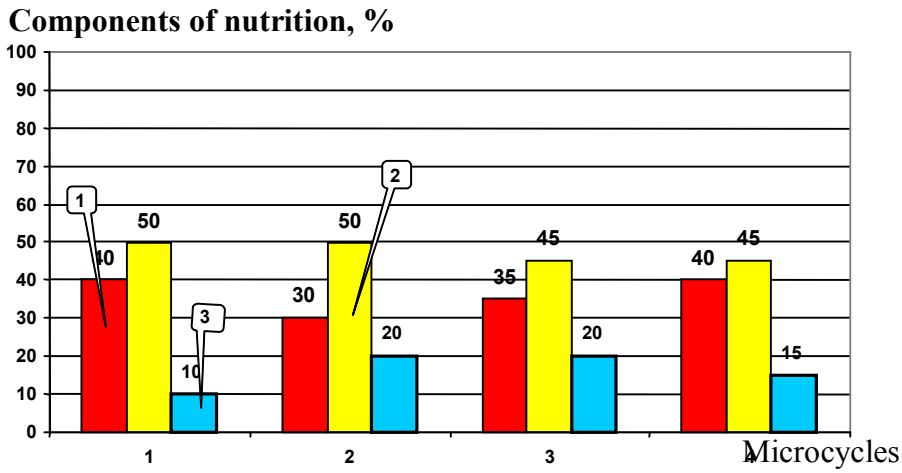
The dynamics of the load of bodybuilders of EG1 (ref. Fig. 1, b) differed fundamentally from the above mentioned (Fig. 1a). It is characterized by almost the identical, maximal loads (30–40–30%), which change smoothly and gradually. The practically missing fluctuations in dynamics of the load allows the stabilization of preparation, besides, the need for reducing load in micro cycles no longer arises. The important moment of preparation is the fact that specific weight of static loads increase gradually, and it enables the prevention of overexertion and overtraining.

T

he amount of the consumption of main nutrients by sportsmen of EG 1 and EG2 was different. As for the daily diet of sportsmen of EG 1 (Fig. 2a), the considerable fluctuations of the specific weight of proteins (P), fats (F) and carbohydrates (C) were observed during base period.



a



b

Fig. 2. The amount of nutrients, carbohydrates, fats in daily diet of sportsmen in dependence of the micro cycle (the week of preparation) (1 – proteins; 2 – carbohydrates, 3 – fats): a – EG1; b – EG2

The first part of the period is characterized by the expressed shift towards carbohydrates (60–70%), in the second part this disproportion is still increasing, that is determined by the need for body weight gain at the expense of carbohydrates, and specific weight of carbohydrates in it is equal to 80%.

Such position should be acknowledged as the testing of the strength of metabolism, the increase in load on leaver and gastrointestinal tract. Therefore, in the remaining period, a single way is the rebalancing of P, F and C, as in the rational nutrition (1:1:4). On the one hand, it is the protective measure for the prevention of unfavorable disorders in the organism, and, on the other hand, it deteriorates the state of the competition form of sportsmen at the expense of the increase in the rate of muscle bulk gain.

The disadvantages of the method, used in the training process of the group EG1, include fast increase in body weight of sportsmen (ref. Table 1), that has a negative impact on the muscle strength and mobility of an athlete-bodybuilder, and, besides, holds back the muscle development.

In the group EG2, the daily diet had the expressed protein orientation during all the preparation period; the specific weight of this nutrient was equal to 40% in the first and fourth micro cycles, 30% – in the second cycle, and 35% – in the third one (ref. Fig. 2, b). In our view, it made the most efficient contribution to the increase in muscle bulk (ref. Table 1), besides, it reduced the intensity of metabolism at the expense of gradual adaptation of organism to the high consumption of protein to a certain extent. However, such formation of a daily diet makes steep demands for the recreative period, when the gradual changes in the daily diet should be aimed at the return of major organs and body systems action to the customary regime.

Conclusions:

1. The comparative analysis of training methods and peculiarities of the nutrition of sportsmen has shown that the training method with smooth dynamics of increasing loads with a focus on static muscular load and with the use of high-protein diet and insignificant amount of carbohydrates guarantees high training effect.

2. The dynamics of load according to the training method, proposed by the author, allows achieving the required degree of fitness level without overextension of adaptive-compensatory mechanisms, and daily diet provides the increasing specific weight of muscle bulk, and not the total weight of the athlete.

The further researches should contain the grounding and the development of new method, intended for the muscle bulk gain in the base period, liquidation of metabolic imbalance, which occurs in consequence of the usage of the nutrition of specialized orientation for the muscle bulk gain.

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SPORTIZATION OF NON-OLYMPIC SPORT AS SOCIAL AND CULTURAL PHENOMENON

Abstract. ***Purpose:*** *to determine the sense of non-Olympic sport as social and cultural phenomenon.* ***Results:*** *viewed the peculiarities of sportization and their characteristic features in the range of non-Olympic sport which cover sport activity and is directed to personal culture formation.* ***Conclusions:*** *sportization of non-Olympic sport is grounded on hierarchy of management system, normative and law basis, law institution of conflict solving, sport technologies, sport preparation for the competitions and competitions themselves, judge institution, scientific and research basis, informational net and passive sport participants (spectators, volunteers, animators, coordinators, technical workers etc.)*

Key words: *sportization, non-Olympic sport, social and cultural phenomenon.*

Introduction. Non-Olympic sport is a social branch, which represents a unity of branches, industries, organizations, directly connected and determined by person's life style and level, one's wealth and using the field as service industry in education, culture, leisure, sport, physical recreation, physical rehabilitation and professional training. At the end of the XX beginning of the XXI century non-Olympic sport is gradually taking a significant place as socio-cultural factor and is becoming its phenomenon.

Sportization is characterized by active resorting to sport activity, sport technologies, competitions and sport elements with a goal of forming culture of a person [9]. It should be mentioned that forming culture of a person alone is not all. Our opinion is that sportization is an element of sport culture, acknowledgement of inclinations, preferences and needs in doing sports, psycho-physical readiness, sport selection of gifted people, training sport reserves, individual reserve functional capabilities realization. L. I. Lubysheva suggests that sportization also influences the forming of sport-oriented personality, motivation and interest in physical training and sport.

Sportization during the last decade is intensively applied school curriculum system [2; 3; 8–12; 14] and in higher educational establishments of different level of accreditation [6; 13; 15].

Relation of the work with academic programs, plans, topics. The work has been conducted in accordance with topic: 2.6 «Theoretical-methodical basis of improving training process and competitive activity in the structure of long-term training of sportsmen» General research work plan in the field of physical education

and sports in 2011–2015 and research direction of Olympic and professional sports department of Dnipropetrovsk state institute of physical education and sports on topic «Historical, organizing, legal aspects and theoretical-methodical basis of non-Olympic sport in Ukraine and in the world».

Goals of the research: to define the main aspects of sportization of non-Olympic sport as socio-cultural factor.

Materials and methods of the research: scientific-methodological literature and documentaries (domestic and foreign) analysis, system and logical (analysis, synthesis, induction, deduction, comparison, grouping) analysis.

Results of the research and the discussion. Non-Olympic sport is a socio-cultural factor because: first of all, it carries out social functions relating to forming cultural, educational, labor, ethic and esthetic values etc. (such as socialization, education, humanism, health improving and recreation culture, industry, performance, information, economy, prestige, social integration, communication, social emotional function, integration, training, preparation, application, forecast, competition standardization, heuristic achievements); secondly, influences sport values, personal relations, sport functioning, sport conditions, personal integration, sport outlook etc.; thirdly, a product of moral, ethic, creative importance and needs of people, forming moral and will, physical, intellectual features of a person with an aim of producing a balanced individual.

By means of analysis it is determined that not only Olympic and professional sport are specified by sportization, but also non-Olympic one, as sport spectrum. Sportization of non-Olympic sport has two positions: at individual's personal level and at level of social value. However both positions are aimed, in the first place, to sport achievement and acknowledgement of one's status in accordance with international level.

Taking the aforesaid into consideration sportization of non-Olympic sport as a socio-cultural factor corresponds to:

1. The hierarchy of social organizations as a control system:

– local-city and regional federations, physical education and sport administration at city and regional levels;

– national – national sport federations, sport committees, sport departments, social sport organizations and ministries [3];

– continental – sport federations of Europe, Asia, Africa, America, Territories of Oceania;

– international – International sport federations, «Sportaccord» Association, Association of sport federations acknowledged by International sport committee International association of World games, International association of intellectual sport, International military sport union etc.

2. Normative legal basis as normative documents that regulate:

– activity and development of social organizations (constitution – international sport social organizations, mentioned above; statutes – sport federations);

– holding sport competitions – rules that are considered and accepted at federation session;

– conducting anti-stimulant control – anti-stimulant code.

3. Competition system in accordance with:

– holding level – local, regional, national, international as Championships, Cups, Games, Matches etc.;

– geographical territory features – continental, regional;

– participants age groups – junior, youth, student, veteran;

– peculiarities of financing – state, commercial, professional;

– programs – according to kinds of sport and complex as National, Continental and World games;

– specification – individual, team, individual-team;

– religious creed – special, universal;

– period of holding – temporary (match meetings), permanent (Championships, Cups, Games).

4. Refereeing institute at level of sport federations and social sport organizations or associations – regional, national, continental, international.

5. Specific sport kits and equipment, its improvement in accordance with competitions organization and holding system improvement, complicating competitive programs, acknowledging new kinds of sport.

6. Specific preparation, which is stipulated by modern sportsmen training system for competitive activity in form of training considering additional non-training and non-competitive factors.

7. Achieving the best results, wins, establishing records on the basis of maximum realization of possibilities of the sportsmen and comparing their preparedness level.

8. The order of giving sport ranks and sport titles in accordance with Unified sport classification [5].

9. Counting the results as a rating of sportsmen and teams in accordance with the scale of rating system of sport federations.

10. Corresponding to the basic regulations of anti-stimulant code.

11. Informative network that supplies with informative news on television and radio, television broadcasts, magazines, news papers and internet sites.

12. Legal institute for solving different conflicts of private matter (technical, administrative, discipline, economical, inter-organizational conflicts), that occur in sport process of higher achievements as the first and the last instance (from International sport arbitrary court to arbitrary institutes of national sport organizations), as well as legal counseling in the main problems of sport activities [1; 6; 16].

13. Formation of scientific research institutes, conducting scientific studies in different directions of sport science at socio-philosophic, medical-biological, management and organization aspects levels, that provides efficiency of scientific medical, medical support and people ware.

14. Passive participants who take part in sports events providing sportsmen's support, material-sport base preparation, leisure management during the competitions etc. (fans, animators, organizers, technical workers etc.).

Conclusions:

1. Non-Olympic sport is socio-cultural factor that influences on development of a state and personality. At level of active individual to motor activity and healthy life style, realization of personal physical, psychological and functional capabilities and ambitions with the aim of achieving the highest sport results. At level of a passive individual that perceives non-Olympic sport as part of sport and influences its development.

2. Sportization is characterized by sport activity which is oriented on achieving maximum sport results and includes the hierarchy of managing, standard legal basis, legal institute of solving conflicts, sport technologies, sport preparation for the competitions and competitions themselves, refereeing institute, scientific research base, information network and passive participants of sport.

The perspective of further research is defining the spectrum of sports and directions of non-Olympic sport as socio-cultural factor, their division into components and elements according to particular features and possibilities, generalization of some similar features into one group, studying features from separate to general, from general to separate, from consequences to reasons.

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THE FEATURES OF FORMATION THE GENERAL PHYSICAL-RECREATION EDUCATION OF STUDENTS IN THE CONDITIONS OF HEALTH PRESERVING STUDY

Abstract. ***Purpose:*** *the features of forming of universal athletic education of students are grounded in the conditions of health preserving studies.* ***Material:*** *participants in forming and controlling phases pedagogical experiment was 186 people. Overall, participants in the experimental work was 1018 persons. The analysis of the presently existent system of universal athletic education is carried out in higher educational establishments of different professional direction.* ***Results:*** *possibilities of forming of saving health competence of students are described during physical education. Rich in content essence of accrued of pedagogical saving health technology of studies of students is exposed, structural elements are selected. The analysis of introduction in the process of physical education of author pedagogical health preserving technology of studies of students is given.* ***Conclusions:*** *the conducted experiment allows to draw conclusion about expedience of the use of afore-mentioned pedagogical technology in the process of physical education of students.*

Keywords: *saving health training, general physical and health education students in higher education.*

The introduction. Currently, the sphere of physical culture increasingly becomes the need of all Ukrainian society. In that case, the question is the satisfaction of the needs of society for its main wealth – the human health. Such goals have a strategic character and require new principal approaches to the management system, at the national level in particular. Primarily, it concerns the development of two main types, or components at the macro level. These components have a significant difference in their purposes – health and fitness activity and high performance sport. Moreover, if the high performance sport is under state protection, then mass physical culture, unprofessional health and fitness education of students fall behind.

At the same time, considering the problem of physical improvement of students, not only their physical health, but also the spiritual one, we create prerequisites for the intensification of the physical culture significance during the process of the formation of moral and spiritual values of human society by means of including in health-saving training process new powerful factors of deliberate harmonization of individual development of a person on basis of unification, emphasizing the most necessary knowledge about laws of this development [1; 2].

When giving the critical evaluation of today's realias, it is necessary to state that the process of systemic social changes gave rise to severe crisis of many sides of life of our society, including the sphere of physical and spiritual human health. Currently, the increasing tendency to physical and spiritual degradation of the population of Ukraine is observed. It can be clearly observed by the example of young generation, which will have to undertake all the difficulties of public and industrial activities. The ill health of young generation cause great anxiety: the existence of chronic pathology, hereditary diseases, weak protection of immune system etc.

If the professional education requires the development of our professional level with the aim of career advancement and wage increase, then unprofessional health and fitness education determines how far we can save our health. The involvement of students in health-saving process is important and necessary event, and this refers to their conscious participation in this process, because our organism starts signalizing about the problems, when the significant disorder already take place, and, as a result, the diseases appear [3; 5].

The above-mentioned facts require the immediate development of new methods and technologies of health-saving education, because the motion activity of young students is the factor that influences positively all life support systems and, besides, is the most efficient disease prevention method.

The well-known modern scientists, such as D. Davidenko, O. Dubogay, L. Apanasenko and others, conducted the researches, considering the mechanisms of formation of conscious attitude to the vital activity by means of genetic research of interrelations between the human activity and its consciousness.

The issue of the general human activity theory is covered in the scientific works of I. Pavlov, I. Sechenov and G. Kostuk; the scientific papers of I. Zyazun, O. Padalka, O. Pechota and A. Nisimchuk are dedicated to the solving of the problems of modern education modernization. The methods of educational activity improvement, including the improvement methods of psychological and pedagogical effects are revealed in the publications of V. Molyako, V. Davidov, D. Masoch, and V. Bezpalko. The researches of O. Dubogay, O. Timoshenko, E. Vilchkovskiy, D. Davidenko, E. Pristupa, M. Noska, T. Krutsevich, and B. Shiyan are dedicated to the health-solving matters on basis of theory and methodics of physical culture. Reasoning from the above-mentioned points, exist a great number of researches, dedicated to the problems of creation and implementation of new health-improving technologies in the educational system, however, the most of them focus only on separate matters.

The connection of the research with scientific programs, plans and subjects. The research work has been carried out in the direction of the implementation of Ukrainian laws «On Higher Education», «On Physical culture and Sports», National Doctrine of Education Development, Target comprehensive program «Physical education is the health of nation». The research has been conducted according to the research plan of the National Pedagogical Dragomanov University «The content, forms, methods and means of professional training of

teachers». The materials of the research entered as the component part of the subject of research work of the Department of Art Theory and History «The individual in modern society: phylosophical-culturological analysis» (the state registration number is 0110U003155) of the Department of Philosophy of Ivan Franko National University of Lviv.

The goal and tasks of the research. The grounding of the peculiarities of the formation of general health and fitness education of students under the conditions of health-saving education.

To achieve the stated goal the following tasks were solved:

- to carry out the analysis of present system of physical culture education at the institutions of higher education of different professional orientation;
- to characterize the possibilities of formation of health-saving competency of students during physical education;
- to find out the essence of new pedagogical technology of the education of students and single out its structural elements.

The materials and methods of the research. The pedagogical experiment in the adoption of health-saving pedagogical technology of education has been continuing for three years. The Lviv, Cherkassy and Kharkiv Institutes of the University of Banking of the National Bank of Ukraine (Kyiv) served as the experimental base. The number of participants of the formation and control stage of the pedagogical experiment was equal to 186 individuals. The theoretical, empirical and statistical methods of the research were used.

The research results and its discussion. The achievement of the main goal of the higher education institution of any type – the educational one – belongs also to modern methods of the teaching of the discipline «Physical education», that is the creation, adoption and practical usage of health-saving pedagogical technologies of education, considering the scientific researches in the field of physical culture and sports, and special pedagogics.

The main keepers of the formation of health and fitness education of young students are the institutions of higher education. The teachers of physical education departments carry out the mission of intensification and improvement of health-saving education, and formation of unprofessional health and fitness education of students [7; 8].

The view that the discipline «Physical education» as the pedagogical process is aimed at the improvement of functional capabilities of organism of students, and focused on the formation of knowledge and skills of holding the health-saving activities through the whole life, should be assumed as the basis of the modern conception of the development of general health and fitness education system [4; 6].The most distinctive feature of this conception is a shift of emphasis toward the educational and health-improvement orientation of its content as the determinative condition of the improvement of the quality of general health and fitness education, the achievement of physical culture education with the help of physical culture means in order to form the conscious need for physical self-improvement [9; 11].

The need for the implementation of such changes indicates that the pedagogical health-saving educational technology, the structural elements of which point out the ways of the organization of the process of physical culture knowledge formation, became basis of the health-saving education process. As for the content, only interdisciplinary, integrative character of the specially made study course is able to provide the increasing level of physical culture education, professional psychophysical readiness for the future activity.

During the process of health-saving education, it is necessary to provide the formation of not only main psychophysical qualities, but also certain applied (considering the influence of work activities on morpho-functional changes, happening in the organism of students) theoretical and methodical knowledge and skills, which are able to help in the adaptation to the peculiarities of professional activity and environmental effects.

The operating curriculum of the discipline «Physical education» has a conceptual, recommended character, which orients the teachers to unassisted search of optimal forms, means, methods of physical culture, the development of optimal content of this discipline. The curriculum suggests, together with practical exercises, mastering of theoretic, methodic and practical sections, which are aimed at the formation of health-saving thinking and world outlook.

Nevertheless, in the real practice of the institutions of higher education of different professional orientation it is quite difficult to realize completely the goals of the theoretical and methodic sections of the program. On the one hand, a lot of time is needed for mastering these sections of the program. On the other hand, it is not rational to waste the time not for the physical exercises. As we can see, the necessity for the enhancement of theoretical and methodical level of students, the need for the improvement of physical actions and the development of physical qualities cause the contradiction, which can be solved only on condition of the development of innovative health-saving methods of education and their adoption into the system of physical education [12].

Today it is highly important, firstly, to identify the quantitative relation between fundamental knowledge and sportivization of the process of physical education, and, secondly, to determine the main content of fundamental physical culture and fitness knowledge. After all, it is known that the main component of health-saving education is its content and present physical education curriculums and standards for the evaluation of physical fitness of the students are available only for one third of students [10].

The fundamentality, orientation to the satisfying the interests of the individual and integrity of all the system of general health and fitness education argue the summarizing of all proposed innovations in methodological, theoretical and practical aspects.

The developed health-saving technology summarizes into the certain system not only the usage of means of physical culture, but also the process of the improvement of psychophysical potential through the formation of believes in the necessity for the constant physical self-improvement. The structural elements of pedagogical health-saving technology, created on basis of the fundamentalization of health and fitness education, are represented in the Figure.

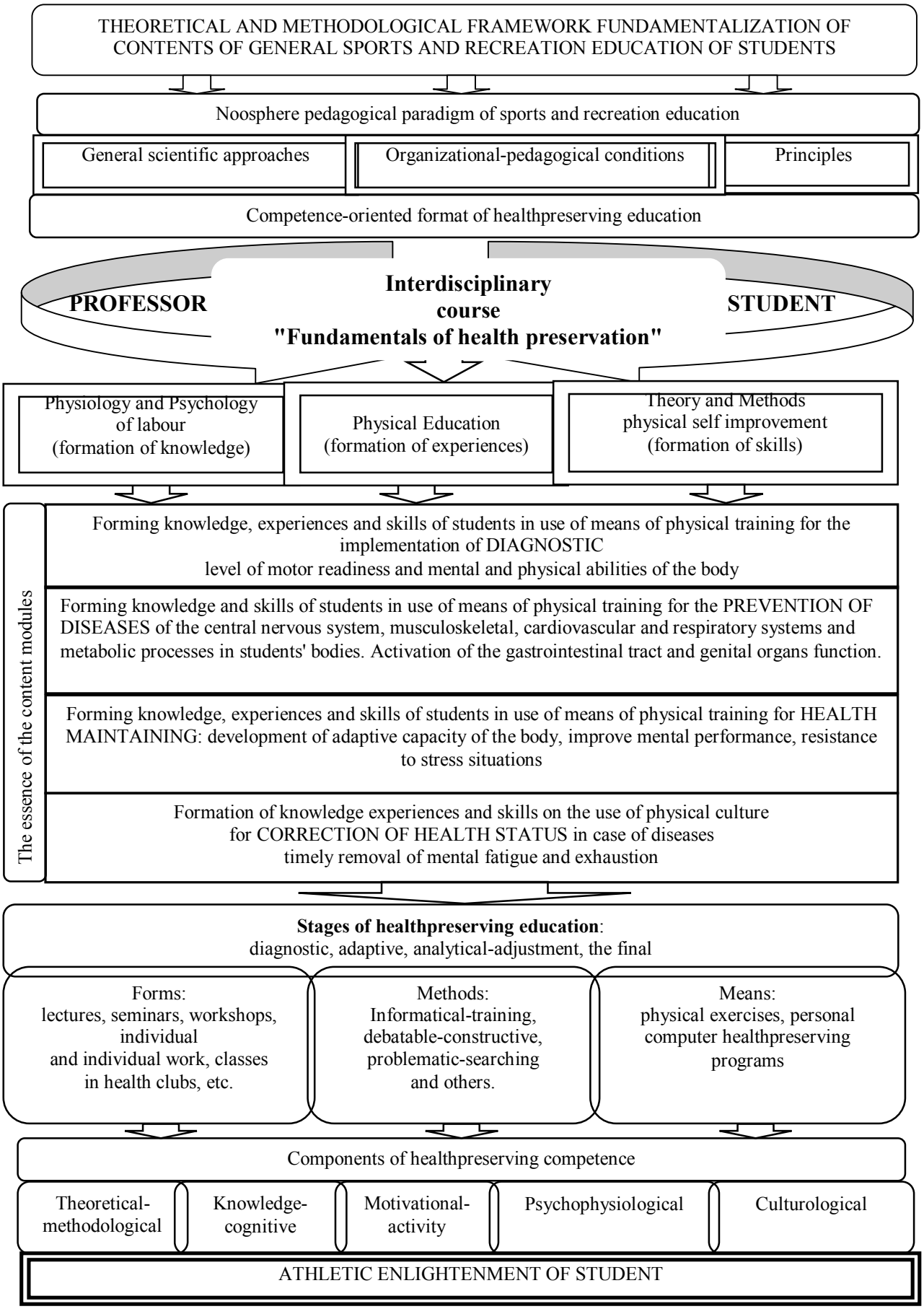

Fig. Structural elements of healthpreserving pedagogical technology of students' education *

** – author's in-house development*

We believe that sport orientation process healthpreserving training should begin only after the development of the student basic knowledge and skills. And not just for those students who have the appropriate skills and inclinations. During training, the student can not cover the entire horizon of science that form health preserving outlook and practical training in physical education that are scientifically proven not able to form beliefs and to teach the young man deliberately, responsibly towards their health [5].

We offer integrative educational technology healthpreserving training is actually four-component structured scheme and reflects genetic inclinations; health status, level of physical characteristics, physiological characteristics of the individual and specific professional activities graduate.

The first component reflects the level of memory, will, emotions, thinking and other universal properties.

The second component – a person's health, appearance, physical condition, perfect motor skills, physical development and physical preparedness, weight, height, which forms the relation of man to himself, satisfaction or dissatisfaction with his own body.

The third component reflects socially oriented traits: ethical principles and beliefs, life values, attitudes and orientation to the basic principles of a healthy lifestyle.

The fourth component displays individual and unique characteristics: temperament, character, perception themselves, manner of behavior and communication.

Moreover, some of these traits a person receives at the genetic level, others – instilled family and social upbringing, undergo change and development in the professional activity. It should be noted that all these components are not permanent, they can be influenced, they can be improved and changed, and pedagogical influences make them dynamic.

The dynamic nature of that technology transforms the process of health preserving in constant and continuous need to expand horizons and knowledge of students, development of their aesthetic tastes, knowledge of ethical standards. This performance, which is influenced to some extent determine the healthy way of life, habits, attitude to your health. From these properties, in our opinion, depends on the system of professional values and professional functions, as forming a plurality of professional merit depends on the health, habits, ability to manage their health, lifestyle, etc.

Thus, it is possible to improve the practice of physical education not only this day, but it is possible to introduce a predictable health preserving practice of teaching students of tomorrow. Because today we need graduates who have appropriate internal resources to preserve their health. Instead of graduates, who with means of physical culture forcibly was improved physical preparedness, come students who care about his own health and is able to use measures of health preserving, able to manage his health and on the basis of this – highly developed physical qualities and abilities.

A person is able to take responsibility for his own health and lifestyle, will be more self-confident, demanding to himself. With its ability to maintain the level of their own health, preventive abilities will graduate next-generation creative approach to their professional duties to become more proactive, determined, organized, which directly will affect the culture and quality of work. And the experience of practical sports and recreational activities is the highest value of health preserving system.

Physical training education – a coherent set of knowledge, skills, psychological characteristics (qualities), belief in the necessity of maintaining a healthy lifestyle, recreation and rehabilitation positions, acmeological invariants. Current graduate student must be able not only to creatively use information relating to healthp reserving, but also independently to do the diagnosis in difficult and unexpected situations, set goals and find ways and means to support their own health [11; 12].

The basis of the newly established pedagogical technology of training is created by us an interdisciplinary, course "Fundamentals of health preserving", whose meaning is not simply improves physical preparedness, and forms at student competence to health preserving. Admittedly, this course is an active educational factor in the implementation of educational content developed by us health preserving technology education of students. Cardinal issue of Physical Education, thus, is the role and place of the individual in technology of health preserving training.

Teaching this course has created new relationships and innovative processes in the content of teaching health preserving technology education of students, as a scientific concept has an open horizon of meanings and senses of work. It involves paradigmatic and methodological shift in sports and recreation education as an open process without any restrictions for the student. In our opinion, no need to sharply distinguish between "perception process" and "research process" (as is often done in physical education). Because perceive – means ponder. This work of thinking is meaningfully organized arrangement of material and display it in the health preserving training. On the other hand, the process of "feeling – perception" is being thought about before they turn into health preserving activities. Control of knowledge and skills in this case is a learning process, not its consequence and is not limited to drafting classification standards. Newly created methodology training system provides control whether the student has learned the forms and methods by which it can improve the physical condition in the future if it is able to prevent occupational disease, to plan recreational activities and leisure, to conduct rehabilitation if necessary, and so on.

Physical education, training health preserving if using the newly created pedagogical technology of education students become the integral process of sports and recreation education space. The leading role is certainly given to teaching of that content is appropriate for the conditions of present. With this technology training you manage to form a new type health preserving competence of students and a culture of health is converted to continuous psychological and pedagogical process.

Conclusions:

1. Changes suggested by us in the system and the content of physical culture education are closely related to the new demands that society imposes to university

graduates. All health preserving educational process in the system of physical training designed by us in such a way that it will never stop and that the students arose a continuing need for its consideration. Young people who have completed education should understand that the process of health preserving is constant.

2. Established on the basis of fundamentalization of sports and recreation education pedagogical technology health preserving education is interdisciplinary, integrative, comprehensive, fundamental structure and content. Education in this case is carried in the socialization process health preserving training and provides the solution of priory task – formation of health preserving competence of students, the level of formation which determines the effective conduct of their culture in order to preserve their health. This approach leads to constant updating of sports and recreation education and ensure its leading character.

3. Pedagogical technology training health preserving offered by us which is created on the basis of fundamentalization of sports and recreation education should be viewed as a structured innovation with a focus on the formation of health preserving competence of students, their deep knowledge, not only for the formation of physical properties, such as the era of narrow approaches ended.

Further study require methodological and organizational aspects of health preserving training of students in higher education, the ratio of knowledge, experiences and skills that should be used in physical education of students to create competencies and competencies of health preserving; mechanisms of capacity for independent use of physical culture in order to lead a healthy lifestyle by students in the future.

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THE ASPECT OF PHYSICAL EDUCATION INFLUENCE ON HEALTH OF STUDENTS WITH SPINE OSTEOCHONDROSIS

Abstract. ***Purpose:*** *to describe the main aspects of physical education influence on health and general physical conditioning and rehabilitation of students with osteochondrosis.* ***Material:*** *over 20 scientific sources were considered and explored.* ***Results:*** *the problem of «rejuvenation» of osteochondrosis, incessant increase of number of students with displays of illness, the reasons of occurrence of osteochondrosis among students were introduced. The modern views concerning using health improving physical education within learning process were analyzed to improve physical condition and rehabilitate students with displays of osteochondrosis.* ***Conclusions:*** *the efficiency of application of special physical exercises system, swimming, mechanic therapeutic vehicles to prevent osteochondrosis and in overcoming of already existent pain syndrome among students from special medical group was substantiated.*

Keywords: *physical rehabilitation, osteochondrosis, health improving physical education, mechanic therapy.*

Introduction. In recent years the number of people ill in osteochondrosis is constantly increasing. Today 40 to 80% of people in the world are suffering osteochondrosis [3; 12]. The pain a patient comes through during the illness causes temporary inoperativeness, which puts emphasis on social role of the problem. In the structure of the diseases which cause temporary inoperativeness this one, according to the quantity of days off work, it invariably stands for the second place after acute respiratory diseases [18].

A characteristic feature is not only the growing number of ill people every year, but also an increase in frequency of this disease diagnosis among patients of young age [1; 8; 12]. As for an abrupt «rejuvenation» of osteochondrosis within the last decades testifies also that the its initial stage comes out in teenage years already [18].

There about ten theories and hypotheses explaining the reasons of developing osteochondrosis. These include infectious, rheumatoid, endocrine, metabolic theories [19]. Today it is proved that in the development of osteochondrosis a big role is given to autoimmune processes [9]. Some authors suggest such reasons as biochemical disorders in intervertebral disks. Others see the cause in vertebral blood supply, based on atherosclerosis. The majority of authors consider the idea of merging all the existing theories and call the disease pluricausal, meaning one that has a range of causes and factors of its occurrence [18].

However there is an unquestionable fact that modern young person's life style is characterized by lack of motor activity or hypodynamia. Among all the muscle groups a stable pressure is given only to muscles of the torso and neck, which with its small but continuous static tension maintain working, casual, generally «sitting» positions. As the tiredness is growing in torso and neck muscles they are incapable of conducting amortization function and it is laid onto spine structure then, and first of all, onto intervertebral disks [19]. When a person is in standing position the intervertebral disks of the spine stock carry out the pressure which is approximately same as body mass. When a person is in a sitting position, with one's spine held straight, the pressure on intervertebral disks increases, mainly because of leveling the lumbar lordosis. When a person is in sitting position, with one's spine inclined forward, the scale arm of weight strength of the upper part of the body which is accompanied by increasing compression of muscle traction on intervertebral disks. In the position with inclination it should also be mentioned besides the aforesaid that muscle traction strength is added to maintain the balance at small bearing area (feet). Grounding on previously said, it can be defined that maintaining a typical position of modern person is causing considerable pressure on spine by itself [5; 18]. In such conditions mostly suffer intervertebral disks, which normally carry, first of all, hydraulic amortization function [5; 11]. Degenerative dystrophic changes are developing into osteochondrosis [11; 20].

Most often lower lumbar and lower neck intervertebral disks suffer [1; 3]. The disk is constituted by a fibrous ring with a tremulous nucleus in its center and by upper and lower cartilaginous plates and normally carries amortization function. When developing osteochondrosis the tremulous nucleus is the first to get damage, it is gradually losing moisture, becoming disunited. Then degenerative process is progressing in fibrous ring as well, cracks appear, elasticity decreases. As a result the intervertebral fissure becomes narrow. This increases the pressure on articular processes, in consequence of this fragments of tremulous nucleus may protrude, creating disk ruptures. If the rupture is inwardly oriented it may compress the roots of cerebro-spinal nerve and cause developing cerebro-spinal radiculopathy, which is displayed by neurologic syndromes in form of reflective muscle tension, vegetative-nutritional disorders and constant extended pain [9; 20].

Fast tiredness of the muscles and pain during continuous static work are the initial signs of osteochondrosis [11; 19]. More often pain last for several days, in some cases – up to 2-3 weeks, rehabilitation takes about 1-1,5 months. In more severe cases pain lasts for few months, sometimes relapsing within many years [9].

The urgency of spine osteochondrosis problem among young people is unquestionable. The work is dedicated to the research of the problem and implying health improving physical training as a means of rehabilitation for students suffering spine osteochondrosis within physical education process.

Connection of the research to academic programs, plans, topics. The work was conducted in accordance with the prior direction of «Science about life, new technologies of prevention and curing the most widespread diseases», determined by the law of Ukraine «About the prior directions of science and technology

development», within the topic «Creating standards and technologies of introducing healthy life style, technologies for improving the quality and safety of provisions», as a part of realization of research work plan in the field of physical education and sports for 2014–2018 on topic «Innovative technologies of using natural and preformed physical factors and other means of physical rehabilitation in complex health improving of a person».

Goals of the research: to characterize the main aspects of health improving physical training influence on spine state and general physical condition of the students with spine osteochondrosis.

Tasks of the research:

1. To study modern specialized literature on topic.
2. To summarize the modern approaches to using general physical training as a means of rehabilitation for students with spine osteochondrosis taking into consideration the data from scientific-methodological literature in this field.

Materials and methods of the research. Studying and system analysis of modern specialized scientific-methodological literature concerning the researched problem.

Results of the research and the discussion. The results of numerous studies testify that young people often enter educational establishments having weakened health. It is defined that level of physical health among students of the 1st year is lower than average and low in 73–75% of cases [6].

Health state among student youth can be characterized mostly by «school pathology», which during higher education period becomes more severe or chronic. This process is promoted by intensive academic load, unfavorable ecological and social factors, high psycho-emotional stress of modern life. All this occurs in a significant period of physiological and psychological development of a young organism [14].

Statistics show that about 90% of students have serious health disorders, 50% and more are at clinic registration, every 5th student attends special medical group or exempt from physical work; more than 50% of students do not conform the average level of state physical state standard, which guarantees stable health [4; 15].

Data on students' medical examinations in Kharkiv higher educational establishments testify that 47,7% of students have incorrect posture, including 13,5% – with scoliosis. Similar results are received when researching students' health state in Dnipropetrovsk establishments, and every following year the tendency to worsening increases [13].

It should be mentioned that against the background of weak physical development and health state worsening of modern student youth, constant strain in torso and shoulder girdle, caused by inactive life style, continuous positioning in physiologically uncomfortable poses: sitting several hours through, bended above a desk at school, at home, in front of computer, driving, – are the basis for developing and progressing spine osteochondrosis [18].

Scientific researches analysis shows that the cheapest and the most effective means of improving physical state and rehabilitation for students with displays of

spine osteochondrosis is physical exercises, with the help of which a student can not only improve one's physical qualities, that is the most appropriate in periods of the organism active growth, but also prevent pain syndrome occurrence during osteochondrosis and disease progressing [17].

At academic classes of physical education in special medical groups, to which, according to doctors' decision, relate students with displays of osteochondrosis as well, three pedagogical tasks are being solved: educational, training and health improving with prevailing majoring in organism function rehabilitation and general advancement of the organism. Beyond the academic hours, during student's active recreation, it is recommended to take up unassisted exercises, using different forms and means of health improving physical training. Average general volume of individual motor activity makes up 8–12 hours a week, and varies depending on health condition, the extent of physical development disorder, level of physical preparedness. It is proved that even a single physical exercise applied in time and optimally can considerable lessen syndrome displays of osteochondrosis or even diminish them. Constant exercising can guarantee reoccurrence of the disease. Certainly, preventive exercises at premorbid stage and first stage of spine osteochondrosis are meant here [18]. Physical health improving training for this category of students should also include exercises aimed to consolidate neck muscles, shoulder girdle muscles, spine, abdomen and forming the pectoral muscle girdle; general muscle strength and endurance improvement; rehabilitation and maintaining of main static and biomechanical functions of the spine, normal physiological curves, correct posture; cardiovascular and respiratory systems improvement, physical workability [11].

Complexes of physical health improving exercises are design considering anatomy-biomechanical peculiarities of lumbar-sacrum section of the spine. This concerns, in the first place, the starting position, which determines disks inner pressure in a damaged section. It is substantial that the pressure almost doubles in vertical position [10]. That is why when performing the exercises it is recommended to start with positions that discharge the spine – lying on spine, abdomen, side, with leaning support, kneeling. In case if pain syndrome is absent, some exercises may be performed from standing starting position [19].

Complex exercises at physical health improving classes also include general developing exercises, isometric exercises for neck, shoulder girdle, torso muscles, lower limbs and dynamic exercises with weight. The mentioned exercises should be sequenced with breathers for relaxation, and combined with exercises aimed to correcting posture. For neck section osteochondrosis displays some authors [11; 19] suggest performing these exercises: standing at a wall, press one's back of the head against it for 3-5 seconds with the following muscle relaxation; sitting at a table, lean with one's chin against one's bended arms and press, trying to bow or turn one's head. For lumbar-sacrum osteochondrosis other exercises are more efficient: sitting on a chair, press with one's shoulder-blades and waist against the chair hack; holding on to chair seat, try to lift oneself together with the chair; put one's elbows on the

table and press against it. After each exercises there should follow muscle relaxation and a pause for rest. Number of isometric muscle tensions at one training – 4–5.

The regimen of physical training should include the exercises that alter muscle-ligament girdle of the spine. An example for such exercise is ski-running [16].

A considerable health improving effect for students suffering spine osteochondrosis show exercises performed in the water and swimming, especially swimming brace and crawl on one's back. In the water the pressure on the spine is not big, the movements are soft, which allows to successfully apply this sort of muscle work (swimming) as health improving. Compound use of exercising and means of recreating complex for health improvement have gained wide popularity in higher education [11; 18; 19; 21].

There is an idea as for necessity of applying health improving physical training that would be based on «aerobic forms of training using musical accompaniment». The training can be called health improving if it is held in positive psycho-emotional conditions, distracts from irrelevant obsessive thoughts, promotes relaxation, favoring the state of comfort after the training [18].

Having preventing and curing osteochondrosis as a goal, it is suggested to use mechanic-therapeutic apparatus, particularly, ruled surface gym apparatus. As one of the variants preventive apparatus of V. V. Yevminov can be considered. It is a multilayered wooden surface capable of amortization. In this position under the pressure of one's own body spine column discharge and extending of its segments takes place. This provides expanding of intervertebral intervals, lessening of inner disk pressure and compression on nerve roots and blood vessels, extending and relaxing of muscles. Complexes of physical exercises designed by the author which are used together with discharging spine column, provide consolidation of deep and surface muscles of spine, forming of muscle girdle, that is a basis for normal functioning and protection of spine column structure [1; 3; 11]. The simplicity of preventative apparatus usage gives an opportunity to apply it during the academic classes of health improving physical training and at home for individual training. The choice of optimal load is the main task of primary stage of applying apparatus. If there is an aggravation of pain syndrome exercises with 5-6 apparatus may be acceptable, but if there is no aggravation as many as possible are to be used.

It should be mentioned that starting performing health improving exercises the following rules should be kept to: all the exercises are performed freely, without extra efforts, flick moves, at slow tempo, with a few repetitions, with pauses for rest, not allowing the muscles of the damaged section to get tired, conforming the load to the capabilities of one's organism, exercises with maximum amplitude are not acceptable [11; 18; 19].

For the process of complex health improving training to give the best results providing high health level, the means of different specification should be applied in complex. It is efficient to define the ratio of health improving training means in one single take as well as in a more prolonged period of time. Chaotic applying of different means not only keeps back physical workability development, but also may have negative impact on health. In this case the organism perceives the training as

incidental factor and does not react with adaptive processes. Only after systematic rhythmic repetition of loads with specification, when nervous system perceives it, accepts with its regimen conformity, the positive morpho-functional processes occur in the organism.

Taking the aforesaid into consideration such a universal health improving means should be looked for that would help significantly to realize the tasks of student youth physical state correction. This direction may be developed by using physical health improving technologies, based on standardized progress of aerobic endurance of person's organism. Together with that, it is appropriate to recall diseases prevention and concentrate on forming such sort of consciousness, such kind of life style, that would present physical and psychological health with greater value [2; 7; 18].

Conclusions:

1. Spine osteochondrosis is a chronic pluricausal disease that is characterized my degenerative dystrophic changes in intervertebral disks with the following damage to adjoining vertebra bodies, intervertebral joints and ligaments apparatus. The most widespread symptom of osteochondrosis is constant extended pain. During the last decades there can be observed a tendency to «rejuvenation» of osteochondrosis.
2. Physical exercises of health improving direction are the effective means of improving physical condition and rehabilitation for students with osteochondrosis displays.
3. Compound health improving effects of special physical training system, swimming, apparatus exercises within the academic process of physical education is a considerable preventive means and curing already existing pain syndrome among students.

The perspective of further research is connected to designing a method of complex correcting influences of physical rehabilitation means on students suffering spine osteochondrosis within the academic process of physical education and at their active leisure with experimental grounding and efficiency estimation of the designed method and studying the possibilities of applying it to health improving physical training program among students of special medical groups.

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THE COMPARATIVE ANALYSIS OF TEAM QUANTITATIVE INDICATORS OF TECHNICAL AND TACTICAL ACTIONS OF FOOTBALL PLAYERS OF 10–12 YEARS OLD DURING COMPETITIVE ACTIVITY

Abstract. ***Purpose:*** *to compare quantitative team technical and tactical actions of football players from 10 to 12 years old in competitive games.* ***Material:*** *the research was conducted on the basis of children's football club "Arsenal" in Kharkov. It was attended by 24 players aged 10–12 years in 18 games.* ***Results:*** *it is determined that the total amount of team technical and tactical actions during the competitive activity of football players increases with age unevenly. At the 10-year age young football players carry out on the average for game 324,6±12,3 TTA, in 11-year-old – 407,1±14,6, and in 12 years – 433,2±13,8. Authentically the highest results 11-year-old young football players in comparison with 10-year-old (have t=4,32; p> 0,01) and 12-year-old in comparison with 10-year-old (t=5,87; p> 0,01).* ***Conclusions:*** *it is established that authentically the highest results 11-year-old young football players in comparison with 10-year-old (have t=4,32; p>0,01).The 12-year-old young football players in comparison with 10-year-old behind the total number of TTA for a game (t=5,87 have the best quantitative indices; p>0,01).*

Keywords: *young football players, competitive activity, technical and tactical actions (TTA), quantitative and quality indicators.*

Introduction. Modern football is characterized by a high tension of game actions, demanding from a sporsman of maximum muscular efforts and ability to show them in a situation which quickly changes [1; 3; 6; 8]. Very often modern football is called intensive and, even, superintensive. Really, the huge volume of motive actions, speed of movement of football players in a game, work with a ball in the conditions of deficiency of time and space – all these characteristic features of modern soccer impose special requirements to individual skill of football players. Sports improvement of football players isn't present to a limit, and the most difficult of many tasks solved by them is the growth of technical and tactical skill [2; 4; 7; 8].

Experts recommend to use indicators of the efficiency and the productivity in sports as the main criteria of an assessment of competitive activity and sports skill of players [2; 9; 10]. Questions of a control and an assessment of the competitive activity of football players were in the center of attention of many experts. However each case was limited to the solution of only separate tasks which faced the researcher [5; 6; 9; 10].

Many experts consider the competitive activity, bringing it to the level of an integrated indicator, and sports result – as one of the leading criteria of the efficiency of educational and training process. To that, at the management of training process it is offered to concentrate an effort on the analysis of the competitive activity of teams and certain players because only in the conditions of responsible competitions positive and negative sides of the preparedness of sportsmen are fully shown. And only the competitive activity is deeply have learned, it is possible to develop the system of trainings which is adequate to it [1; 4; 7; 10].

Thus, the relevance of the chosen subject of the research is defined by the great importance of information on TTA, both certain players, and a team as a whole, for the improvement of the quality of educational and training work.

The connection of the research with scientific programs, plans, subjects. This work was carried out according to the list of the priority thematic directions of scientific researches and the development for 2013-2015. Kharkiv academy of physical culture, on the subject: 2.3. Scientific and methodical bases of the improvement of a training system of sportsmen in football taking into account features of the competitive activity" (The number of the state registration is 0111U001722) and the initiative subject of the research study of the department of football and hockey of Kharkiv state academy of physical culture for 2011–2015 on the subject: 2.6 The optimization of educational and training process of football players of different qualification (the number of the state registration is 0111U003127).

The aim of the research: to compare the quantitative team characteristics of technical and tactical actions of football players from 10 to 12 years old in competitive games.

Tasks:

1. To analyse the modern methodical literature on the chosen subject.
2. To carry out the comparative analysis of quantitative characteristics of technical and tactical actions of players of different age.
3. On the basis of the obtained data to reveal the total amount of TTA of players of 10–12 years old.

The material and methods of the research. For the solution of the put tasks the following methods of the research were used: analysis and synthesis of references; pedagogical supervision; tool method of registration of indicators of the competitive activity. All results of the research were fulfilled by the standard methods of statistical processing of the received results.

The research was conducted on the basis of children's football club "Arsenal" in Kharkov. The quantity of TTA of 24 football players was analysed by the age: 10 years old (n=8), 11 – (n=8) and 12 years old (n=8) in 18 games. The play activity was fixed on the 10-minute pieces that allowed to see the dynamics of all match, to define strong and weak sides of players of different game role: forwards, defenders, midfielders. In forms of technical protocols indicators of actions in attack were fixed: reception, maintaining, passes, kicks with the determination of coefficient of the

shortage. And also indicators of the play in defense: selection, itercept, game in single combat also with determination of the coefficient of lack.

TTA was recorded by a mediate way (hidden – when, who was watched – didn't know that he is observed).

According to the method of Y. A. Morozov the following technical and tactical actions were registered: receiving the ball; passes (short, average and long); itercept; single combats (above and below); enclosing; selection; dribble; kicks in a plane of a goal (by a foot and a head). The coefficient of lack of technical and tactical actions is paid off.

Data about technical and tactical actions had a good long talk on a dictophone, and then were deciphered by means of a stenograph. The comparative analysis of the activity of football players taking into account a game role was used on the basis of the results of processing of technical protocols. The average values of the performance of technical and tactical actions were defined following the results of 18 games for each role.

Results of the research and their discussion. Results of the conducted researches are presented in the table. Their analysis testifies, that the total quality of trapping during games increases from the age from 10 till 12 years old. So, this indicator football players in 11 years old is 22,2% more than at football players of 10 years old, and at players of the age of 12 years old in comparison from 11 years old the gain of this indicator made already 25%. It should be noted that football players of 10 years old have authentically the lowest indicators of a receiving the ball in comparison with football players of 12 years old ($t=2,5$; $p>0,05$) (look at the table). The similar dynamics is traced when performing short passes of a ball forward. Thus the gain in passes forward between football players of 10 and 12 years old has the reliable differences ($t=2,5$; $p>0,05$).

The tendency to increase is stored and when performing average passes back, a waist and forward football players of 10–12 years old. The analysis of the performance of long passes of a ball back, a waist and forward showed the essential increase to the number of technical actions of this element in competitive practice of young football players from 10 till 12 years old. The analysis of the results received at the performance of long passes of a ball, back and a waist, found out that 12-year-old young football players carry out these passes in comparison with 10-year-old ($t=2,42$ authentically more; $p>0,05$) (look at the tab. 1). The quantity of enclosing of the opponent on the average for the game increases with the age. In the 10-year-old age this indicator makes –12,2±4,5, in the 11-year-old age increased to 15,9±3,6 for the game, and in 12 years old made – 19,4±4,8, but these changes weren't reliable.

The number of the performance of kicks on goal by the foot and the head also increases. So, in the 10-year-old age above-stated indicators makes: kicking on a goal – 7,3±1,50, kicks on goal by the head – 0,3±0,02; in the 11-year-old age these indicators increased to 8,4±1,8 kicking on a goal and to 0,8±0,07 kicks on goal by the head. It should be noted that with the age the number of the performance of kicks by the head, between the 10 and 11-year-old football players ($t=6,86$ authentically increases; $p> 0,01$) between the 11 and 12-year-old ($t=5,26$; $p>0,01$) between the

10 and 12-year-old (t=11,93; p>0,01) (look at the table). However, despite the increase in the above indicators, among the total of TTA of young football players of 10–12 years old have the receptions which indicators tend to the reduction. They are, first of all: short passes of a ball back and across a field, maintaining.

The analysis of average values of quantity of short passes of a ball back and the waist during the competitive activity showed that at the age of 10 years young football players carry out on the average for the game: passes back and a waist – 54,3±4,7, in 11 years old this indicator makes 52,7±4,5, and in 12 years old – 51,2±4,3. The same tendency is observed and when performing dribble on the average for the game (look at the table). So, in the 10-year-old age this indicator makes 71,1±7,1, in the 11-year-old age – 68,3±5,7, and in the 12-year-old age it decreased to 55,2±5,1. The similar dynamics is traced and in single combats. Football players of 10 years old carry out on the average for the game 78,2±5,2 single combats, in 11 years old – 69,1±4,8, and in 12 years old – 61,1±4,3. It should be noted that 10-year-old football players carry out authentically more single combats for a ball in comparison with 12-year-old sportsmen (t=2,53; p>0,05) (look at the table).

The total quality of team technical and tactical actions during the competitive activity increases with the age. So, in the 10-year-old age young football players carry out on the average for the game 324,6±12,3 of TTA, in the 11-year-old age this indicator made 407,1±14,6, and in 12 years old– 433,2±13,8. The 11-year-old young football players have authentically the highest results in comparison from the 10-year-old (t=4,32; p> 0,01) and 12-year-old in comparison with 10-year-old (t=5,87; p> 0,01).

Conclusions:

1. The carried-out analysis of the scientifically methodical literature testifies that the competitive activity needs more perfect studying in the connection with the development and the deployment of new techniques of trainings.

2. It is established that the main quantitative indices of technical and tactical actions in an arsenal of young players of 10–12 years old increase unevenly with the age. Indicators tend to the reduction of young football players on the age from 10 to 12 years old: short passes of a ball back and across a field, maintaining.

3. It is determined that the total quality of team technical and tactical actions during the competitive activity of football players increases with the age unevenly In 10 years old young football players carry out on the average for the game 324,6±12,3 of TTA, in 11 years old – 407,1±14,6, and in 12 years old– 433,2±13,8. The 11-year-old young football players have authentically the highest results in comparison with the 10-year-old (t=4,32; p> 0,01) and the 12-year-old in comparison with the 10-year-old (t=5,87; p>0,01).

The subsequent researches will be directed on the definition of quality indicators of the competitive activity of young football players of 10–12 years old.

Team quantitative indices of the competitive activity of young football players of 10–12 years old, 18 games

№	TTA	10 years old (n=8)	11 years old (n=8)	12 years old (n=8)	t-the criteria of Sytudent					
		$\bar{X}_1 \pm m_1$	$\bar{X}_2 \pm m_2$	$\bar{X}_3 \pm m_3$	$t_{1,2}$	$t_{2,3}$	$t_{1,3}$	$p_{1,2}$	$p_{2,3}$	$p_{1,3}$
1.	Receiving the ball	77,4±11,3	94,2±14,7	118,3±12,4	0,9	1,24	**2,5**	>0,05	>0,05	<0,05
2.	Drop passes and across a field	54,3±4,7	52,7±4,5	51,2±4,3	0,24	0,24	0,48	>0,05	>0,05	>0,05
3.	Short passes forward	61,1±5,6	71,2±6,2	85,4±7,3	1,22	1,48	**2,65**	>0,05	>0,05	<0,05
4.	Short passes of a ball	115,4±12,5	123,9±15,34	136,6±16,4	0,42	0,56	1,04	>0,05	>0,05	>0,05
5.	Average backwards passes and waist	7,3±3,6	9,3±2,7	11,2±3,1	0,44	0,46	0,82	>0,05	>0,05	>0,05
6.	Average passes forward	8,5±2,2	12,3±2,5	13,8±2,9	1,14	0,39	1,45	>0,05	>0,05	>0,05
7.	Average passes	15,8±1,3	21,6±3,4	25,3±4,2	1,59	0,68	2,16	>0,05	>0,05	>0,05
8.	Long passes back, waist	0,8±0,22	2,3±0,73	5,2±1,8	1,96	1,49	**2,42**	>0,05	>0,05	<0,05
9.	Long passes forward	0,6±0,25	1,1±0,21	3,2±1,21	1,53	1,7	2,10	>0,05	>0,05	>0,05
10.	Long passes of a ball	1,4±0,5	3,3±1,1	8,4±2,3	1,57	2,00	**2,97**	>0,05	>0,05	<0,05
11.	Dribble	71,1±7,1	68,3±5,7	55,2±5,1	0,36	1,71	1,81	>0,05	>0,05	>0,05
12	Itercept, single combats, selection	78,2±5,2	69,1±4,8	61,1±4,3	1,28	1,24	**2,53**	>0,05	>0,05	<0,05
13.	Enclosing	12,2±4,5	15,9±3,6	19,4±4,8	0,64	0,58	1,09	>0,05	>0,05	>0,05
14.	Kicking on a goal by a foot	7,3±1,5	8,4±1,8	9,3±1,9	0,46	0,34	0,82	>0,05	>0,05	>0,05
15.	Kicks on a goal by a head	0,3±0,02	0,8±0,07	1,4±0,9	**6,86**	**5,26**	**11,93**	<0,01	<0,01	<0,01
	In total:	324,6±12,3	407,1±14,6	433,2±13,8	**4,32**	1,41	**5,87**	<0,01	>0,05	<0,01

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LEVEL OF PHYSICAL FITNESS AND DEVELOPMENT OF PSYCHOMOTOR QUALITIES OF STUDENTS OF THE MILITARY LAW FACULTY

Abstract. ***Purpose:*** *to identify the level of the individual application of psychomotor qualities and physical fitness of students of the Law University.* ***Material:*** *48 boys and 19 girls of the 1 course of the Military Law Faculty took part in the study.* ***Results:*** *it is noted that professionally applied physical training of a future military lawyer should focus on the assimilation of certain knowledge and skills, among them – professionally important psychomotor skills, providing a high degree of preparedness to perform official duties.* ***Conclusions:*** *the level of physical fitness, which was determined by the results of the test exercises for strength, endurance, coordination, insufficient set of girls and middle of boys. For all tests, that characterize the level of the development of psychomotor skills (reaction time to light and sound by hand, the sound by leg, with a choice reaction time and individual minutes), except the reaction time to the light by leg, indicators are within normal limits.*

Keywords: *students, lawyers, psychomotor qualities, physical skills, testing.*

Introduction. At the present stage of the development of the country in the conditions of high-quality transformation of all aspects of life of the society requirements grow to physical preparedness of young generation which is necessary for their successful work. In this regard the higher school is faced by a task of radical and comprehensive improvement of professional training and physical training of future experts.

At National University «Yaroslav the Wise Law Academy of Ukraine» at the military law faculty preparation of legal specialists is carried out for prosecution agencies of supervision of laws compliance in the military sphere, legal service of the Armed Forces of Ukraine and the Military service of law and order in the Armed forces of Ukraine, the Public border service of Ukraine, the Ministry of extraordinary situations of Ukraine, the Management of the State protection of Ukraine, the Public special service of transport of the Ministry of Transport and Communications of Ukraine, the Internal troops of the Ministry of Internal Affairs of Ukraine.

As it is noted in points 4 and 9.4 of the order of the General prosecutor of Ukraine of 15.12.2011 No. 2gn "About the organization of the work with specialists for prosecution agencies of Ukraine" to the Highest administrative board should "… permanently study professional and organizing abilities, moral qualities of prosecutors and investigators, to practice their professional and psychological testing,

first of all, candidates for executive positions. To consider results of testings during carrying out certifications, solutions of questions, of transfer to a personnel reserve and replacement of vacancies. … to propagandize in the subordinated collectives a healthy lifestyle, to encourage to exercises, with sports, carrying out cultural improving actions, overcomings of addictions" [4].

At appointment to different operational positions in prosecution agencies moral qualities and psychological properties of the personality which, in particular, are important: appropriate level of culture, education of sense of justice, civil liability; honesty, modesty, intelligence, objectivity, open-mindedness, analytical skills, and so forth. Individual psychological qualities of the personality also have the meaning for work at a position of the prosecutor, the investigator, the assistant prosecutor [5]. Considering professional psychological selection of candidates the following qualities of the contender are considered: ability and readiness for the service in prosecutor's office; attentiveness and observation; thinking speed; good memory; ability it is logical to think and work quickly and resolutely in conflict situations; main lines of temperament; communicativeness and ability to come into psychological contact with persons and so forth. Taking into account specifics of work in prosecution agencies, intensity, emotional and physical pressure of work of public prosecutor's workers, certain requirements are imposed to candidates for these positions also concerning a state of health [5].

The analysis of the last researches and publications, and also practical experience testify that problems of the theory, techniques and the organizations of physical training, in a training system of specialists for the Ministry of Internal Affairs, the Ministry of Defence, the Ministry of Justice and Prosecutor's offices of Ukraine remain open, that is the scientific data connected with the researches of applied physical training of specialists of a military and legal profile, their physical development and health level in domestic scientifically methodical literature are presented not enough.

The connection of the work with scientific programs, plans, subjects. The research is a component of the research work of the department of physical training No. 3 of «National University «Yaroslav the Wise Law Academy of Ukraine»".

The aim of the research: to find the level of the development of separate applied psychomotor skills and physical preparedness of students of the 1 course of the military law faculty of legal university.

The material and methods of the research. The testing was used as methods:

a) physical skills (test exercises: shuttle run of 10x10 m; 12-minute run; jumping rope for 1 min; emphasis in sitting, lying position for 1 min; pulling up on a crossbeam; bending and extension of hands in lying position; raising in a sitting position for 1 min);

b) psychomotor skills. As the tools the hardware-software complex "Sports Psychophysiologist"was used by means of which the following psychomotor abilities were investigated:

1) time of simple sensomotorny reaction to light by hand and foot;

2) time of simple sensomotorny reaction to a sound by hand and foot;

3) time of reaction of a choice;

4) duration of an individual minute (IX). Each person has the individual system of the score of physiologic time and physiologic hours go with a different speed at people. For the research of own time scale of the subject the test «Individual Minute» is usually also used. At the research of an assessment of duration of individual minute the examined by pressing left (at first) and right (at the end) buttons of the external panel needs to measure 60s an interval. The assessment of time of duration of individual minute is measured by means of the panel timer by the difference calculation between times of the beginning and the end of measuring off. This test can be used for diagnostics of a psychoemotional state. For example, shortening of duration IX testifies to increase of uneasiness of the person, excessive emotional pressure, a depression. Lengthening of individual minute testifies to prevalence of brake processes.

Students of the 1 course of the military law faculty of " National University «Yaroslav the Wise Law Academy of Ukraine " took part in researches in number of 48 children and 19 girls. Classes in academic subject "Physical training" 2 times for a week for 2 academic hours, generally with the use of means of general physical preparation are carried out according to the existing program of the Ministry of Education and Science of Ukraine of 2003. Unfortunately, in the course of classes the attention isn't paid on the development of special physical and psychomotor skills, and also absent modeling of practical situations approached to real conditions of professional activity.

Results of the research and their discussion. In mastering the speciality a complex of psychophysiological qualities of the person plays a huge role, and first of all such, as functions of acoustical, visual analyzers, random access and long-term memory, a measure of concentration, switching and firmness of attention, emotionally strong-willed qualities, psychomotor reaction, psychological firmness and some other factors [1–3; 6; 9]. In principle it is possible any physically and mentally healthy person can be taught to the performance of duties of any profession. However practice of training of specialists at the accounting of a factor of time and economic feasibility shows that the greatest efficiency of the study can be achieved from people who have a necessary complex of psychophysiological qualities which identification can be carried out by carrying out psychophysiological selection. Therefore it is expedient to carry out before the beginning of the study an individual assessment of these qualities for the purpose of definition of the persons which are the most capable to study and mastering concrete speciality. It allows to reduce considerably terms of preparation and to reduce the number of the students deducted in the course of the study. Proceeding from it, the assessment of psychophysiological qualities of the person is rather actual task which especially sharp at the moment, at inclusion of the person in difficult technical systems «man-machine» with a high «price» of the wrong actions, which consequence is not only the decrease in quality of the professional activity, but also the emergence of accidents and even catastrophes. Psychophysiological selection is a component of professional selection

which provides an assessment of suitability of the military personnel on a complex of informative indicators for the performance of a certain activity [2; 3].

The results received during the researches of psychomotor qualities, are presented in tab. 1.

Table 1

Indicators of time of reaction to the light and sound by a hand

Tests	Boys, n=48		Girls, n=19	
	Norm	$\bar{X}$±m	Norm	$\bar{X}$±m
Time of reaction to the light by a hand, ms	260–330	290,65±32,67	260–320	300,7±27,10
Time of reaction to a sound by a hand, ms	310–370	243,86±29,74	320–390	284,36±44,37
Time of reaction to the light by a foot, ms	230–310	370,50±67,03	230–320	338,63±38,53
Time of reaction to a sound by a foot, ms	280–380	297,05±69,99	300–410	355,06±108,05
Number of wrong reactions	–	1,63±0,50	–	1,33±0,57
Time of reaction of a choice, ms	340–450	368,96±7,44	330–430	399,13±47,78
Individual minute, s	48–53, 67–71	60,35±13,06	49–52, 64–68	44,49±8,57

Analyzing indicators of time of reaction to the light by a hand, we found that they are in norm limits, and at boys they come nearer to bottom limits, and at girls – to top norms limits. The average values of time of reaction to a sound by a hand both at boys and at girls are outside norm, – the test executed better, than it is necessary. Comparing indicators of time of reaction to the light and a sound by a hand, we noted that at students reaction to the sound is better, than to the light.

Analyzing indicators of time of reaction to the light by a foot, we found that they are out of norm limits, – both girls and boys executed the test worse, than it is necessary. The average values of time of reaction to a sound by a foot both at boys and at girls are in norm limits, and at boys the indicator came nearer to bottom norm limits, and at girls – top. Comparing indicators of time of reaction to the light and sound by a foot, we noted that reaction to a sound by a foot is better at students, than to the light.

Results of the test for the definition of time of difficult visually motor reaction, namely reactions of choice, testify that when passing the test students made mistakes from 1 to 3 times. Indicators of time of reaction are in norm limits, and both at boys, and at girls – close bottom limits.

The internal assessment by the person of a current of time has the great theoretical and practical value. It allows individuals to control a course of vegetative and somatic processes, to plan the productional and educational activity, it is rational to approach to carrying out leisure. The work of so-called "inner clock" beats away the activity of physiologic processes, depends on features of higher nervous activity, has communication with the article and the age.

From tab. 1 it is visible that the average value of boys almost came nearer to a standard indicator 1 min, and at girls it considerably smaller. "Individual" minute at people in the course of the performance of intellectual operations is authentically slowed down that can testify to the distortion of an internal standard of time due to the activation of certain departments of a bark of big hemispheres. The time which is filled by any kind of activity, is subjectively estimated as slowly influenced, "individual" minute is thus shortened [2]. The researchers didn't reveal the essential communication between a course of an internal chronometer on the one hand and a type of working capacity, openness of character, a measure physical adapted on the other hand. At the same time the tendency to increase is noted in "individual" minute at sanguine persons and its reduction at melancholiacs.

Results of the research of the level of physical preparedness are presented in tab. 2.

Table 2

Indicator of the development of separate physical skiils of students of the 1 course

Test exercises	Boys n=48	Norm: result –point	Girls n=19	Norm: result –point
	$\bar{X}$±m		$\bar{X}$±m	
Shuttle run 10x10 m, s	27,71±1,65	27,5 – «5» 28,5 – «4» 29,5 – «3»	31,68±2,06	32,0 – «5» 33,0 – «4» 34,0 – «3»
12-minute run, m	2576,67±361,97	–	1891,11±304,49	–
Jumping rope for 1 min, a quantity of times	109,4±39,7	140–150	116,2±28,8	130-140
Emphasis in sitting, lying position for 1 min	28,7±3,7	30 and more	23,53±3,9	27 and more
Pulling up on a crossbeam, quantity of times	12,1±3,7	12 – «5» 10 – «4» 8 – «3»	–	–
Bending and extension of hands in lying position, quantity of times	41,8±4,3	36 – «5» 33 – «4» 30 – «3»	14,3±7,6	24 – «5» 22 – «4» 20 – «3»
Raising in a sitting position for 1 min, quantity of times	40,8±8,1	51 – «5» 45 – «4» 38 – «3»	33,5±8,2	45 – «5» 40 – «4» 35 – «3»

The analysis of the results of the test exercise of 10x10 m that in a complex displays coordination abilities, allows to speak about their high manifestation both at boys and at girls. So, according to standards [7], the results of boys answer estimates "4–5". The results of girls answer, generally to an assessment "5".

The analysis of the results of the test exercise 12-minute run that displays endurance, allows to speak about the "average" level of the development of aerobic opportunities at boys and "low" – at girls.

The test exercise "jumping rope for 1 min" is used by us showed an ambiguous picture. Simple, at first sight, exercise caused the mass of complications in tested. So,

according to the definition [7], this test characterizes the glycolytic efficiency of the person and in this regard both boys, and girls, showed rather low results. At the same time, according to the definition of L. P. Sergiyenko, jumping rope is a difficult coordination exercise connected with an assessment of existential and dynamic parameters of movements also needs the previous study [8]. The results shown by the first-year students allow to speak about the lack of such preparation at school. It is confirmed by that 49% of students got off during the performance of jumps 3–4 times, 16% made mistakes 5–6 times, according to 22% –didn't hold a jump rope in a hand at all and therefore their result wasn't beyond 80 jumps. Other 13% of students showed enough good results, "having jumped out" for 150 times.

Investigating the existential characteristics of movements by means of the test "from starting position: sitting down position, a jump – lying position, a jump –sitting down position, starting position " we came to a conclusion that the average result both boys and girls is rather low and doesn't satisfy to average century norms. With the test exercise "pullings up on a high crossbeam" students – boys, according to standards [7], consulted on "perfectly".

The results of the test "bendings and extensions of hands in lying position" speak about rather high level of the development of power dynamic endurance at boys and low – at girls. So, comparing the average results to standards [8] we found that boys passed the test "perfectly", and girls – on an assessment "below satisfactory". At the same time, if to compare the results received by us to the norms offered by V. A. Romanenko for this age [7], the boys have the average level of the development of these abilities. Also the experience shows that the results of girls seldom reach the high level even on the final year, most often raising on the second or third year of the study.

The results of the test " raising in a sitting position for 1 min " allow to tell about a low level of the development of force of muscles of an abdominal tension both at boys, and at girls.

Conclusions. The analysis of the operating system of physical training of students – military lawyers found a variety of reasons which reduce its efficiency: incompleteness of scientific justification of a special orientation of applied physical training of students; the number of hours which is taken away on planned classes in physical preparation, doesn't allow to resolve an issue of the directed development of physical skills; specifics of future professional activity are insufficiently considered. The level of the development of studied physical qualities, both at boys, and at girls is at the average level, the exception is made by the coordination abilities, what developed rather well. Comparing indicators of time of reaction by a hand and a foot to the light and sound it was noted that reaction to sound at students is better, than to the light. The average value of individual minute of boys almost came nearer to a standard indicator 1 min and made 60,35 s, and at girls – considerably smaller and made 44,49 s.

The prospect of the subsequent researches. It is provided to conduct the research of physical development of this contingent of students.

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THE INFLUENCE OF TRAINING LOAD ON THE DEVELOPMENT OF MOTOR ABILITIES OF ATHLETES OF 12–13 YEAR-OLD

Abstract. ***Purpose:*** *to analyze the impact of the training load for the development of motor abilities of athletes in the annual cycle of training.* ***Material:*** *fifteen 12–13 year-old athletes have been examined.* ***Results:*** *the main items of the theory of training of young athletes have been considered. Annual training programmed of training of sportsmen has been worked out, which consists of two macro cycles. Tasks, structure and duration each of them are neatly defined. The increase of motion abilities indexes within every macro cycle and during annual training period (P<0,05) has been observed. The speed indexes have increased up to 4,75%, speed endurance – up to 6,40%, speed power – up to 4,42%.* ***Conclusions:*** *the effectiveness of annual training period has been proved by the results the analysis of dynamics of the motion abilities indexes. Positive influence on speed, speed endurance and speed power of young athletes who work in sports groups has been revealed.*

Key words: *motor abilities, young athletes, annual training.*

Introduction. At the stage of initial sports preparation the versatile development of motor abilities is important. If accents of pedagogical influences answer the most favorable "critical" changes, characteristic for this century period, the development of motor abilities will be effective [1; 2].

The process of training of young athletes is characterized to variety of means and methods, broad applications of means of different types of sports, outdoor games, a game method. At the stage of initial sports preparation it is impossible to plan training classes with considerable physical and mental activities which allow the application of unvaried and monotonous work [8]. In training of young athletes the volume of the general physical preparation makes 85–90%, and special – 10–15% of the total amount of physical preparation. At this stage of preparation the total amount of means quickly increases, at the same time the volume of means of high intensity grows slowly. Scientific researches [4; 6; 7] show that training with the application of only running exercises, without the use of other supportive applications don't open completely the possibilities of young runners. Therefore the modern training with the application of power, specially preparatory means with devices and without them, motor and sports and so forth, expands a circle of motor skills, promotes harmonious development, improves functionality of an organism, creates strong base for increase of the level of physical preparedness of young athletes and serves as strong incentive for the attraction of children to occupations in athletics.

Questions of an overwhelming orientation of the development of motor abilities are important, but the realization of functionality of an organism will depend on it [9]. It is proved that the versatile training is increased by the level of the development of many motor abilities in a bigger measure, than the training is aimed at the development of only one quality. In this regard the importance is got by questions of sequence and an overwhelming orientation in the development of motor abilities [8].

Experts [3; 5] specify that among factors which define the level of sporting achievements in run on average distances, the primary role belongs to the endurance which in turn depends on the level of the development of mechanisms of power supply of muscular activity and ways of expansion of their opportunities. Exactly the possibilities of systems of power supply and the ability to use them rationally when performing motive actions, gain the crucial importance for the achievement of high rates of endurance. Therefore in the development of special endurance it is necessary to consider the differences in the ratio training means of a different orientation and a technique of increase of an energetic potential of athletes [8].

The connection of the research with scientific programs, plans, subjects. This work is performed according to the plan of the research work of the department of the theory and the technique of Olympic and Professional sports of Vladimir Vinnichenko Kirovograd state pedagogical university.

The aim of the research: to analyse the influence of a training load on the development of motive abilities of young athletes of 12–13 years old in an annual cycle of preparation.

The tasks of the research:

1. To develop the structure of planning of an annual cycle of training of young athletes who specialize in run on average distances.

2. To define the influence of training programs on indicators of motor abilities of athletes of 12–13 years old which specialize in run on average distances.

The material and methods of the research. The experiment was organized on the basis of the comprehensive school No. 4 in Kirovograd during the section classes in athletics. 15 athletes of 12–13 years old took part in the research which specialize in run on average distances. This age answers the initial stage of sports preparation.

In the course of the research the following methods were used: analysis of literary data, pedagogical experiment, pedagogical testing, methods of mathematical statistics.

For the research of the development of motor abilities the complex of tests is used: run of 60 m, run of 500 m, long jump from running start. Athletes carried out tests throughout a certain stage of preparation (in October – at the beginning of an annual cycle; in January – the winter competitive period; in August – the summer competitive period). These tests were chosen not incidentally, after all they serve as control exercises in sports schools upon the transition of pupils till the next training year.

The statistical processing of results was carried out by methods of mathematical statistics which provided the definition of the following indicators:

X – a weighed average arithmetic size, ΔX – a relative change of results, m – an error of an arithmetic average, P – reliability of changes on the basis of t-criterion of Styudent.

The results of the research and their discussion. As a result of the analysis of scientifically methodical literature and the best trainer's experience we developed the structure of planning of the annual cycle of training of young athletes who specialize in run on average distances.

The structure of planning of the annual cycle of training of athletes was developed taking into account the main regularities of adaptation processes, optimum coordination, distribution and duration of application of training programs of different orientation. Two macrocycles of the annual training of young athletes are developed, in their limits three periods (preparatory, competitive, transitional) are allocated which consist of stages.

In the first macrocycle which lasts 4 months the problems of the general physical, functional and psychological preparation are solved; the development of running, power and jump endurance; the improvement of separate elements of a technique of run; the realization of sports preparation. This macrocycle of the annual training of runners on average distances consists of four stages: the general-preparatory stage (3 weeks of October), the specially preparatory stage (1 week of October – November), the precompetitive stage (3 weeks of December), the winter competitive stage (1 week of December – ½ of January), the transition period (½ of January).

The second macrocycle of the annual preparation (8 months) is directed on the solution of the following tasks: the development of the general and special running endurance, the power and high-speed endurance and the explosive force; the improvement of separate elements of a technique of run on average distances, tactical and psychological preparedness; the realization of sports preparedness for achievements. This macrocycle of the annual preparation consists of five stages: the general-preparatory stage (February), the specially preparatory stage (March), the precompetitive stage (April), the summer competitive stage of not main competitions (½ of May –½ of June), the summer competitive stage of main competitions (½ of June – August), the transition period (September).

According to the leading coaches of athletics, the developed structure of planning of the annual cycle of training of young runners on average distances is exemplary, and has to be corrected by each expert according to the initial level of physical preparedness, morphofunctional and psychological adaptation of athletes to the certain programs of physical exercises, fixtures.

Thr efficiency of the developed technique of training was estimated behind the results of pedagogical testing (table).

The dynamics of indicators of motor abilities of young athletes of 12–13 years old on the level of initial sports training

№	Indicators	Assessment periods	Statistics						
			$\bar{X}$±m	ΔX1	ΔX2	ΔX3	P1	P2	P3
1	Run 60 m, s	October	9,39±0,13	–2,24	–2,51	–4,75	*	*	*
		January	9,18±0,11						
		August	8,95±0,14						
2	Run 500 m, min	October	1,43±0,01	–2,80	–3,60	–6,40	*	*	*
		January	1,39±0,02						
		August	1,34±0,02						
3	Long jump from running start, m	October	3,36±0,15	1,49	2,93	4,42	*	*	*
		January	3,41±0,16						
		August	3,51±0,16						

Note. *1. ΔX1, ΔX2, ΔX3– the gain of indicators of motor abilities of athletes (%) in the first macrocycle, the second macrocycle and in the annual cycle of preparation respectively; 2. P1, P2, P3 – the reliability of differences between the indicators of motor abilities of athletes October and January, January and August, October-August, respectively; 3. * – the reliable difference (P <0,05) between the indicators of motor abilities.*

The analysis of dynamics of indicators of motor abilities of athletes in the first macrocycle of the annual preparation (October – January) showed their reliable increase. So, the average value of time of overcoming of a distance of 60 m (9,39 s) it was reduced on 0,21 s that makes 2,24% for a gain. According to run on 500 m similar changes of an indicator were observed (1,43 s) which was reduced on 0,04 s that makes 2,80% for a gain. The average indicator of the range of a long jump from running start (3,36 m) increased by 0,05 m that makes 1,49% for a gain.

Therefore, not paying attention to the considerable volumes of means of aerobic direction in the general-preparatory period of the first macrocycle of annual preparation, it isn't revealed the negative influence on anaerobic mechanisms of power supply. Indicators of motor abilities authentically increased due to the inclusion to the training program of the specially preparatory and winter training and competitive periods of power exercises with the additional encumbrance and with a weight of own body, jump exercises, a throwing of subjects, races with encumbrance.

Analyzing dynamics of indicators of motor abilities in the second macrocycle of the annual preparation (February – September), we found a tendency to their reliable increase. The average value of run on 60 m (9,18 s) it was reduced on 0,23 s that makes 2,51% for a gain. The average indicator of time of overcoming of a distance of 500 m (1,39 s) it decreased on 0,05 s and makes 3,60% for a gain. In particular, the improvement of result of a long jump from running start (3,41 m) on 0,1 m that makes 2,93% for a gain is revealed.

As a whole the indicators of motor abilities of athletes in the second macrocycle of the annual preparation authentically grew on all indicators, after all they reached the maximum results throughout the whole experiment. The training program of the precompetitive stage was characterized close to the maximum

intensity of the performance of separate training classes. After all, before the series of starts athletes get the highest sportswear and the best functional state.

The indicators of motor abilities of athletes increased in the annual cycle of preparation authentically (P<0,05). So, the average value of the result of run on 60 m (9,39 s) it was reduced by 4,75% and makes 8,95 s. According to run on 500 m similar changes of an indicator (1,43 min) which was reduced by 6,40% were observed and makes 1,34 min. The indicator of the range of a long jump from running start (3,36 m) improved for 4,42% and makes 3,51 m.

Thus, the increase in volume not only running exercises, but also power exercises of the most specific to the main competitive distance is one of the directions of an intensification of training of young runners on the average distances. The inclusion at training jump exercises, power exercises, run in complicated conditions positively affected the run speed at the expense of increase in force of muscles of feet. The achievement of the high level of explosive force allows to run in a mode which is characterized by the high concentration of efforts in the main phases which defines the efficiency, the profitability and the stability of a technique of run; arms the runner with means of tactical fight.

Conclusions:

1. The developed structure of planning of the annual cycle of training of runners on the average distances at the stage of initial preparation has to be under construction taking into account everyexpert of the initial level of physical preparedness; morphofunctional and psychological adaptation of an organism of athletes to training programs of different in volume and intensity; compatible and incompatible training programs in occupations, microcycles; fixtures, material support; living conditions.

2. According to the results of the research it is revealed reliable (P<0,05) increase in indicators of motor abilities of young athletes, both within each macrocycle and in the annual cycle of preparation. The indicators of high-speed abilities increased by 4,75%, the high-speed endurance – for 6,40% and the explosive force – for 4,42% that confirms the positive influence of classes in athletics in the conditions of the section work on the development of motor abilities.

3. The analysis of dynamics of indicators of motor abilities testifies to the sufficient efficiency of the developed structure of planning of the annual cycle of training of young athletes of 12–13 years old who are specialized in run on the average distances.

The prospects of the subsequent researches. The study and the justification of influence of a training load on morphofunctional and psychophysiological indicators of young athletes in the annual cycle of preparation has to become the tasks of the subsequent scientific work.

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NEW TYPES OF AEROBICS AS A MEAN OF THE DEVELOPMENT OF MOTOR SKILLS OF STUDENTS OF HIGHER EDUCATIONAL ESTABLISHMENTS

Abstract. ***Purpose:*** *to search for new types of aerobics that could effectively influence the development of motor skills, positively change the functional state of the organism.* ***Material and methods:*** *the data analyzed and summarized the scientific literature and publications.* ***Results:*** *it is revealed that professionals have a wide scope for further study of means of aerobics, and improving methods of organizing and conducting classes, according to the goal. Forms of aerobics are considered that were introduced into the learning process of physical education of students of higher educational establishments.* ***Conclusions****: it is revealed that currently the content and organizational and methodological features of the aerobics classes using the rope in the learning process of students of higher education institutions are not reflected.*

Keywords*: rope-skipping, aerobics, motor skills, female students.*

Introduction. The problem of ensuring the optimum development of motor skills and the control of their level are one of central in the system of physical training. To this problem the works of V. M. Zatsyorskyi (1966), A. A. Ter-Ovanesyan (1978), N. A. Bernshteyn (1991), M. A. Godyk (1991), L. P. Matveyev (1991), V. M. Platonov and M. M. Bulatov (1995), V. I. Lyakh (2006) and others are devoted.

The purpose of physical training of higher school is the improvement of the level of physical training of students, the development of their motor skills to the level that allow to fulfill standard requirements of the training program successfully. Especially it concerns female students, which are the vast majority in many higher educational institutions of the country.

Experts consider that in programs of physical training the harmonious development of intellectual and motor skills of students, will be promoted by the use of the most popular types among students of physical exercises, at the expense of new opportunities of an emotional factor (Y. V. Biryuk, 1986; V. K. Balsevich, L. I. Lubysheva, 1995 and others). For the achievement of this purpose in the process of physical training in higher education institutions it is possible to use traditional and nonconventional means and methods of sports education and physical improvement that is noted in the Provision about the organization of physical training and mass sports in higher educational institutions of 11.01.2006.

Aerobics is an old friend and a partner of youth. It is a demanded type of physical activity, especially at girls already the third decade. In educational process of students of higher educational institutions the researches T. A. Kokhan, 2001 (hydroaerobics) is devoted to opportunities of the use of different kinds of improving aerobics; T. G. Vyalkina, 2002 (rhythmic gymnastics); K. V. Popova, 2003 (step aerobics); O. Y. Fanygina, 2005 (aqua aerobics); O. V. Starkova, 2006 (dancing aerobics); O. V. Trofimova, 2010 (fitness aerobics); O. Y. Chernenko, 2012 (fitball-aerobics).

But new effective technologies are necessary, simple for the use by the experts, attractive to the students who would add an arsenal of means of physical training of higher educational institutions.

The connection of the research with scientific programs, plans, subjects. The work was performed according to the priority direction of scientific researches of the department of the theory and the technique of physical training of Taras Shevchenko Lugansk national university – "The theory and the technique of profile study of seniors by sports direction in the conditions of continuous education" (the state registration number is 0108U002431).

Therefore **the aim of the research** is the search of new kinds of aerobics which could effectively influence the development of necessary motor skills, positively change a functional condition of an organism.

The material and methods of the research: the analytic survey and the generalization of data of scientifically methodical literature.

The results of the research and their discussion. For the first time the term "aerobics" was used by the American scientist-doctor Kenneth Cooper. The author distinguished five from the main types of physical exercises which own the best aerobic improving potential: jogging, ski race, walking, swimming, bicycling. The only one requirement to these types – the intensity and the duration of exercises have to provide the necessary aerobic effect [4].

Modern improving aerobics is a dynamic structure which promptly develops, and totals more than 200 directions. She owns great opportunities for the healthy lifestyle organization (M. M. Bulatova, Y. O. Usachev, T. Y. Krutsevich, 2003; V. Y. Davidov, T. G. Kovalenko, G. O. Krasnova, 2004), the attraction to culture of movements, the development of motor skills (O. E. Chernenko, 2010; S. Synytsya, L. Shesterova, 2011; I. M. Pogrebnyak, V. E. Kudelko, O. P. Nagovitsina, 2013), the emotional lifting (Y. V. Biryuk, 1986; T. S. Lisitskaya, 1987). It effectively influences the correction of the general appearance (F. Schmitt, S. Tayvers, 1994; T. Kutek, L. Pogrebennik, 2004), promotes the harmonization of physical development, the improvement of a functional condition of the main systems of an organism (K. Krapivina and others, 2002; P. V. Bilyayeva, 2009; O. V. Sokolova, N. V. Malikov, 2010; Z. L. Kozina and others. 2012), improves brainwork (V. M. Reyzin, 1989).

There is no doubt that the optimization of modern system of physical training of higher educational institutions due to the integration of effective aerobic

technologies into its contents, is the effective remedy of physical development and the improvement of students [12; 17].

It is displayed in works of native scientists of O. Y. Fanygina (2005), I. Y. Nikolaychuk (2008), O. E. Chernenko (2012) and others.

However the majority of the existing directions of aerobics have narrowly directed character [10]. It causes the necessity of creation of complex techniques from improving aerobics and is one of the perspective directions of the development of improving physical culture. Many experts establish the fact of a bad functional condition of modern youth therefore the majority of researches is directed on the improvement of these indicators and to the health strengthening.

Under the influence of classes of improving aerobics S. V. Synytsya, L. E. Shesterova (2011) investigated the dynamics of morphofunctional indicators of students. By results of the research it is proved that morphological parameters of girls change an insignificant measure and to scientific justification don't give in. But indicators of the system of breath and cardiovascular system [10] are subject to the considerable influence. O. V. Sokolova and M. V. Malikov (2010) investigated and noted the essential changes of the main indicators of the system of external breath: growth of vital capacity of lungs, increases in resistance to a hypoxia [13]. But not enough attention is paid by experts to the development of motor skills. Some experts claim that behind the increase of the level of the development of motor skills, the functional condition of cardiovascular system improves [8; 15].

Present students are former schoolgirls who have insufficient level of cardiorespiratory endurance about what the attention was concentrated in the research of G. V. Globa (2010) [1]. A number of scientists considers that the power abilities and the general working capacity are among the most lagging behind components [2; 16].

The analysis of the results of testing of T. G. Vyalkyna (2002) showed that coordination abilities of students are at the "low" level and thus there is a need to differentiate those who are engaged behind groups according to their level of perception of the studied material.

T. M. Suyetyna (1999) claims that the application of comprehensive programs from aerobics on classes in physical training led to the considerable improvement of high-speed and power qualities and mobility in joints. The researcher recommends to use a complex of exercises of mainly moderate power; to pay attention to the development of flexibility and mobility in joints, coordination abilities, power endurance; to reduce pace of pieces of music and intensity of classes at the initial stage of the study.

Data of pedagogical experiment of V. V. Semyannykova (2001) testify that the most effective remedies of the increase of physical preparedness and the improvement of health of students is overwhelming application of different types of aerobics and complex influence of new kinds of sports on the development of motor skills.

L. I. Kostyunina (2006) focuses attention that it is necessary to define the leading qualitative parties of motive activity at the organization and carrying out

classes in improving aerobics which is important for a choice of effective remedies and study methods taking into account abilities and interests of those who are engaged.

V. M. Platonov and M. M. Bulatova (1995) recommend to pay the main attention for the development of rational sequence and interrelation of different elements of movements in all variety of their dynamic and kinematic characteristics [7] at the selection of exercises and techniques of their use.

K. Cooper claims that aerobic opportunities can be increased if use more than one type of physical activity. It isn't obligatory to be limited to the only one type of aerobic activity. Using various programs of aerobics, it is possible to derive the maximum benefit for the minimum of time [4]. Aerobics allows to vary the technique depending on a goal [11].

Modern improving aerobics is constantly updated. There are new types of aerobics with the use of different subjects, exercise machines and other devices (fitball-aerobics, hydroaerobics, aerobics with a jump rope, and so forth).

Aerobics with a jump rope (rope-skipping) is a highly intensive type of cyclic aerobics with the use of a jump rope.The performance of exercises is provided mainly of jumping character [3; 11; 14]. Also exercises with a jump rope are one of the parts of Thai – Kick aerobics.

In the USA and Europe rope-skipping gained the popularity and develops even as a sport from 80th years of the last century together with the fashion on a healthy lifestyle. In our country jumps through a jump rope yet have no such wide appendix, as abroad. But it is a sports ammunition which we know and are fond of since our childhood.

A jump rope is used by boxers, fighters, volleyball players, skaters, and swimmer as a training apparatus, which always near at hand. During trainings endurance of an organism, force and flexibility of muscles develop, coordination and agility improve. Jumps develop a bearing, feeling of a balance.

Exercises and jumps with a jump rope at pace and character of music bring up space sense, feelings of time which are regulated by the different musical pace, allow to bring muscles of feet into norm, to pump up buttocks and a press, improve a condition of cardiovascular and respiratory system. Pace of music and movement which gradually change, cause an emotional response in those who are engaged, and, respectively, in them physical activity [9] increases. Also exercises which are carried out with a subject, promote the simultaneous development of flexibility and coordination abilities [5]. K. Cooper (1989) developed programs for jumps with a jump rope, for the increase of working capacity and a functional condition of respiratory and cardiovascular systems.

Not each school or a higher educational institution have sufficient material resources for providing gyms with step- platforms or fitballs. Very often it is possible to see self-made step- platforms and a low-quality covering of floors, there is a carpet not in each sports hall. The jump rope is that shell which can be used in any place and at any time, available of the financial point of view.

The weak spots are in aerobics except the positive effect – the possibility of negative influence on an organism of those who are engaged as a result of mistakes in a technique of classes, dispensing of loadings [4]. It is certain that classes in aerobics can injure extremities and a backbone, to lead to muscular pain, to worsen a dream and health, to cause an overload of heart, foul, in an internal and negative attitude to any kind of physical activity [6].

Conclusions:

1. The problem of ensuring the optimum development of motor skills and to control of their level are one of the central in system of physical training of higher educational institutions.

2. A jump rope is that subject which is loved by each girl, it is emotionally attractive, it can be used in any place and at any time; available from the financial point of view;

3. For this time the contents and organizationally methodical features of the use of a jump rope on classes in aerobics, in educational process of students of higher educational institutions not displayed.

Therefore the **prospect of the subsequent researches** in this direction is the development and experimental check of a technique of the development of motor skills of students of higher educational institutions, using a jump rope on classes in aerobics.

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MODERN TENDENCIES OF THE DEVELOPMENT OF 100 METRES DASH

Abstract. ***Purpose:*** *To study some aspects of modern tendencies affecting the development of race on 100 m, established on the basis of the World Championships in Athletics.* ***Material:*** *data were analyzed more than 220 people (men and women). The age of fourteen final races of the World Championships in athletics, their race are considered. A comparative analysis of world champions with existing records of the planet.* ***Results:*** *quantified indicators of athletes are determined which included in four age groups (zones), ranging from 19 years old and older, and the number of athletes based on race. The percentage of athletic performance to the winners of the world championship world record is showed, recorded on the day of the finals in the 100m at the world championships.* ***Conclusions****: on the modern tendencies in races on 100m influence mainly two schools – American school (in recent years, it began to give in its positions) and Jamaican school.*

Keywords: *race on 100 m, age brackets (zones) of sports achievements (of zone), races, world records.*

Introduction. The numerous researches conducted in sprint, open almost the whole methodology of training of athletes, beginning from a stage of the preliminary preparation and finishing a stage of the highest sports skills. It allows to speak about the priorities which developed in sports science in different years of the XX century. However there is a number of questions which weren't paid due attention, in particular it is a question of the aspects defining an essence of competitive activity, prospect of the development of a type of athletics etc.

The analysis of scientific and methodical literature where assumed age of athletes are considered, capable to reach high sports results, allows to say that experts have no consensus [2; 4; 5]. As appears from the earlier published materials, a great success in sprint (thus authors don't say that they mean by "great success"; it can be both the sports result, and the high place taken at large international competitions), in particular, on 100 m, come at the age from 19 till 24 years old.

Discussions about the prevailing force of dark-skinned athletes before white-skinned athletes are conducted long ago, and they began in 1960. Scientists and experts try to explain such domination long time. But, there is a natural question:

Why experts connect the progress with skin color? By the way, it concerns not only races on 100 m. Thus they don't speak about a technique of their preparation, about coaches and the experts participating in training process, material base, biomedical support etc. This direction represents a keen interest among coaches, experts and athletes and demands not only additional, but also basic researches.

It is important to become a medal winner, instead of to show the seconds beating the world record for each sprinter who won in the World Championship, according to our assumption. As far as results of winners of the World Championships are close to the world record, so it will allow to speak about priorities of a runner on short distances.

Studying of these, and also other aspects of competitive activity (for example, technical, tactical, psychological), will open tendencies of the development of all athletics sports, including in sprint in modern conditions.

After the emergence of such competitions in a sports calendar, as the World Championships ("summer" and "winter") the additional opportunity to expand studying of the above questions appeared at experts (earlier this opportunity was given, more, only at the Olympic Games, which held one time in four years) which as it was noted above, are one of components of the competitive activity of highly skilled athletes. It is necessary to remind that in 2013 the World Championships (till 1991 they were carried out one time in four years, since 1993 they are carried out one time in two years) noted the thirtieth anniversary.

The researches presented in the article, are interconnected with the theory and the technique of training of athletes at various stages of long-term preparation and have the practical importance which consists in purposeful and systematic formation of training process, without forcing training of young male runners (female runners) on short distances. The research took place within rendering the scientific and methodical help of preparation of a national team of Russia on athletics.

The aim of the research was the studying of some aspects of the modern tendencies influencing the development of races on 100 m, which developed on the following results of the World Championships on athletics.

The material and methods of the research. The researches were conducted from 2009 till 2013. Data of the athletes who made the final races on 100 m (men and women) underwent the analysis. The age of athletes, their racial accessories were analyzed, and also sports results of winners of the World Championships are compared with operating records of the world. In the conditions of stadium a total of fourteen World Championships were held in athletics (1983–2013) where 224 persons took part in the finals.

Results of the research and their discussion. The task of the first part of the research was the age definition (number of full years) sprinters-finalists of the World Championships in race on 100 m and their distribution on the age brackets (zones).

Age of athletes. Athletes were subdivided into the following age groups (borders):

– 1st age group – "19 years old and younger";

– 2nd age group – "20–24 years old";

– 3rd age group – "25–29 years old";

– 4th age group – "30 years old and older".

The number of full years of athletes was defined on the date of carrying out the final race in the World Championship.

The quantitative indices of female runners and male runners who took part in final races on 100 m (1–8 place) are presented in tab. 1, including winners (1 place) and prize-winners (2–3 place) of competitions.

Table 1

Number of athletes who entered into various age groups in the race on 100 m (1983–2013)

Sportswomen	Age groups and borders (zone)			
	first	second	third	fourth
	19 years old and younger	20–24 years old	25–29 years old	30 years old and older
Women				
Finalists	1	36	54	21
Winners	–	6	6	2
Prize-winners	–	7	14	7
Men				
Finalists	2	48	47	15
Winners	–	6	6	2
Prize-winners	1	12	12	3

In total a part of finals were on 112 people at men and women, whose range of sports results made: at women from 10,70 till 11,52 s at men from 9,58 to 16,23 s.

Women. Analyzing the data presented in tab. 1, it is possible to note that in run on the most spectacular athletics distance the essential number of participants of final races (taking into account winners and prize-winners) made sportswomen, whose age fluctuates from 25 till 29 years old (48,21%). Slightly less (32,14%) of athletes entered into group where the age is in limits of 20–24 years old. The female runners from the 2nd and 3rd age group became the world champions, equally (on 6 people), and athletes from the 3rd age group – 14 people won most of all medals of silver and bronze advantage (look at tab. 1).

In the V World Championship (1995, Göteborg, Sweden) G.Torrence (USA) won which was 30 years old on the date of carrying out the final in run on 100 m. And only 16 years later in 2011 on the World Championship in Degu (Korea) the American runner K. Jeter (USA) at the age of 31 year old won a gold medal. Other achievement also belongs to K. Jeter which she showed in the World Championship in Moscow (2013). She became the most "overgrown" athlete (33 years old) who managed to become the owner of a prize-winning (bronze) place on so important starts in sports career of a sportswoman.

For all history of holding the summer World Championships the only youngest sportswoman starting in the final on 100 m (1993, Stuttgart, Germany), was the representative of Jamaica – N. Mitchell (19 years old).

Men. If in the race on 100 m at women the advantage of participants of final running at the age of 25–29 years old was noted, at men the advantage of athletes at the age of 20–24 years old over athletes of the third group (25–29 years old) – 42,85 and 41,96% (look at tab. 1) is recorded minimum (in one person). Both among winners, and among prize-winners of distinctions between the above groups it wasn't succeeded to record.

As for the athletes representing other age groups, it should be noted, first of all, the success of K. Lewis (the USA) who won the World Championship in Tokyo (1991, Japan) at the age of 30 years old, and also L. Christie (Great Britain) who won a world forum of athletes, passing to Stuttgart (1993, Germany), at the age of 33 years old. By the way, L. Christie is the only representative of Europe who won in the World Championship in the race on 100 m.

And D. Brown (Trinidad and Tobago) in their young years (18 years old) could win a silver medal in run on 100 m (10,08 s, 2003, Paris). B. Surin (Canada), also rose on the second step of a podium (1999, Seville), but only in 32 years old.

Racial accessory. The task of the second part of the research was the definition of racial accessory of the athletes who made a basis of final races (tab. 2).

Table 2

Number of athletes of various races participating in the finals in the race on 100 m (1983-2013)

№ World Championship, years	General number of athletes (m/f)	Races			
		Men		Women	
		Negroid	Caucasian	Negroid	Caucasian
I – XIV, 1983 – 2013	Quantity of participants of final heat				
	112/112	103	9	86	26
	Quantity of winners				
	14/14	14	–	10	4
	Quantity of prize-winners				
	28/28	28	–	21	7

The obtained data allowed to define that among female **participants** of final running of the World Championships in run on 100 m of 76,78% are female runners with dark skin (86 people), against 23,22% with white skin (26 people). Runners (71,42%) of the Negroid race became champions of a planet ten times, and sportswomen of the Caucasian race celebrated a victory in championships four times (28,58%). Twenty one dark-skinned sportswomen specializing in run on 100 m, became owners of silver or bronze medals (75%), against 7 (25%) athletes with white skin.

A bit different picture developed at the male **athletes**. In the main running of the World Championships where the rank of winner and prize-winners of competitions, 91,97%, or 103 persons was played, dark-skinned sprinters (look at tab. 1) made. All fourteen world champions and 28 owners of silver and bronze

awards of the world athletics forum at men are representatives of the Negroid race (100% an indicator). As for athletes with white- skinned, their presence at final races was limited 8,03% or 9 athletes. From this it follows that for the thirty-year history of the World Championships any of representatives of the Caucasian race yet didn't manage to ascend to the podium.

The results presented in the table 3, testify that most of all of participants of final races in the World Championships, both at men, and at women, were citizens of the USA – 31 and 37 people, respectively.

Table 3

Number of athletes of various races participating in the finals in the race on 100 m from various countries (1983-2013)

№	Country	Races	
		Negroid	Caucasian
Men			
1	The USA	31	–
2	Jamaica	16	–
3	Great Britain	13	1
4	Canada	9	–
5	Trinidad and Tobago	8	–
6	Nigeria	6	–
7–8	Namibia, Saint Kitts and Nevis	4	–
9–10	Ghana, Antigua and Barbuda	2	–
11	France	1	2
12–18	Antilles and Bahama Islands, Barbados, Brazil the Dominican Republic, Cayman Islands, Portugal	1	–
19–24	Australia, Hungary, Italy, FRG, **USSA,** Slovenia	–	1
Total:		**103**	**9**
Women			
1	The USA	37	–
2	Jamaica	23	–
3–4	Bahama Islands, Nigeria	8	–
5	France	5	–
6	Canada	2	2
7–8	Cote d'ivoire, Cuba	1	–
9	Ukraine	–	5
10	GDR	–	4
11–13	Russia, FRG, Greece	**–**	**3**
14–16	Belgium, Belorussia, Finland	–	1
17	Bulgaria	–	2
Total:		**86**	**26**

The second indicator belongs to male runners and female runners from the island of Jamaica – 16 and 23 athletes. The third, among men, were athletes from Great Britain – 13 sprinters, and among women – representatives from Bahama and Nigeria – on 8 female runners. Thus it should be noted that the Jamaican athletes

(both men, and women) could increase in recent years considerably the productivity in run on 100 m that allowed them to become the main contenders of championship medals. Among the European countries of the obvious leader at a sprint distance at women wasn't succeeded to reveal.

World records. The task of the third part of the research was carrying out the comparative analysis of sports results of world champions with operating records of the world in run on 100 m.

After introduction of official electronic time-keeping (01.01.1977) [7], the world record-holders in run on the most transient distance ***men*** had also representatives of the Negroid race the majority from which represent the USA (the American sprinters updated world records 9 times). Hegemony of representatives of the USA in lists of world record-holders in the XXI century was interrupted by two Jamaican sprinters – A. Powell and U. Bolt (tab. 4).

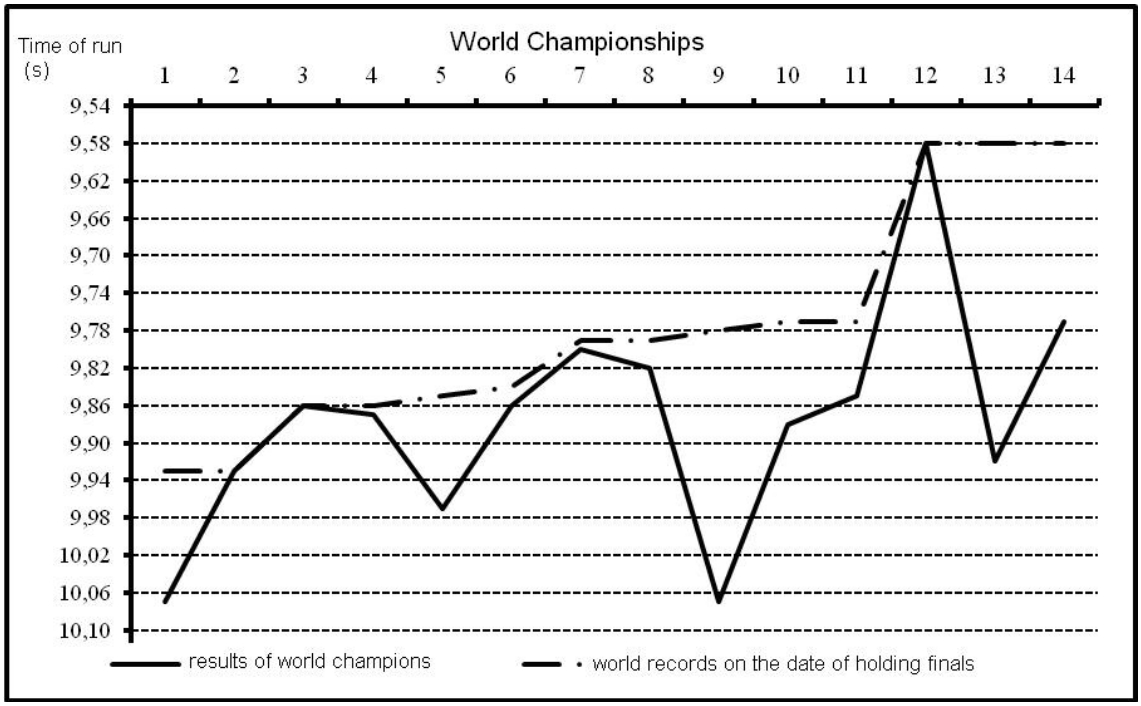
Table 4

Dynamics of records of the world in the race on 100 m at men (for 01.01.2014, electronic timing)

№	World record, s	Surname and name of sportsmen	Country	Date of the establishment	Age[1]	Race
1	9,58	Usain Bolt	Jamaica	16.08.2009	22	Negroid
2	9,69	Usain Bolt	Jamaica	16.08.2008	21	
3	9,72	Usain Bolt	Jamaica	31.05.2008	21	
4	9,74	Asafa Powell	Jamaica	09.09.2007	24	
5	9,77	Asafa Powell	Jamaica	18.06.2006	23	
6	9,77	Asafa Powell	Jamaica	11.06.2006	23	
7	9,77	Asafa Powell	Jamaica	14.06.2005	22	
8	9,79	Maurice Greene	The USA	16.06.1999	24	
9	9,84	Donovan Bailey	Canada	27.07.1996	28	
10	9,85	Leroy Burrell	The USA	06.07.1994	27	
11	9,86	Carl Lewis	The USA	25.08.1991	30	
12	9,90	Leroy Burrell	The USA	14.06.1991	24	
13	9,92	Carl Lewis	The USA	24.09.1988	27	
14	9,93	Carl Lewis	The USA	30.08.1987	27	
15	9,93	Carl Lewis	The USA	17.08.1987	26	
16	9,93	Kelvin Smit	The USA	03.07.1983	22	
17	9,95[2]	James Ray Hines	The USA	14.10.1968	22	
The world records which are registered, and then abolished by IAAF						
1	9,77	Justin Gatlin	The USA	03.07.1983	24	Negroid
2	9,78	Timothy Montgomery	The USA	14.09.2002	27	
3	9,79	Benjamin Jonson	Canada	24.09.1988	25	
4	9,83	Ben Jonson	Canada	30.08.1987	26	

Note. *1 – the number of full years is specified on the date of establishment of record achievement; 2 – as appears from the methodical materials of IAAF the record of the world set in 14.10.1968 by the American D. Hynes, isn't completely electronic. However as a world record, in the form of electronic timing, it is registered.*

In total three times champions of a planet in race on 100 m managed to improve an operating record of the world on the World Championships (look at tab. 4 and pic. 1). It testifies that in most cases for athletes the victory was important, instead of the demonstration of record run. From 14 champions of a planet world records in race on 100 m (K. Lewis and U. Bolt) obeyed only two sprinters.



Pic. 1. Comparative dynamics of results of winners of the world championships with operating records of the world in run on 100 m

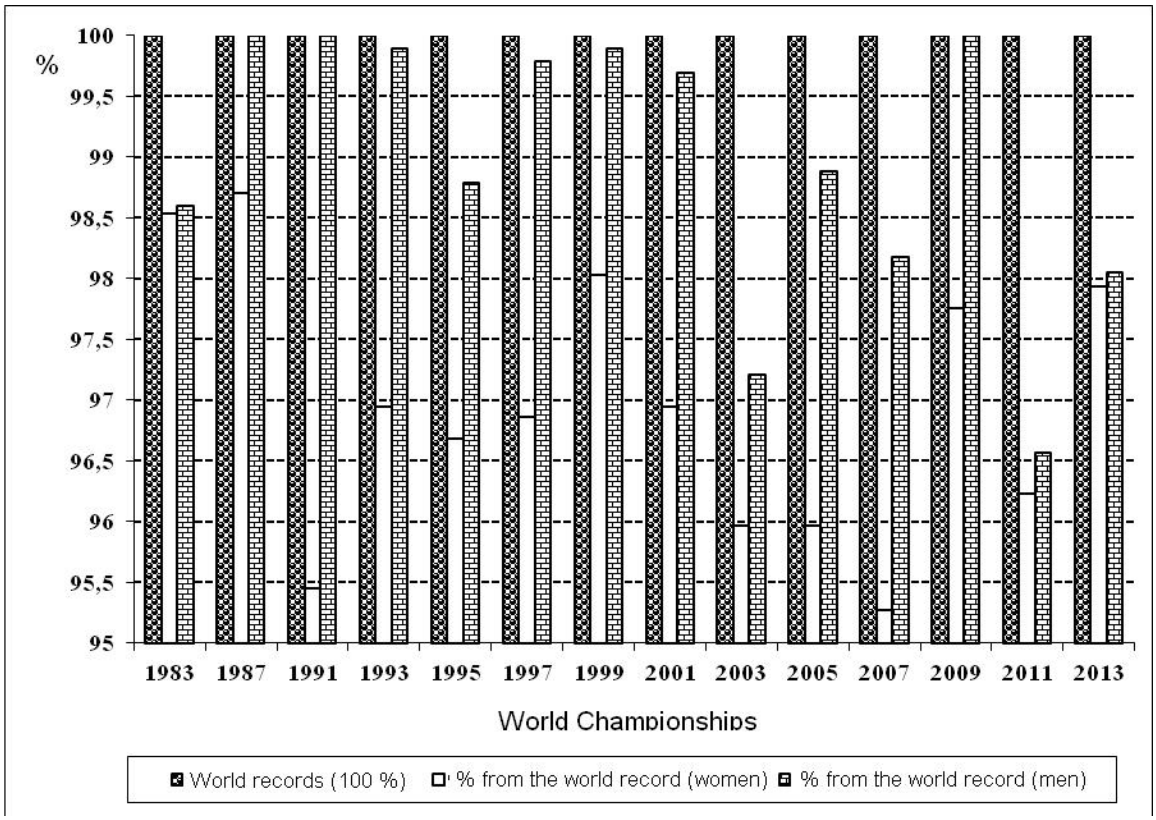
From the moment of the registration of record achievements by electronic timing the world record improved on 0,37 s. The essential gain occurred thanks to efforts of the Jamaican sprinters of A. Powell and U. Bolt (2005-2009). Before the appearance of sprinters from the island of Jamaica the planet record from 1968 to 2005 grew up on 0,18 s (1,84%). And since 2005 to the present, that is for 8 years, the world record was improved on 0,19 s (1,98%). Thus, for 41 year the best result in run on 100 m grew up for 3,86%. For the last 25 years the age of world record-holders looked younger. The most "overgrowth" world record-holder is K. Lewis, and young – U. Bolt. Apparently in pic. 1 after high results (three) the winners of the championships, as a rule, follows some recession of achievements of the athletes who won the first places.

For the thirty-year history of holding the World Championship two athletes "approached" the closest of everybody to the world record (excepting the world record-holders) – L. Christie and M. Greene (on 99,89%, tab. 5, pic. 2).

Table 5

Ratio of results of world champions with operating records of the world in the race on 100 m (1983-2013)

№	Result, s	% World record, s	Surname and name of sportsmen	Country	№ World Championship, year, city
1	10,07	98,60	Carl Lewis	The USA	I, 1983, Helsinki
2	**9,93**	**100**	Carl Lewis	The USA	II, 1987, Rome
3	**9,86**	**100**	Carl Lewis	The USA	III, 1991, Tokyo
4	9,87	99,89	Linford Christie	Great Britain	IV, 1993, Stuttgart
5	9,97	98,79	Donovan Bailey	Canada	V, 1995, Göteborg
6	9,86	99,79	Maurice Greene	The USA	VI, 1997, Athens
7	9,80	99,89	Maurice Greene	The USA	VII, 1999, Seville
8	9,82	99,69	Maurice Greene	The USA	VIII, 2001, Edmonton
9	10,07	97,21	Kim Collins	Sent Kits and Nevis	IX, 2003, Paris
10	9,88	98,88	Justin Gatlin	The USA	X, 2005, Helsinki
11	9,85	98,18	Tyson Gay	The USA	XI, 2007, Osaka
12	**9,58**	**100**	Usain Bolt	Jamaica	XII, 2009, Berlin
13	9,92	96,57	Yohan Blake	Jamaica	XIII, 2011, Degu
14	9,77	98,05	Usain Bolt	Jamaica	XIV, 2013, Moscow



Pic. 2. Dynamics of a percentage ratio of results of world champions with operating records of the world (woman and man)

From the current sprinters, who managed to come nearer as much as possible to an operating record of the world of U. Bolt (by the time of the publication of this article), the Jamaican runner Y. Blake (9,69 s) is.

Within twenty years the world record at women was improved on 0,59 s (tab. 6).

Table 6

Dynamics of records of the world in the race on 100 m at women (for 01.01.2014, electronic timing)

№	World record, s	Surname and name of sportsmen	Country	Date of the establishment	Age[1]	Race
1	10,49	Florence Delorez Griffith	The USA	16.07.1988	28	Negroid
2	10,76	Evelyn Ashford	The USA	22.08.1984	27	
3	10,81	Marlies Gohr	GDR	08.06.1983	25	Caucasian
4	11,01	Annegret Richter	FRG	25.07.1976	25	
5	11,04	Ingeborg Helen	FRG	13.06.1976	25	
6	11,07	Renate Stecher	GDR	02.09.1972	22	
7	11,08	Taus Vuaomia	The USA	15.10.1968	22	Negroid

Note. *1 – number of full years on the date of establishment of record achievement is specified.*

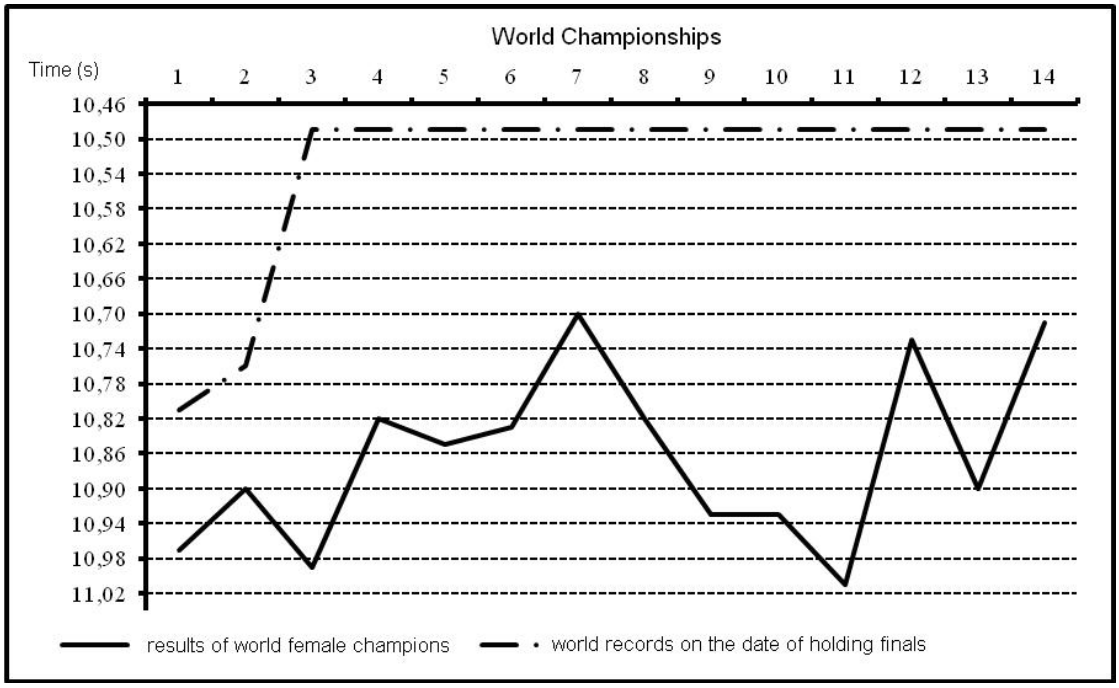
The significant progress in record achievements was made thanks to efforts of F. Delorez Griffith which improved the previous result (E. Ashford) on 0,27 s (2,51%). At women, unlike men, in the establishment of records of the world on three representatives of Caucasian and Negroid races participated (look at tab. 6). With the improvement of records of the world the increase of age of record-holders of a planet is also observed, unlike men where opposite, records of the world are set at younger age.

In the World Championships sportswomen never managed to update a planet record (tab. 7, pic. 3).

Table 7

Ratio of results of world champions with operating records of the world in the race on 100 m (1983-2013)

№	Result, s	% World record, s	Surname and name of sportsmen	Country	№ World Championship, year, city
1	10,97	98,54	Marlies Gohr	GDR	I, 1983, Helsinki
2	10,90	98,71	Silke Gladisch	GDR	II, 1987, Rome
3	10,99	95,45	Katrin Krabbe	GDR	III, 1991, Tokyo
4	10,82	96,95	Gail Devers	The USA	IV, 1993, Stuttgart
5	10,85	96,68	Gwen Torrence	The USA	V, 1995, Göteborg
6	10,83	96,86	Marion Jones	The USA	VI, 1997, Athens
7	10,70	98,03	Marion Jones	The USA	VII, 1999, Seville
8	10,82	96,95	Zhanna Pintusevich-Block	Ukraine	VIII, 2001, Edmonton
9	10,93	95,97	Torri Edwards	The USA	IX, 2003, Paris
10	10,93	95,97	Lorian Williams	The USA	X, 2005, Helsinki
11	11,01	95,27	Veronica Campbell	Jamaica	XI, 2007, Osaka
12	10,73	97,76	Fraser Sh-A	Jamaica	XII, 2009, Berlin
13	10,90	96,23	Carmelita Jeter	The USA	XIII, 2011, Degu
14	10,71	97,94	Shelly-Ann Fraser-Pryce	Jamaica	XIV, 2013, Moscow



Pic. 3. Comparative dynamics of results of winners of the World Championship with operating records of the world in run on 100 m

Thirteen from fourteen world champions could "exchange" symbolical 11,00s. The winner of competitions of 2013, the strongest runner on 100 m of the XXI century Jamaican athlete Shelly-Ann Fraser-Pryce approached the closest to the world record of the American (from the runners who became the world champions in the championships of a planet). Fraser Price (97,94%; look at tab. 7). And here the American runner K. Jeter (10,67 s), from all nowadays acting athletes (taking into account the results shown and at other competitions), "crept" the closest to an operating record of the world, belonging compatriot.

The interesting fact can be noted among the sportswomen who have won in the World Championships race on 100 m. So, in the first three championships (1983–1991) representatives of one country – GDR became the strongest. Further, from 1993 to 1999 on a planet the American runners were the best. In 2001 M. Jones (USA) was underwent to disqualification and the Ukrainian runner – Zhanna Pintusevich-Block became the owner of a gold medal. And, since 2003, the World Championships are won by sportswomen of only two countries – the USA and Jamaica. Thus, seven of fourteen times (50%) winners of competitions became the representatives of the USA.

Conclusions:

1. A significant amount of the athletes who achieved a great success (in our opinion the participation in final races of the World Championships already confirms the high level of skill of any athlete and is an important event in his sports career), are in the age range, both men, and women, of 20–29 years old (84,82 and 80,35%, respectively). This tendency remains, including, and at winners and prize-winners of the world athletics forum.

2. The analysis of races of athletes allowed to define that more successfully on the World Championships (the athletes participating in final races) act the dark-

skinned male runners (female runners) living, generally in the USA, in Jamaica, in Great Britain, Nigeria. Men have the main part of sprinters, world record-holders – citizens of the USA and Jamaica, and at women records of the world were improved only by the German and American runners.

3. In the World Championships only two athletes managed to set a world record whereas athletes never reached the result equal or surpassing record achievement. From here it is possible to make the conclusion that for the athlete the important place in his sports career is taken, for example, by a championship medal, instead of a world record.

4. Summing up the result of the aforesaid, it is possible to note that on modern tendencies of the development of the race on 100 m have impact while two schools – the American school (in recent years it began to give in a little) and the Jamaican school. But thus it should be noted that if the number of highly skilled American sprinters on the world international scene is great, a great success of island athletes is based on certain athletes, as well as however in last years (here it is possible to remember the Olympic champion (1976) in run on 200 m D. Quarrie, the owner of nine Olympic medals, the well-known runner M. Ottey). In this regard, in our opinion, the main contribution to the world history of race on 100 m remains while for male runners and female runners from the USA.

The prospect of the subsequent researches in this direction. Further it is planned to conduct the similar researches on all disciplines of athletics entering into group of sprint and hurdling (primary data are collected and processed).

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IMPROVING OF GAME ACTIVITY OF FOOTBALL PLAYERS YOUNGER SCHOOL AGE AT THE EXPENSE OF EXPERIMENTAL TECHNIQUES

Abstract. *The influence of experimental techniques training of technical and tactical focus on the gaming performance of the players of primary school age. It is proved that increasing the number of "hits" and the simultaneous decrease in the number of "long passes", "martial arts" and "stroke" in the experimental groups were held due to significant improvement in quantitative and qualitative indicators of transmissions performed "forward", "across" and "back" and "short" and "medium" transmission. These results give us reason to believe that the techniques that were used in the experimental groups are more effective than traditional methods of increasing the technical and tactical preparedness footballers younger pupils.*

Keywords: *school football, training process, competition activity, playing activity, technique and tactic actions.*

Introduction. Increased attention of the Football Federation of Ukraine to the development of football in the school coincided with the decision such an urgent tasks as improving the system of training of reserves in football in a country in order to further improve the skills of Ukrainian players.

At the same time the school is seen as the most important link of this system, capable not only perform the function of replenishing of sports schools it necessary contingent disciples but also a certain extent independently solve the task of preparing young footballers in terms holding of educational and extra curricular sports work.

Naturally, for the implementation of this task need for the purposeful development and implementation of innovative methods of workouts of different directions.

Carried out a significant amount of research studies on theoretical and methodical fundamentals of management preparation of football players [5; 6], optimize the physical [10] and technical and tactical [2; 4; 9] preparation of football players, modeling technical and tactical actions in the preparatory process of football teams [3; 8], of individualization preparation of football players [2], features of construction of training process of football players of different ages and sports qualification [4; 7].

Analysis of scientific and methodic literature testifies that studies that apply to the specific command and group of technical and tactical of interactions of football

players school teams junior, middle and senior school age are not available. School teams are formed various level of the players technical and tactical training, which complicates the team and the group actions.

All this determines the development and introduction of new methods workouts to enhance technical and tactical training school teams junior, middle and senior school age.

Relationship with academic programs, plans, themes. Work is executed in accordance with the consolidated plan of of research work in the sphere physical culture and sports on the 2011–2015 year. 2.3 on the theme «Scientific and methodological bases of perfection of the system of training athletes in football, taking into account features of competitive activity» (state registration number 0111U001722).

The purpose of research: to determine the influence of experimental techniques workouts technical and tactical indicators orientation on of game activity of younger school age of football players.

Research objectives:

1. Develop a training methods the team and group technical and tactical of interactions of football players younger school age.
2. The experimentally verify the effectiveness of the developed techniques influence workout on indicators of game activity of football players younger school age.

Materials and methods investigations. In accordance with the methodological approach in solving problems and assigned tasks research program composed complex of pedagogical methods (surveillance, teacher testing, pedagogical experiment) and the methods of mathematical statistics.

The study was conducted with schoolchildren Kirovsky district of Donetsk. In the beginning was the performed analysis of the morph functional state of the organism, physical, technical and tactical preparedness of football players of school age. By results of testing the players were divided into three equal groups – one control group and two experimental, 20 people each.

In the training process a first experimental group were included simple and effective group attacking technical and tactical actions in pairs and threes. Technique of training technical and tactical actions consisted of seven stages that has allowed effectively develop speed decision making regarding the choice of tactical embodiment.

To the second experimental groups in training sessions used different variants of collective game via short passing in the of small coalitions (4x4, 5x5, 6x6, 7x7) with command of models positional ball control.

In the control group throughout the experiment in the training sessions was used a standard set of exercises aimed at increasing the level technical and tactical training.

Footballers of all groups throughout the year continuously (4 times a week) were trained and participate in the control matches between them.

Results of the research and their discussion. As a result of the annual of the experiment, whose main purpose was to determine the influence of experimental techniques workouts technical and tactical indicators orientation on of game activity footballers school children, produced the following results are presented in table 1.

The obtained results show that after 12 months of training in the first and second experimental groups quantitative and qualitative (marriage,%) indicators: the total number "technical and tactical actions," "number of gear", "short", "medium", "long", "forward", "transversely" gears "single combats", "dribbling", "interception", "take away" "kick" – differences are not were detected ($p<0,05$).

At the same time, the number of "gears backward" and their marriage discovered significant differences between groups 1 and 2 ($t=2,23$; $t=2,76$; $p<0,05$).

During carrying out of test matches players of experimental group 2 was noted aspiration to carry out transmit ball, so it was convenient to take to her partner, and whenever a the situation allows, bottom. Thus, in short gear by them of technical marriage were admitted on less 49% in comparison with the players of the third control group.

Comparative analysis of playing activity of footballers second experimental and control groups showed significant improvement in the quantity and quality (marriage,%) performance in the experimental group, "the total number" ($t=3,78$; $t=3,17$; $p<0,01$) "quantity gear" ($t=3,79$; $t=3,14$; $p<0,01$), and "short" gears ($t=4,95$; $p<0,001$; $t=2,73$; $p<0.05$).

Table 1

Comparative characteristics of game activity footballers younger school children in groups 1, 2, 3 on the results of the annual of the experiment (n1=n2=n3=20), $\bar{X}\pm m$

Indicators		Group 1	Group 2	Group 3
Total number of technical and tactical actions		305,2±1,35	308,1±1,96	284,4±1,87
		19,7±0,97	19,4±0,19	28,8±0,17
A general number of gears		143,9±1,45	140,9±1,77	110,2±1,79
		21,7±0,14	22,7±0,32	32,3±0,33
Passes of ball	Short	55,4±0,28	56,3±0,52	29,3±0,48
		14,1±0,14	13,1±0,37	25,6±0,38
	Average	66,7±1,42	66,4±0,62	52,3±1,69
		30,9±0,31	31,9±0,71	28,6±0,56
	A long	19,4±0,19	18,5±0,38	28,6±0,44
		42,1±0,41	41,8±0,97	42,7±0,85
	Ahead	70,2±1,17	69,1±0,27	50,3±1,45
		31,2±0,34	30,9±0,93	42,7±0,83
	Transversely	52,3±0,37	50,6±0,88	41,6±0,75
		11,9±0,33	11,1±0,89	24,6±0,66
	Back	17,9±0,18	25,3±0,51	15,3±0,42
		18,1±0,47	6,2±1,17	19,1±0,84
Single combat		69,7±1,24	68,2±1,44	84,5±1,33
		33,2±0,14	31,2±0,29	31,4±0,21
Dribbling		11,6±0,15	11,3±0,24	19±0,17
		23,7±0,34	25,7±0,15	27,9±0,82
Interception		45,4±1,24	45,4±0,44	48,7±1,36
		27,2±0,29	26,2±0,46	25,4±0,34
Take away		16,2±0,17	19,2±0,31	19,4±0,23
		32,8±0,31	31,8±0,58	37,3±0,46
Kick		13,9±0,24	12,9±0,18	7,6±0,16
		46,9±1,78	46,1±1,38	43,7±1,82

Note. *Top row – indicators of game activity, bottom row marriage% Group 1 – the experimental group 1, group 2 – the experimental group 2, group 3 – control group.*

In the control matches players second experimental group were moving to gate of the enemy gradually, passing the ball of a single flank to the other. Thus, players control group it was necessary constantly rearrange: the one who recently was belaying, was supposed to be attacking and vice versa.

The second experimental group in relation to control there was a significant increase in the number of "average" ($t=2,92$; $p<0,01$) and reduction the "long" ($t=2,94$; $p<0,01$) gears, but quality "average" and "long" gears do not have credible ($p<0,05$) differences.

Observations show that short or medium transmission are not an impediment to the development attack as some claim specialists, a means of preparing of this attack under certain conditions. This ensures the preservation ball control of the team, and hence the safety gate.

Have also been found credible quantitative and qualitative improvement in the second group relative to the control group pass "forward" ($t=3,92$; $p<0,001$; $t=2,66$; $p<0,05$), "transversely" – ($t=3,94$; $p<0,001$; $t=2,48$; $p<0,05$) and "back" – ($t=3,47$; $t=3,27$; $p<0,01$).

No differences between in between the second the experimental and control groups indicators of of quality, "single combats", "dribble", "interception gear, "take away", «kick», and a similar trend is observed in quantity indicators "interception".

In quantitative indicators "single combats" ($t=3,96$; $p<0,001$), "dribbling" ($t=3,75$; $p<0,01$) showed significant reduction in the use of technical and tactical of Action players from second experimental group in relation to control group.

Thus the construction of games with an emphasis on group and team combinative action in the attack reduces the risk of losing the ball during attacking moves. Consequently no the need for frequent use of single combat with the aim to return the ball back.

Along with this, the second group of players ahead of the third by the number of executed «kick» ($t=3,82$; $p<0,01$). What is the evidence about the ability of players to act under time pressure and spaces and correctly implement tactical decisions in the final stages of the attack.

Studies of game activity footballers school children have shown significant improvement in quantitative and qualitative indicators in the first group in relation to control, "the total number of action» ($t=3,55$; $t=3,47$; $p<0,01$), «number of gear" ($t=3,91$; $p<0,001$; $t=3,44$; $p<0,01$), "short" gears ($t=4,85$; $p<0,001$; $t=2,63$; $p<0,05$).

Besides, in the first experimental group in relation to control there was a significant increase in the number of "average" ($t=2,46$; $p<0,05$) and reducing the "long" ($t=2,81$; $p<0,05$) gears however qualitative indicators "middle» ($t=1,46$; $p>0,05$) and "long" ($t=1,43$; $p>0,05$) gear do not have reliable differences.

Found quantitative and qualitative positive developments in the first experimental group relative to the control group in the indicators gear, "ahead" ($t=3,54$; $p<0,01$; $t=2,35$; $p<0,05$), "transversely" ($t=3,62$; $p<0,01$; $t=2,23$; $p<0,05$), at the same time in gears performed the "back" reliable changes not detected ($p>0,05$).

Not it was also found reliable differences between the first and third groups within quality (marriage,%) indicators: "single combat» ($t=1,16$; $p>0,05$), «dribbling»

(t=1,44; p>0,05), "intercept» (t=1,54; p>0,05), «take away» (t=1,93; p>0,05), «kick» – (t=1,79; p>0.05), and in quantity indicators «take away» (t=1,37; p>0,05) and "selection» (t=1,78; p>0,05).

At the same time was a significant reduction in applications "single combats» (t=3,72; p<0,01) and "dribbling» (t=3,69; p<0,01) players from the first group.

Players of the first group gradually have reduced application individual actions to a reasonable minimally by replacing their movements by means pass. It is known that the ball moves faster even the fastest player, a pace of the game is created not the legwork footballers. In addition, to organize a defense against players who constantly use dribbling in the attack, is much easier because be seen the direction of attack, and zones that need to insure.

At the same time, players of the first group ahead of the third by the number executed "kick" (t=3,91; p<0,001).

Conclusions. Thus, both experimental methods are able to exert a significant impact on of game activity. Increasing the number of "kick" and the simultaneous decrease in the number of "long passes", "single combats" and "dribbling" in the first and second the experimental groups happened because significantly improved the quantitative and qualitative indicators transmissions performed "ahead", "transversely" and "backward" and "short" and "average" gear. The obtained results give us grounds to assert that the experimental methods that were used in the first and second the experimental groups are more effective than traditional methods for improving technical and tactical skills footballers younger of school age.

On the basis of each experimental method of training created instructional videos "Position control of the ball for young players", "Group attacking tactical actions in couples", "Group attacking tactical actions in threes", for which derived acts introduction in educational process Center of licensing Football Federation of Ukraine.

Prospects for further research in this direction include the development and introduction of new methods workout to enhance technical and tactical training of players junior, middle and of senior school age.

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STATE OF THE PROBLEM OF REALIZATION OF THE PRINCIPLE OF CONSCIOUSNESS AND ACTIVITY DURING PHYSICAL EDUCATION CLASSES

Abstract. *One of the most urgent problems of modern society – providing comprehensive and initiative attitude of the younger generation to preservation and strengthening of their health was considered. Based on the analysis of scientific papers of different authors, facts aimed at confirming the importance of the principle of consciousness and activity in the course of sports activities of students were distinguished. Through a questionnaire survey of physical education lecturers, the level of realization of the principle of consciousness and activity in the educational and training process in the universities of Ternopil was determined for the first time on the contemporary level. Groups of its components, by which teachers are guided during the educational and training process, as well as those of its constituents which are left unattended by instructors were determined.*

Keywords: *conscious attitude, an active attitude, the principle of consciousness and activity.*

Introduction. Considering the decline in living standards, environmental degradation, reduction of public health and social programs, to the fore put the physical problems of today's youth. However, as the research [9], students of higher educational institutions, there is a low physical preparedness. Not more than 7.3% of university students have a favorable morphological status, only 1–2% have chronic medical conditions, about 80-90% are deviations in health status. Moreover, a significant proportion of young men on health are not called into military service. To remedy this situation, it is necessary to improve the efficiency of the physical education of the young generation.

Here it should be noted that all things and events in nature and life are subordinated to certain laws and develop in accordance with them. Such requirements are subservient to the process of physical education. Cognition of these laws, their study help to produce certain positions according to which you can improve the effectiveness of academic subject "Physical Culture" and improve the health picture of the future of society in general and in particular youth of today. One such requirement notes that the process of physical education should be carried out with the active participation of students in it, with the knowledge of the value of exercise for their comprehensive development.

Every training session is effective only when students show mental and physical activity. This implementation of the principle of consciousness provide an understanding of the value of youth physical exercise, the importance of solving the tasks during the lesson on physical education and active behavior universitarians of them. The teacher should be guided by this principle when conducting classes, otherwise they would not do any good and all efforts will be in vain. However, to date there is no reliable data on the level of provision of sports teachers and active conscious of students' attitudes to the material that is being studied.

Note that the problem of conscious and active behavior in the educational process researched Limareva Yu., W. Lozovaja, M. Hasanov, B. Shiyan [11; 12; 14; 15] and others. In the writings of these authors was done only in general overview to its principle and ways of implementation, and therefore, we can say that at this stage there is no evidence-based programs provide conscious and active attitude to the younger generation of sports activity that can take into account the time and effort of the teacher and youth, and at the same time to achieve tangible results. Stated actualizes theme of our research.

Goals of research: disclose the nature and importance of the principle of consciousness and activity and determine the status of its implementation on lessons of physical education of students.

Materials and methods of the research. To achieve this goal we have implemented a theoretical analysis and synthesis of the scientific literature of the theory and methodology of physical education, pedagogy and psychology, which gave the opportunity to learn the content of the basic concepts that relate to the scope of our research, and also conducted a questionnaire survey, which was attended by 50 teachers of physical education who works in higher education of Ternopil city, in order to obtain objective data on ensuring teachers conscious and active attitude to universitarians sports activity.

Results of the research and its' discussion. Formation of information-technological society, fundamental changes in the socio-economic, spiritual development States require corresponding changes in the education system. Modern education is focused on the integration of the European space. The complex problems of modern socio-economic and political development of Ukraine in the conditions of market relations confronts higher education institutions job transition to parenting active, creative, socially mature individuals capable of independently acquire knowledge [7].

T. O Butenko believes that the principle of consciousness and activity must ensure the formation of conscious citizens of our country, as well as being directed to the development of students' cognitive activity, understanding the importance of the knowledge and the need to be able to learn more, develop the ability and skills after graduating from high educational institutions [3, p. 7]. This principle is one of the fundamental in pedagogy of our time. Decisive place it occupied in the history of national education. Despite this, to date, the teacher does not always understand the role of the principle of consciousness and activity in the educational process.

To begin, we define what is the value of consciousness plays in the educational

process of students? Scientists [2; 5; 6; 8] note that the conscious character of human activity is in its planning, foresight results, regulation of action and desire to improve it. Awareness in studies understands the need of perception, learning and applying knowledge to a certain extent, with a certain degree depth. Principle of consciousness organically linked with the activity, initiative and autonomy of students. The true essence of human education folded deeply meaningful and self-knowledge acquired by intense stress his own mental activity. As a result of reflection, as a result of assessing the significance of the motif-purpose analysis of external constraints and opportunities of their own people consciously takes a smart decision about a particular action. Highest manifestation of consciousness in learning is the successful application of knowledge and skills in practice, the ability to analyze the phenomenon on the basis of assimilation of the theoretical material and the ability to successfully self-organization in the future. People through conscious perception, break, and transformation of information must expose and find their immaturity, open new tasks and find ways to implement them. Conscious information which became an internal acquisition personality has motivational significance, which not only determines human behavior, but also encourages him to deeper self-knowledge, self-education forms need, and desire leads to the end result of its activities.

A. I. Kuz'minskyi notes about it that conscious learning cannot be limited understanding of the need for students to learn [10]. From the younger generation requires an understanding of applied value of the acquired knowledge and skills. This will help to educate people who are able to use their physical abilities in different situations, with unexpected difficulties, and not only in the standard conditions of the sports hall and the stadium.

According to M. H. Hasanov, from the very first lessons teacher must teach students to consciously relate to physical exercises, to bring the initiative and independence, encourage the development of creative expressions [14, p. 125]. Universitarians must realize that discipline "Physical Education" is based on the biological, psychological, educational and social aspects of human development; realize that this is not an academic subject authoritarian means of increasing physical activity among young people, as part of the process of formation of a harmonious personality.

However, the teacher must not only provide the students' understanding of the essence of tasks assigned to them, but also make students to be interested in solving them. According to A. O. Artyushenko, teacher planning the content and organization of the educational process is to create such psychological-pedagogical conditions, so explain and give task to each student, realizing of their importance, independently decided – I want to do it, I can do it, I will do it [1].

Thus, described a large number of opinions of different authors, essentially aimed at the disclosure and confirmation of the principle of consciousness and activity in physical education of the younger generation, however, is necessary to clarify the extent to which this component is implemented in practice. To solve this task, we used a questionnaire, in which 50 teachers of physical education who works in high educational institutions of Ternopil city took part.

After analyzing the results, we found out that teachers during the educational process are not fully guided by the principle of consciousness and activity. From the first group of provisions, it is clear that the effectiveness of the reports to the consciousness of class assignments universitarians is low. The first question is, "Are you reporting students the task of the lesson?" 76% of respondents (38 people) answered "yes", 16% of teachers (8) carried it out "sometimes" and other 8% of the respondents (4) identified the option "no". From this we can conclude that not all teachers seek to form an active attitude of the younger generation in the process of physical education. Without communication students' tasks are in ignorance: they do not understand that they must do in class and for what purpose, and that in any case will not encourage them to conscientious activity. Also part of the teachers sometimes performs this procedure, that is irregular, which is also a negative factor: universitarians, taking into account the fact that these reports are not traditional, are not always ready for them, because even when the teacher explains certain tasks of the lesson the younger generation can take care for this process, leave it outside the scope of your attention, and all their attempts mentor will be in vain.

Open-ended responses to the following question provided an opportunity for us to find out what role, according to respondents, plays clarification students assignments classes. 38% of respondents (19) believe that this procedure aims at universitarians diligently and conscientiously perform exercise; 52% of teachers (26) reported that explaining of certain tasks explains the content of lessons. The remaining 10% of mentors (5), believe that the explanation to universitarians tasks of training do not affect the effectiveness of their actions: younger generation is interested in the process of physical education and indifference refers to the explanations of the teacher, leaving them out of their attention. Thus, as evidenced by the results obtained in the thoughts of teachers, there are significant differences: only slightly more than a third of respondents in the right way appreciate the role of explaining tasks of the lesson to their wards: they should serve as the starting shot that will encourage all participants to deliberate, fair and vigorous activity. Half of the respondents compare explanation of tasks with scheduled list of things that are wrong, light small part of plans of the teacher for students, but does not act as a motivating factor to fulfill the requirements of the exposed. Several respondents indicated that this component of the educational process is unnecessary and of no benefit due to lack of universitarians' interest to physical exercises. However, in our opinion in this situation the accent placed incorrectly: the younger generation exhibits inertia and indifference is not due to lack of stakeholder relations, and not in connection with the realization of the meaning and importance of their active operations, and one of the components to ensure such understanding is a correct statement of the tasks of the lessons.

Analyzed a group of answers to these questions, we can conclude that teachers pay insufficient attention delivery assigned tasks to consciousness universitarians not orient them to the following work, which, of course, has a negative impact on the efficiency of the whole further process of physical education.

As a way to motivate students in class 54% respondents (27) use only the

desire to get a positive assessment, 38% of teachers (19) used and the assessment and the desire to be physically developed universitarians, and 8% of the respondents (4) in no way encourage their wards to fruitful activities. Considering the fact that the motif is the determining factor in the success of the educational process from any discipline, it can be concluded that physical education teachers use an extremely small amount of means to motivate the younger generation, thereby not contribute to creating the conditions for fair and active solutions to certain tasks and attract students to the systematic implementation of the independent exercise. Motivation should be carried out in all fragments of a class, sent to all attendees. Important task of the teacher is to find at each stage of the student the most appropriate theme, respectively turning and rethinking the tasks that the teacher poses universitarians. Conscious study provides primarily awareness foundations and the semantic content of the provisions that are absorbed in the learning process, as opposed to formal, rote learning of empty formulas and unfounded allegations. It is essentially shown in the motives of activities for the younger generation to learn and why it learns. To enable the student to really involved in the work, you do put in physical education tasks are not only understandable, but also internally susceptible, that is, that they have gained importance for universitarian and found a way to review and reference point in his experience [13]. Only then we can expect the achievement of high results.

26% of teachers (13) in the classroom create situations that allow us to apply lessons universitarians knowledge and skills in practice, 38% of respondents (19) do this sometimes, and the rest, 36% of asked (18) did not find the marked factor necessary component of classes. Even with explanations students use and value of studying physical education teaching material, it is necessary that the teacher provided practical confirmation of the reported information, specifically, or the illusion of randomness, created the conditions for the use of the younger generations received acquisitions. This will serve as a strong argument truthful explanation of the teacher, to encourage universitarians to solving tasks.

The next survey question is "Are you providing students' conscious approach to the development of physical qualities?" 48% of respondents (24) answered "yes", 24% of respondents (12) – "sometimes" and 28% of teachers (14) recorded a version of "no". As to the purpose for which teachers carry out this procedure, we have obtained the following information: 42% of teachers (21) believe that this encourages universitarians to strict compliance with the specific directions. Of course, when the younger generation understands the purpose, function and use of their actions, it will provide them in good faith. 30% of respondents (15) indicated that the formation of a conscious attitude to the development of students' physical qualities make it easier to overcome fatigue and pain, and stimulates universitarians to implementing the tasks in full. Both groups received responses directed in the same direction: enhanced efficiency of the process improvement of physical fitness. The rest, 28% of teachers (14), who does not provide informing of students' attitudes to the development of physical standards, noted that the reason for this is the indifferent attitude of the younger generation in this process, and no reluctance to perform exercises to improve it. The situation is identical to that which regards communication tasks classes: low

interest universitarians to specific purposes and is not exposed to the requirements of a common condition, and noted the lack of predetermined components of the training process. It can be concluded that the part of teachers underestimate the importance of the principle of consciousness and activity in physical education students.

An important component of effective lesson is its high positive emotionality. Until now, the problem of emotion in science remains a mysterious and largely incomprehensible, although their role in management of activity human is very large. Emotions, feelings have different functions, are involved in the regulation of behavior of the person as a laid-back component, interfering with him, both on the stage of awareness needs assessment of the situation, and at the stage of decision making and evaluation of achieved results. Therefore, the successful management of sports activity requires the creation of a favorable emotional and sensual spheres [4]. However, only 54% of asked (27) provided during the implementation of the assigned tasks positive background. 38% of teachers (19) accomplish this through the use of jokes, creating conditions for psychological relief and reduction of universitarians, within a reasonable margin, the disciplinary requirements of the students. 16% of respondents (8) indicated that to improve emotional lessons, they create a friendly atmosphere. 46% of respondents (23) indicated that they do not pay any part of the effort to increase the psychological factor in the educational process. It should be noted that in the basis of physical education classes laid the conditions for creating a positive atmosphere: dissimilarity in the type of activity in comparison with other academic disciplines, the ability to meet the need for motor activity, and the like. The teacher should only implement the existing components. However, as evidenced by the responses received, a large number of teachers did not consider providing emotional lessons factor in improving of its effectiveness.

Only 28% of respondents (14) bring up a critical attitude to the universitarians own technical and physical readiness. Thus, physical education as a subject of higher education does not comply fully with its important function – the efficient formation of man's relationship to his own physical perfection, and therefore characterized by a decrease in the interest of the majority of students to sports activity and decrease its prestige. That is not taking into account the significant deterioration in the level of physical fitness, increasing the number of universitarians with a variety of diseases and healthy tiny percentage of representatives of the younger generation, today's young people do not recognize the existing problem, because it is inside of it, and because it cannot focus his look and notice it. And if, in the opinion of the student, there are no flaws, you do not need and strive to correct them. Therefore, one of the main tasks of physical education is to develop a critical attitude of the younger generation to their own level of health that will allow them to see the gaps, find ways to eliminate those universitarians lead to systematic physical exercises. As for the means by which teachers educate marked component conscious attitude, 28% of all respondents (14) indicated that for this purpose the students to correctly indicate gaps in the levels of their physical and technical preparedness and explain how it can hurt them subsequently. Significant drawback is the fact that the remaining 72% of the teachers (36), does not stimulate universitarians to self-control and self-assessment of

their own health.

38% of teachers (19) provide students with the opportunity to show independence (hold separate fragments classes, pick exercises to address specific tasks to carry out interaction studies, to independently carry out the proposed exercises and etc.). 36% of asked (18) only sometimes create such conditions, 22% of respondents (11) chose the option "No, because universitarians fail, are not competent" and 4% of teachers (2) do not consider it necessary to attract his players to perform tasks outlined. Taking into account the well-known fact that pedagogically organized activity of the young generation is an important factor in achieving high performance in the classroom for physical education, it is necessary to create the conditions not only for the formation of this component, but also for its further development: the highest form of manifestation of activity is the holding of students parts and whole classes, that is the transition to creativity. This will radically change the position of universitarians activities – become objects of the educational process in its subjects, not only to participate in a clear and conscientious fulfillment of certain requirements, but also to be involved in their formulation. This does not contradict the autonomy of students of pedagogical role of the teacher, and vice versa – is a testament to his excellence. Also, it should be noted that 22% of respondents did not provide their wards to conduct classes in the individual components due to the fact that universitarians fail, are not competent. But one of the strategic objectives of physical education is as follows: to make every purchase the basic theoretical and practical knowledge gained in the field of physical culture. That is, teachers are obliged to establish in their wards skills that are necessary for the organization and conduct of self-study, and marked by incompetence of students is not a permanent condition, and evidence of ineffective teachers implement tasks in this area.

14% of respondents (7) indicated that conscious and active students' attitude to the process of physical education is one of the key components to ensure its high effectiveness. 44% of teachers (22) reported a positive, but not the decisive role of this factor, 32% of teachers (16) believe that we analyzed factor only slightly shifts the scales in the direction of improving the quality of the training process, and 10% of respondents (5) do not see the purpose to describe the content element of effective lessons. Thus, despite the fact that the absence of the principle of consciousness and activity contrary to the pedagogical principles of any educational process, only a small proportion of respondents favor and recognizes the need to implement this component in the process of physical education of the young generation.

It is worth noting that only 12% of respondents (6) have teaching experience at least 5 years, and 76% of teachers (38) assigned to the scientific degree of candidate of sciences, that is, teachers participated in the survey with sufficient experience and high level of education, which is one of signs of their high qualifications.

Therefore, summing up the above, the following **conclusions** can be**:**

1. As evidenced by the analysis of scientific papers, the principle of consciousness and activity is a key component of effective training process. Mindless, mechanical repetition of the proposed teacher exercises will not bring good

results. Only under the condition of awareness, analysis of certain motor tasks, understand their positive impact, the younger generation with the manifestation of good faith and initiatives will search for ways to effectively address.

2. However, as the results of the analysis carried out a questionnaire survey of teachers implementing the principle of level of consciousness and activity in physical education students is extremely low. Especially negative is the fact that even such seemingly mandatory components as explanation to universitarians tasks of lessons or motivating students are not components of each lesson.

3. Only a small proportion of teachers understand favor of the principle of consciousness and activity. This fact, in our opinion, combined with a lack skills of teachers effectively guide marked principle are the main reasons outlined above state of affairs.

The next stage of our research will be to develop a pilot program implementing the principle of consciousness and activity in physical education to universitarians.

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PERFECTION OF EDUCATIONAL-TRAINING PROCESS ON THE BASIS OF ACCOUNT OF PARAMETERS TECHNICAL PREPARATION OF RUGBY-PLAYERS

Abstract. ***Purpose:*** *investigation of the technical preparation of rugby-players who trained on experimental methods on the basis of application of the worked out correlation of the training loading is investigated.* ***Material:*** *in research took part 60 sportsmen in age of 16–18 years took part.* ***Results:*** *the basic provisions of the program of technical preparation of sportsmen are presented, engaged in Rugby League in preliminary time of training macrocycle.* ***Conclusions:*** *during a pedagogical experiment the efficiency of application of the devised methods of preparation is well-proven for perfection of management of educational-training process of rugby-players of 16–18, that, for certain, is confirmed by the improved results of experimental group.*

Keywords: *rugby league, the training process, management, improvement, technical preparedness.*

Introduction. Rugby league is a spectacle game which combines predilections of lovers of different types of sport: during a match players do sprinter run repeatedly, jump for catching of ball from air, accomplish the throws of ball by hands, use feet and, besides, constantly enter into a fight against a rival [6; 7]. Lately there is interest of a number of authors to the study of question of perfection of educational-training process control in the contact playing types of sport [3–7].

Technical preparation is a part of process of preparation of sportsman, which is directed to the perfection the technique of selected type of sport. In addition, it means perfection of the technique of all those general developing and special exercises which are used in training [2; 8]. Technical preparation in rugby is a process of forming and further perfection of motor abilities and skills, necessary in a competition activity. The technique of competition activity of rugby-players is characterized by large variations of motor actions at the changing conditions of activity and mainly directed to providing of exactness of motions, economy of efforts and increase of efficiency of the use of speed-power internals [1].

One of characteristic features of technical preparation in rugby is that, in one case, it is necessary to obtain a good possession of technical actions and techniques and bring them to automatism. To use them in playing in situations for drawing attention of rugby-player which should be directed to the tactical side of his activity, in other case, it must be variant. First try is achieved directly in a training process by

a systematic master of necessary individual and group technical actions, and secondly by applying terms close to competition activity.

As in any playing type of sport, technical preparation in rugby is divided into two sections master of an individual technique; forming and perfection of group technical actions.

Every player must master basic technical actions, such as possession a ball (play by hands; movement with a ball on the field, changing a rhythm and direction at run; power single combat for a possession and its maintenance (contact) a ball; captures; kick to the ball by both right and left foot).

Relationship of work with academic programs, plans, themes. The research was conducted in accordance with the Consolidated research Plan of the Ministry of Education, Youth and Sports in 2011–2015 on theme 1.1 of «Research and Methodological Foundations of information technology professionals in the preparation of the field in physical culture and sports», state registration number 0111U003130.

Research purpose: perfection of educational-training process of sportsmen-rugby-players of 16–18 years.

Material and research methods: theoretical analysis and generalization of literary sources, pedagogical testing, methods of mathematical statistics.

60 sportsmen which are the participants of championship of Ukraine among youths under 18 years participated in an experiment. A control group was formed from two teams of participated. Krivoy Rog city, 30 sportsmen from teams "Rhinoceroses" and "Miner" participated. An experimental group was made by sportsmen who practice Rugby league in Donetsk, 30 sportsmen from teams "Tigers of Donbas" and "Typhoon" participated.

Research results and their discussion. The program of technical preparation of experimental group included the complex of exercises, directed to development: adroitness of upper extremities(determined by the transfer of ball in pair and catching after the kicking of ball); adroitness of lower limbs (a kicking of ball "balloon"); adroitness of upper and lower extremities (determined on implementation of exercises "captures" and " kicks and catching of ball from motion"); speed-power capabilities of upper and lower extremities ("Drop-kick"); speed-power capabilities of lower limbs ("shots on distance", by "shots on a goal").

The orientation of technical preparation was distributed as follows (table. 1, fig. 1).

Table 1

Distribution of orientation of technical preparation of rugby-players of 16-17 years of experimental group, (%)

Orientation	Months											
	09	**10**	**11**	**12**	**01**	**02**	**03**	**04**	**05**	**06**	**07**	**08**
Adroitness of upper limbs	80	80	80	70	60	50	40	20	20	20	20	20
Adroitness of upper limbs and lower limbs								30	30	30	30	30
Adroitness of lower limbs								20	20	30	30	30
Speed-power capabilities of upper limbs and lower limbs	20	20	20	30	40	50	60	20	20			
Speed-power capabilities of lower limbs								10	10	20	20	20

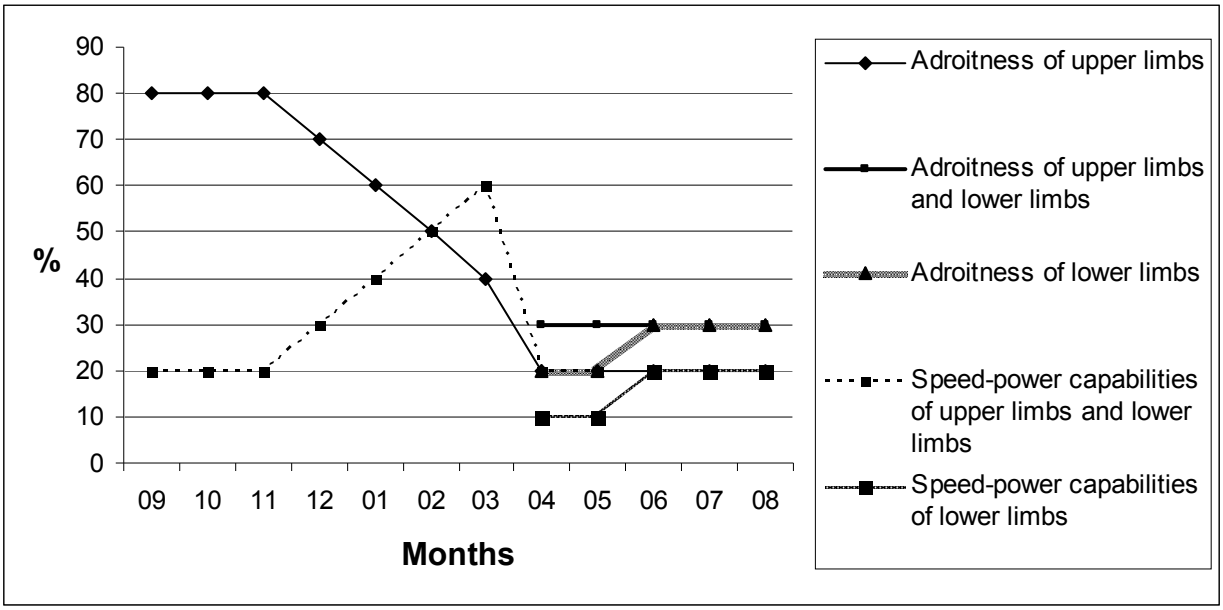

Fig. 1. Plan-chart of technical preparation of experimental group

Technical preparation of sportsmen of experimental group was carried out on the basis of training plan, representing percent correlation of orientation of development for Rugby league basic physical capabilities (adroitness and speed-power capabilities). Training sessions of control group were held on the generally accepted methods of preparation, even distribution of loading of general physical preparation, special physical preparation and technical preparation was foreseen. In an experimental group on the first stage attention was paid to development of adroitness upper limbs (with the gradual lowering) and speed-power capabilities of upper limbs and lower limbs (with a gradual increase), and on the second place with transfer to adroitness of upper limbs and lower limbs and the speed-power capabilities of lower limbs. Next out measures were carried on keeping at one level of adroitness upper limbs and lower extremities.

The results of application of experimental methods and comparison of them are further presented with the results of control group.

In technical preparedness on the first stage of experiment of distinction in the transfer of ball in pair for forwards were revealed ($p<0,05$) (table 2).

As a result of analysis of indexes of technical preparedness on the second stage of experiment, it is determined that at the end of the first stage of experiment observer is a high number row of indexes (table. 3) in both groups. On this stage of experiment between groups there were reliable distinctions for forwards and defenders in next indexes: transmission of ball in pair, catching of kick of ball, shot an goal, and also for forwards in the indexes of shot of ball "balloon" ($p<0,05$).

The comparative analysis of indexes of technical preparedness of sportsmen in both groups on the preliminary and first stage of experiment showed that their level of preparedness for certain increased on the indexes of catching of ball after a kick and kick and catching of ball from motion ($p<0,01$) (table 4, 5).

Table 2

Dynamics of change of indexes of technical preparedness of rugby-players of 16-17 years in control and experimental groups on the first stage of preparation (n1=n2=30)

Indexes	Lines of players	Control group		Experimental group		Static indexes	
		$\bar{X}$	σ	$\bar{X}$	σ	t	p
A transmission of ball in pair after 1 min (number of times)	F	**36,43**	**1,45**	**37,43**	**0,94**	**- 2,16**	**<0,05**
	D	38,50	1,21	38,38	1,26	0,29	>0,5
Capture after 30 c (number of times)	F, D	7,20	0,71	7,10	0,76	0,53	>0,5
A kick of ball "balloon" (m)	F	25,64	0,84	25,43	1,22	0,54	>0,5
	D	29,38	2,03	29,13	1,45	0,40	>0,5
Catching of ball (number of times)	F, D	8,03	0,76	7,87	0,73	0,86	>0,1
A kick and catching of ball from motion (number of times)	F	7,36	0,74	7,29	0,61	0,28	>0,5
	D	7,50	0,52	7,56	0,73	- 0,28	>0,5
A shot on distance from hands (m)	F	35,00	1,41	34,93	1,07	0,15	>0,5
	D	40,75	1,69	40,50	1,55	0,44	>0,5
"Drop-kick" (m)	F	31,7	0,83	32,00	1,04	- 0,81	>0,1
	D	37,69	1,62	37,75	1,39	- 0,12	>0,5
Shot on goal (m)	F, D	35,40	2,89	35,20	3,41	0,25	>0,5

Note. *t –criterion and p-level of meaningfulness is presented in comparison between control and experimental groups.*

Table 3

Dynamics of change of indexes of technical preparedness of rugby-players of 16-17 years by control and experimental groups on the second stage of preparation (n1=n2=30)

Indexes	Lines of players	Control group		Experimental group		Static indexes	
		$\bar{X}$	σ	$\bar{X}$	σ	t	p
A transmission of ball in pair after 1 min (number of times)	F	**37,79**	**1,05**	**39,00**	**1,41**	**- 2,58**	**<0,05**
	D	**39,63**	**0,96**	**40,44**	**1,09**	**- 2,24**	**<0,05**
Capture after 30 c (number of times)	F, D	8,13	1,17	8,53	1,14	- 1,35	>0,1
A kick of ball "balloon" (m)	F	**26,07**	**1,33**	**27,14**	**1,09**	**- 2,33**	**<0,05**
	D	30,56	1,26	31,44	1,21	- 2,00	>0,05
Catching of ball (number of times)	F, D	**8,27**	**0,78**	**9,00**	**0,87**	**- 3,43**	**<0,01**
A kick and catching of ball from motion (number of times)	F	7,93	0,92	8,15	0,697	- 0,72	>0,1
	D	8,25	0,77	8,65	0,86	- 1,39	>0,1
A shot on distance from hands (m)	F	36,93	1,14	37,21	1,42	- 0,59	>0,5
	D	42,94	1,57	43,19	1,17	- 0,51	>0,5
"Drop-kick" (m)	F	32,79	1,72	33,21	1,25	- 0,76	>0,1
	D	38,25	1,61	39,13	1,09	- 1,79	>0,05
Shot on goal (m)	F, D	**38,50**	**1,59**	**39,23**	**1,10**	**- 2,07**	**<0,05**

Note. *t – criterion and p- level of meaningfulness is presented in comparison between control and experimental groups.*

Table 4

Comparison of indexes of technical preparedness of rugby-players of 16-17 years of control group on preliminary and first the stages of experiment (n=30)

Indexes	Lines of players	Preliminary stage		First stage		Static indexes	
		$\bar{X}$	σ	$\bar{X}$	σ	t	p
A transmission of ball in pair after 1 min (number of times)	F	36,07	1,59	36,43	1,45	- 0,62	>0,5
	D	37,88	1,67	38,50	1,21	- 1,21	>0,1
Capture after 30 c (number of times)	F, D	6,77	1,01	7,20	0,71	- 1,92	>0,05
A kick of ball "balloon" (m)	F	24,86	2,25	25,64	0,84	- 1,22	>0,1
	D	28,88	2,16	29,38	2,03	- 0,68	>0,5
Catching of ball (number of times)	F, D	**7,30**	**1,09**	**8,03**	**0,76**	**- 3,02**	**<0,01**
A kick and catching of ball from motion (number of times)	F	**6,50**	**1,09**	**7,36**	**0,74**	**- 2,43**	**<0,05**
	D	**6,94**	**0,93**	**7,50**	**0,52**	**- 2,12**	**<0,05**
A shot on distance from hands (m)	F	34,64	2,24	35,00	1,41	- 0,50	>0,5
	D	40,13	1,93	40,75	1,69	- 0,97	>0,1
"Drop-kick" (m)	F	30,79	1,93	31,71	0,83	- 1,66	>0,1
	D	36,81	1,64	37,69	1,62	- 1,52	>0,1
Shot on goal (m)	F, D	35,87	3,07	35,40	2,89	0,61	>0,5

Table 5

Comparison of indexes of technical preparedness of rugby-players of 16-17 years of experimental group on preliminary and first the stages of experiment (n=30)

Indexes	Lines of players	Preliminary stage		First stage		Static indexes	
		$\bar{X}$	σ	$\bar{X}$	σ	t	p
A transmission of ball in pair after 1 min (number of times)	F	37,29	0,91	37,43	0,94	- 0,41	>0,5
	D	38,06	1,57	38,38	1,26	- 0,62	>0,5
Capture after 30 c (number of times)	F, D	6,73	1,11	7,10	0,76	- 1,49	>0,1
A kick of ball "balloon" (m)	F	24,79	2,67	25,43	1,22	- 0,82	>0,1
	D	28,31	2,49	29,13	1,45	- 1,13	>0,1
Catching of ball (number of times)	F, D	**6,80**	**1,45**	**7,87**	**0,73**	**- 3,60**	**<0,01**
A kick and catching of ball from motion (number of times)	F	**6,00**	**1,11**	**7,29**	**0,61**	**- 3,79**	**<0,01**
	D	**6,88**	**0,96**	**7,56**	**0,73**	**- 2,29**	**<0,05**
A shot on distance from hands (m)	F	34,00	3,46	34,93	1,07	- 0,96	>0,1
	D	39,75	2,41	40,50	1,55	- 1,05	>0,1
"Drop-kick" (m)	F	30,86	2,51	32,00	1,04	- 1,58	>0,1
	D	36,69	1,66	37,75	1,39	- 1,96	>0,05
Shot on goal (m)	F, D	35,17	3,14	35,20	3,41	- 0,04	>0,5

The analysis of data of the final testing showed next results: the indexes of experimental group became yet higher ($p<0,01$), while the indexes of control group had distinctions: transmission of ball in pair, captures after 30 with, blow on distance

from hands, blow to the gate in an attack and defence and blow and catching of ball from motion in defence and in an attack "Drop-shot" ($p<0,01$) (table 7).

Table 6

Dynamics of change of indexes of technical preparedness of rugby-players of 16-17 years of experimental group on the first and second the stages of experiment (n=30)

Indexes	Lines of players	First stage		Second stage		Static indexes	
		$\bar{X}$	σ	$\bar{X}$	σ	t	p
A transmission of ball in pair after 1 min (number of times)	F	**37,43**	**0,94**	**39,00**	**1,41**	**- 3,47**	**<0,01**
	D	**38,38**	**1,26**	**40,44**	**1,09**	**- 4,95**	**<0,01**
Capture after 30 c (number of times)	F, D	**7,10**	**0,76**	**8,53**	**1,14**	**- 5,74**	**<0,01**
A kick of ball "balloon" (m)	F	**25,43**	**1,22**	**27,14**	**1,09**	**- 3,90**	**<0,01**
	D	**29,13**	**1,45**	**31,44**	**1,21**	**- 4,89**	**<0,01**
Catching of ball (number of times)	F, D	**7,87**	**0,73**	**9,00**	**0,87**	**- 5,46**	**<0,01**
A kick and catching of ball from motion (number of times)	F	**7,29**	**0,61**	**8,15**	**0,69**	**- 3,47**	**<0,01**
	D	**7,56**	**0,73**	**8,65**	**0,86**	**- 3,89**	**<0,01**
A shot on distance from hands (m)	F	**34,93**	**1,07**	**37,21**	**1,42**	**- 4,79**	**<0,01**
	D	**40,50**	**1,55**	**43,19**	**1,17**	**- 5,54**	**<0,01**
"Drop-kick" (m)	F	**32,00**	**1,04**	**33,21**	**1,25**	**- 2,79**	**<0,01**
	D	**37,75**	**1,39**	**39,13**	**1,09**	**- 3,12**	**<0,01**
Shot on goal (m)	F, D	**35,20**	**3,41**	**39,23**	**1,10**	**- 6,17**	**<0,01**

Table 7

Dynamics of change of indexes of technical preparedness of rugby-players of 16-17 years of control group on the first and second stages of experiment (n=30)

Indexes	Lines of players	First stage		Second stage		Static indexes	
		$\bar{X}$	σ	$\bar{X}$	σ	t	p
A transmission of ball in pair after 1 min (number of times)	F	**36,43**	**1,45**	**37,79**	**1,05**	**- 2,83**	**<0,01**
	D	**38,50**	**1,21**	**39,63**	**0,96**	**- 2,92**	**<0,01**
Capture after 30 c (number of times)	F, D	**7,20**	**0,71**	**8,13**	**1,17**	**- 3,74**	**<0,01**
A kick of ball "balloon" (m)	F	25,64	0,84	26,07	1,33	- 1,02	>0,1
	D	29,38	2,03	30,56	1,26	- 1,99	>0,05
Catching of ball (number of times)	F, D	8,033	0,76	8,27	0,78	- 1,17	>0,1
A kick and catching of ball from motion (number of times)	F	7,36	0,74	7,93	0,92	- 1,81	>0,05
	D	**7,50**	**0,52**	**8,25**	**0,77**	**- 3,22**	**<0,01**
A shot on distance from hands (m)	F	**35,00**	**1,41**	**36,93**	**1,14**	**- 3,97**	**<0,01**
	D	**40,75**	**1,69**	**42,94**	**1,57**	**- 3,79**	**<0,01**
"Drop-kick" (m)	F	**31,71**	**0,83**	**32,79**	**1,72**	**- 2,10**	**<0,05**
	D	37,69	1,62	38,25	1,61	- 0,98	>0,1
Shot on goal (m)	F, D	**35,40**	**2,89**	**38,50**	**1,59**	**- 5,14**	**<0,01**

Thus, research results testify that at the end of experiment the indexes of technical preparedness of investigated experimental group substantially exceed the values of analogical indexes of sportsmen of control group, that testifies about efficiency of the experimental program of preparation of rugby-players and expediency of its introduction in a educational-training process.

Conclusions:

1. Rational correlation of the training loading is established in the structure of technical preparation, which is directed to development of basic physical internals (capabilities) of sportsmen-rugby-players in preparatory time.
2. The experimental methods of training of rugby-players, unlike methods which a control group studied, were directed to the increase and withholding at one level of adroitness with predominance of speed-power capabilities in a competition period.
3. The indexes of the investigated parameters of technical preparedness of sportsmen of experimental group exceed the analogical indexes of sportsmen of control group ($p<0,01$).

Prospects of further researches. It is planned to investigate tactical preparation of rugby-players of 16–18 years with the application of (with an account) experimental methods of training.

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HISTORICAL ASPECTS OF WEIGHTLIFTING IN KHARKIV

Abstract. ***Purpose:*** *to determine the features of development of weightlifting in Kharkiv.* ***Material:*** *studies were conducted on the basis of archival materials, protocols, competitions, publications, and other sources. Stages are investigated by the development of weightlifting in Kharkiv from inception to modern times.* ***Results:*** *weightlifting is such a sport that can compete be competed by both men and women. That makes weightlifting more democratic sport, unlike sports in which athletes can be participated of the same sex. Rregional centers are given insufficient attention to the development of the sport, but this problem began to be drawn attention soon in recent years. New halls are being opened in different parts of the region and the city, the number of athletes participate successfully in competitions of different levels, due to the intensive development of the sports movement in the world. Conclusions: weightlifting in Kharkiv is widespread and tends to be further developed.*

Keywords: *weight-lifting, Kharkiv, protocols, competitions, sports movement.*

Introduction: In recent years, more and more people are engaged in various sports. Quite a number of gyms are being opened, including a weightlifting hall. The ever increasing number of people willing to engage in this sport ; the number of athletes is increasing who participate in local and regional competitions. Fortunately, there were performances of Kharkov weightlifters in national and international competitions. Weightlifting, especially in the developed countries is growing rapidly, and sports management bodies faces the task of propaganda about the sport without pharmacological interventions. This issue is highly relevant in Ukraine. So important is the search for rational way out of this problem. Therefore, the study of various aspects of weightlifting in the Kharkiv region anyone better understands the benefits of the sport as an active human pastime. Analysis of weightlifting in Kharkiv, which is a physical activity available to people of all ages and material wealth, provide ample material for creative rethinking and forecasting future prospects and trends of the sport as an integral part of social life. The research results of well known sports professionals of Groth J. and M. Olejnik, shown that weightlifting in Kharkiv was not being developed necessarily at the same pace The sport. have had times of the rise and decline [10–13]. Since the early twentieth century weightlifting has been

developing quite rapidly. And in 1907, in Kharkov, the first international competition was held [10]. In the early 20 – s of the XX-th century in Kharkiv the first champions and winners of the country began to appear. In the early 40's sports activities in Kharkiv were not conducted due to WWII. And since the late 40's, early

50 's weightlifting in Kharkiv had been developed in greater rate [1], although from the 60 's to mid 80’ s for various reasons there has been a decline [1; 11; 12]. Reaserch of J. Groth M. and A. Zhykola show that true flowering of the sport beginning only in the mid 80 's, which thank to the talented athletes, coaches and sports personalities of the present [1; 4; 12; 13]. Also the subject of weightlifting in Kharkiv was considered by Lozovskii I. and Chimick and several other experts [1; 6; 9]. However, to-date no coherent historical and pedagogical research, which would be of theoretical and practical heritage to professionals concerning the sport with regard to the development of weightlifting in Kharkiv region, especially in towns.

How the study of scientific programs, plans, themes.

The research was conducted in accordance with the Consolidated Plan of research in the field of physical culture and sports in 2011–2015 within 2.12 topic "the formation of a multi- selection and orientation of athletes."

Objective: To determine the features of weightlifting in Kharkiv.

Methods: Analysis of scientific- methodical literature, review and systematization of the results of competitions at various levels.

Results and discussion. The first weightlifting club began to open before the revolution. In Kharkov, in the Shevchenko street the first hall of athletic gymnastics was opened in 1893 by the company of the cast iron Plant. Club was supervised by N. German Vilhalm. Newcomers at that time practiced twice a week in three times. Among the athletes performed well enough at that time were S. Gritsenko and V. Aleksandrovich. Competitions were held in parks and in the circus and included lifting various weights and fighting competitions. Athletic clubs at that time trainers were such outstanding athletes as P.L. Pylypeychenko, B. Protopopov, J. Miller, M. Pohrebyzhskyy, V. Sokolov, A. Postnikov [10]. In 1907 in Kharkov, the first international competition was held. The tournament was held at Circus Nikitin Brothers. Competitions lasted a long time (51 days) and they attended by athletes from France – Jean Kysso, Georgia – C. Mansuradze, Yugoslavia – M. Petrovic, Russia was represented by Soloviev and I. Zaikin. The winner was Ivan Zaikin. Kharkivate Soloviev raised by two hands in press – 275 pounds, jerk – 240, snatch – 320. After that company founded gymnastic athletic group in Institute of Technology. In this group worked V. Shishkin. In 1913 lifter league was created in town. It consists of 12 sections, which are mainly located in the basement and sometimes outdoors. But after the October 1917 revolution, the development of weightlifting somewhat was stopped. This was due to the First World War, due to the unrest in post-revolutionary times. The first competition, which was attended by athletes from Kharkov, held in 1922, and after it Kharkov regularly performed quite well (Table 1). During these years city championship had been regularly held among trade- unions. Particularly it had been won by a factory team HYEMZ, whose leader was Alexander Orleans [1; 10].

Table 1

Performance of weightlifters from Kharkiv in the pre-war years of the 20th century

Year	City	Competitions	Sportsmen	Standing	Weight-division
1922	Kharkiv	First Ukrainian Olimpiada	V. Pol O. Orlean L. Aleks I. Pidgurskiy	2 2 3 4	67,5 kg 82,5 kg 67,5 kg 82,5 kg
1923	Kharkiv	Spartakiada of Ukraine	P. Berg V. Pol Semenov L. Aleks M. Kondrusik	3 1 2 3 3	75 kg 67,5 kg 67,5 kg 67,5 kg 60 kg
1928	Odessa	Championship of URSR	B. Shapiro K. Benkis Shevchenko F. Ostapov	1 1 2 3	62 kg 67,5 kg 67 kg 67 kg
1935	Kyiv	Tournament of IX Komsomol rally of Ukraine	M. Kasyanik	1	60 kg 3 rec. Ukr.
1936	–	Match of national teams Ukratne vs Russia	G. Popov	1	67,5 kg 2 world records
1937	–	Championship of UkSSR	I. Kirichenko O. Zeddin	1 2	82,5 kg 56 kg
1938	Kyiv	Chapionship of USSR	I. Kirichenko O. Zeddin	3 9	82,5 kg 56 kg
1941	Kharkiv	Spartakiada of Ukraine	I. Kirichenko O. Zeddin	2 3	82,5 kg 56 kg

In 30 years Kharkiv began to practice various sports. Weighlifting was one of them to keep up. In local championships student of the Institute of Physical Culture Alexander Smushkevych began actively performed at the competitions [2]. He later became a medalist of USSR, and became famous as one of the leading trainers of Ukraine. In weightlifting the name of Georgi Popov appeared. He was one of the first athletes who used large training load in his preparation, to substantiate the frequency of changes in weekly cycles, and invented a new way of sitting at the barbell "split". He was the first Ukrainian heavy-weightlifter who had the world's highest achievement in the snatch – 98.2 kg, and in 1937 he was awarded the honorary title "Merited Master of Sports of the USSR" [16].With the start of World War 11 athletes went to the front, participated in the defense of their country. Kharkiv was repeatedly captured by the Nazis. Officinal competition were not held [8]. After the World war, the city began to open weightlifting sections in factories "Hammer and Sickle", "Elektrotyazhmash". Sports associations section was opened at the stadium "Spartak", "Windsor", "Vanguard", "Locomotive " and "HTZ". On the "Vanguard" Szeged John worked. He brought up the first Ukrainian Olympic champion in weightlifting Igor Rybak. The stadium "HTZ" a talented coach M. Svitlychnyi

worked – coach of Olympic champion Leonid Zhabotinsky. One of the main role in the athletic life of Kharkov in the postwar years NGO "Dynamo" had played. In 1947 Smushkevych O. became head coach of the weightlifting. "Dynamo" was the main center of weightlifting in the city and in Ukraine. He gathered around him many young heroes. One of these was Michael Cemel (in the future – coach Anatoly Pisarenko). The stimulus for the development of weightlifting in the region was the World Cup which was scheduled for the summer of 1947. In the city training camps saw the strongest weightlifters of the country. The team of kharkiviates Kalinichenko S. and I. Kirichenko were included. Weightlifter were not than once came to the stadium "Dinamo" Dzerzhinsky Square, set records in the city championship while the brightest were rivals M. Cemel and M. Svitlychniy Honored Coach of students – A. Pisarenko, L. Jabotinsky and Yu. Masurenko. In 1950 the kharkovites Masurenko J. and M. Cemel left the team. They moved to Kyiv. But a new generation of heavyweights began to grow up. With every championship began to progress the trainee O. Smushkevycha, Fyodor Osip, Mark Rudman, Igor Rybak and brothers – Yahly – Oglu (Tabtle 2).

Table 2

Club of heavyweights from the Kharkiv region in the 40–50s

Year	Ecounter of competitions	Contents	Sportsman	Place	Weight – division
1944	Vinnitsa	Championship of UkSSR	Smushkevich Kalinichenko S.	1 2	Middle Light
1949	Dnepropetrovsk	Championship of UkSSR	Kemel M. Mazurenko U.	2 22	Middle Light
1949	Cheljabensk	Tournament of USSR	Kirichenko I. Kalinichenko S. Kemel M. Mazurenko U.	2	Super heavy Middle Super heavy Light
1950	Kyiv	Championship of UkSSR	Kirichenko I.	3	Super heavy
1950	–	Championship of Trade-Unions	Kirichenko I,	3	Super heavy
1950	Kyiv	Championship of Soviet Army	Kalinichenko S.	2	MIddle
1952	Ivanovo	Championshipo f USSR	Osipa F.	2	Super heavy
1952	Kharkiv	Championshipo f UkSSR	Osipa F. Yagli-Ogli X.	1 3	Super heavy Half middle
1954	Petrozavodsk	Championship of USSR	Osipa F.	2	Super heavy

Table 2 continued

1954		XII Students Games	Osipa F.	1	Super heavy
1954	Stalino	Championship of UkSSR	Yagli-Ogli X. Rudman M. Ribak I. Serdjok A. Osipa F,	1 1 2 2 1	Under 75 kg Under 82,5 kg Light Super heavy Super heavy
1955	Simferopol	Chamionship of UkSSR	Ribak I. Yagli-Ogli X. Rudman M. Osipa F,	1 1 1 1	Light Under 75 kg Under 82,5 kg Super heavy
1955	Minsk	Championship of USSR	Osipa F. Yagli-Ogli X. Ribak I.	2 3 1	Super heavy Under 75 kg Light
1956	–	Spartakiada of Ukraine	Osipa F. Yagl-Ogli X. Rudman M.	1 1 1	Super heavy Under75 kg Under 82,5 kg
1956	Helsinki	Championship of Europe	Osipa F. Ribak I.	2 1	Super heavy Light
1956	Melbourne	Olympic Games	Ribak I.	1	Light
1957	Uzhgorod	Championship of UkSSR	Osipa F. Yagli-Ogli X. Yagli-Ogli M. Zhabotinsky L. Ribak I.	1 1 1 3 1	Under 90 kg Under 82,5 kg Under 67,5 kg Super heavy Under75kg
1957	Katowice	Championship of Europe	Rudman M. Yagli-Ogli X.	1 1	Under 82,5 kg Under 75 kg

1956 brought fans of the "iron game" good news from Melbourne. At the Olympics in the weight division up to 67.5 kg Igor Rybak. from Kharkiv showd total of 380 kg (110+120+150), he won the first place. It was the first heavyweighter from Ukraine, who won Olympic gold ! [1; 11; 14; 15]. This year I. Fisher with F. Osipa performed at the European Championships in Helsinki, they also pleased his supporters with the first place (see Table. 2).Next – weightlifters from Kharkov in 1957 also received their gift as winning the European Championship in Katowice. The winners in their respective divisions were Yagli-Ogli X. and M. Rudman [11; 17]. In the 60's there have been a trend to decline of weightlifting in Kharkiv, this was due to the wrong policies of sports. At this time, many sections began to close, communities, and instead opened training centers. In the early 60s Leonid Zhabotinsky moved to Zaporozhye. It was a big loss for the team. But anyway he brought up a lot of sport masters (MS). Among them are pupils M. Svitlychny Monozona L. and V. Feoktistova who set a record of Ukraine in the three exercises 437,5 kg. I would also like to note middleweighter B.S. Pavlov [3], later he moved to Donetsk. At regional competitions then successfully performed

Mohilner J. and L. Horonostayev [11]. In 70-s the decline in weightlifting continued. In the past J. Mohilner of "Locomotive" and V. Pakhomov from "Zenith in Dnepropetrovsk performed well". They took second place. Only after 1975 weightlifting gradually began to" come alive." During that time they began to work on "Spartacus" –Anatoly Kagal, the "locomotive" – Yahly Hasen-Oglu. His the most gifted trainee was P. Scheglov – Champion of International tournament in memory of John Sparre. Mustafa Oglu-Yahly worked at the Institute of NTT as a teacher of physical education. In Agricultural institute L. Gornostaev coached. He prepared M. S. Haynatskoho. In the 80-s there were many masters of sport. Weight=lifting slowly was coming to life. Actively Kaga was working. His trainee were B. Nowicki and A. Denisov, in 1980 reached standard MS and in 1984 Denisov became master of sports of international class (WCMS). B. Boroh in 1985 performed MS, in 1987 – WCMS, P. Scheglov – WCMS in. 1986, after a long pause, the city had held the USSR championship in weightlifting. This event also influenced on the further development of weightlifting in the region. Even more development took place in 90 years. In Kharkov the Institute of Physical Education was revived from a branch of Kiev Institute of Physical Culture. The institute opened weightlifting department headed by Honored trainer of the USSR, MS in weightlifting Z.S. Arhanhorodsky [4]. It was also opened Kharkov Higher School of Physical Education. The school began working by running of Honored coach of Ukraine A.A. Shaymardanov and V.N. Nikulin. They have brought up many MS and WCMS. Their pupils – champions of the country Nasibulin A., V. Shaymardanova, V. Maslovskaya, G. Krasilnykov, A. Torohtiy, I. Deha [4; 7; 13].Since the early 90's team always won the championship of Kharkov and of Ukraine. Weightlifting training among men began to attract women. Already at the first All-Union tournament for women 1991 in Mariupol, Kharkoviatrs competed in three weight-divisions. (see Table. 3). W. Paulish well performed (1st place). In the second place was V. Konovalova (V. Shaymardanova) and L. Kanunova [5], the latter after the career of weightlifter started practicing weights and, she achieved a high sports results, became (many-times champion of Ukraine and a five- time silver medalist and champion of World, 2010). These successful performances were supported by other females from Kharkov. Many times- winners and record-holders of this country were Sukhina A., A. Balanyuk, A. Kiriyenko, Y. Artemov, V. Maslovskaya, K. Rezinova [4; 13].From 2000 to 2010 many MS were brought up. Unfortunately, S.S. Sadykov moved to Russia and he left in "locomotive" the talented student V. Kiriyenko, who brought up many MS and WCMS. Also, that time in the locomotive O.V. Muravjov was working – the coach of many- times champion of the country and champion of the Olympic Games – A. Lihvald. 2012 was the particular year for Kharkiv. Apprentice of Alex V. Nikulin Alex Torohtiy at the Olympics in London in the weight – division of 105 kg won the first place, and in the next 2013 his student Irina Deha became silver medalist of the World Junior Championships in the- weight division of 69 kg (Table 3).

Table 3

Club of heavyweights from Kharkiv in 1980-2012 's

Year	Contest encounter	Competition	Sportsman	Place	Weight division
1988	Praga	World Cup	Nasibulin A.	1	56 kg
1988	Lutsk	Championship of Ukraine	Denisov A. Boroh V. Pavlish V.	1 1 1	100 kg 110 kg 82 kg
1989	Mayami	World Cup	Nasibulin A.	2	56 kg
1989	Saraevo	Championship of Europe	Nasibulin A.	2	56 kg
1990	Mtsensk	Championship of Ussr	Boroh V. Nasibulin A.	1 3	110 kg 60 kg
1990	Mariupol	Championship of Ussr	Kanunova L. Konavalova V. Pavlish V.	2 2 1	60 kg 67,5 kg 82,5 kg
2000	Sydney	OlympicGames	Lihney Krasilnikov G.	8 9	56 kg +105 kg
2004	Athens	Olimpic Games	Krasilnikov G. Masllovska M.	4 5	+105kg 69 kg
2008	Beijing	Olympic Games	Torohty O.	9	105 kg
2012	London	Olympic Games	Torohty O.	1	105 kg
2013	Uzbekistan	Championship among juniors under 17 years	Deha I.	2	+69 kg

Along with the development of weightlifting in the regional center, weightlifting in provinces developed quite sluggish. Most training facilities of weightlifting was only opened in the 80s of the last century (Table 4).

Table 4

The development of weightlifting in the regional centers of Kharkiv

Reginal center	Year of open	The most talanted trainee	Prepared MS & KMS	Coaches
Balakleya	**1983**	Deha i. Prize winner of championship of World among juniors.	12 MS	Medved O.A.
Valki	1984	Prize winners.. «'Kolos»		Fedotov V.V.
Krasnograd	1983	Familyanov V. – prize winner Kolos» Fokin V.. Cup of Ussr	3MS & 4 KMS	Kasatkin M.V., Buslov M.M.
Lubotin	1979	Kibalnik O. 1st pl.. Cup of Ukraine 2005	7MS & 20 KMS	Kibalnik O.G. Kibalnik O.O..

In 2013 a trend to the opening of the halls of weightlifting was marked. This kind of halls was opened in Pechenegi (coach – MLA of weightlifting Yuri Orlov), and in the village of Bezlyudivka (coaches – MS in weightlifting V. Aliyev and Yuri

Ponomarenko). The stadium NTZ again was the host of the school of weight –lifting (coach – MS in weightlifting Alexander Piven). Future champions in weightlifting who trained at these halls continued to mature (Table 5).

Table 5

Halls of Kharkov with sections in weightlifting

Name of the hall	Coaches
Junior sports school of Kharkiv tractor plant	O. Piven
KHOVUKS	V. Nikulin, E. Shilov, A. Shaymardanov, S. Kruglenko
НПІ	S. Glyadya
Builders training college № 1	A. Kagal, L. Kanunova
«Lokomotiv»	V. Kirienko
Aircraft Institute	M. Shafigulin, V. Chigov

Conclusions:

1. Weight-lifting for the Kharkiv regions was wide spread and tends to further development. The key to this fact was a longterm tradition in preparing top level weightlifters by coaches of Eastern part of Ukraine and performances of the best representatives of the Kharkiv weightlifting on the world arenas.

2. Weightlifting is such a sport which can be competed by both men and women. This makes weightlifting a more democratic sport, as opposed to those ones in which can be participated by only athletes of the same sex.

3. The promising way of development of weightlifting in Kharkiv is the discovery of new sports clubs, especially in parts of the regions, that will help to engage in regular physical training and sports (eg weightlifting) more children and adolescents. In further research we plan to explore the socio –psychological and physiological aspects of weightlifting.

Further researches plan to reveal the social-psychological and physiological aspects of weight-lifters development.

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MULTIMEDIA PROGRAMS FOR RELAXATION IN PHYSICAL EDUCATION OF STUDENTS OF SPECIAL MEDICAL GROUP

Abstract. ***Purpose:*** *of the study is to evaluate the efficacy of renewable means, using multimedia relaxation programs in physical education of students of special medical group. 48 students of special medical group of the first and second year of agrarian university took part in research.* ***Results:*** *The review of facilities of renewal of capacity is done. The comparative analysis was done for the relaxation programs. As a result of our research the program «Flight through Universe», having a great choice of video of the programs which meet with different requirements, was chosen. The vast majority of respondents (72,08%) point in favor of relaxation of a computer program and wish to use it for their own personal recovery. In work research vitally of important indexes was conducted at the beginning and at the end of employment.* ***Conclusions:*** *The obtained results of researches testify to the necessity of introduction in practice of tail-piece of stadies of students of the special medical department, facilities of renewal with the use of the relaxation computer programs.*

Key words: *students, physical, education, relaxation, computer, program.*

Introduction. The current state of modern society requires to update scientific issues related to the up building and improvement of health and physical education of students. In the view of the authors [6; 11], health problems – a result of the actions of internal stresses that occur in different ways, and they can not be removed without the active participation of the individual.

The current system of higher education requires of students to use during the training activities of various means aimed at restoring the functional state of the organism. Psychophysical training significantly increases the effectiveness of fitness classes through the introduction of strong reserves of the human psychic. Conscious by controlling functions of one's own body, according to the authors [2; 8] increases the reserves of health. Autogenic training is to deliberately bring oneself to a state of rest, which is directed oppositely stressful process. A group of German scientists W. König, G. di Pol, W. Schaeffer [12] warn against self-study autogenic training. Analysing of the scientific literature one should noted that the problems of self-control are devoted to a considerable amount of research of scientists [5; 11], but we

have not found works deal with combining these techniques with computer technology in higher education.

Information technology in the educational process have been used for the last quarter of the twentieth century. At the present stage of its wide distribution and integration the computer technology in the educational process, but they are far from covering all its branches. In particular, in physical education of students programs for relaxation has not yet been used.

The relevance of this study is that the usefulness of computerization is determined by significant achievements, educational, methodical and economic efficiency compared to traditional forms of restoration and is individually oriented. Computer technology as part of the Information Technology form fundamentally different style of work that is more psychologically acceptable, comfortable, mobilizing human intellectual capacity.

Using multimedia relaxation programs to restore the functional state of the body determined the chosen direction of our research. The work was performed under the plan approved by Ministry of Education and Science, Youth and Sports of Ukraine in 2012–2016 Related 91 "Theoretical and methodological foundations of individualization in physical education and sport " (№ state registration 0112U002001).

Purpose: of the study is to evaluate the efficacy of renewable means, using multimedia relaxation programs in physical education of students of special medical group.

Research objectives:

1. Examine methodological and specific sources dedicated to recovery means of work ability of special medical group;

2. Detected in the course of research the most effective measures of renewal of students of special medical group in physical education classes.

Results. Present day society requires solving one of the extraordinary challenges of our time, namely the introduction of innovative technologies available for preserving and improving human health.

According to the data of sociological studies [7, http://int-konf.org/konf032013/135-gurtova-t-v-nezgoda-s-p-nformativn-pokazniki-fzkulturno-sportivnoyi-aktivnost-studentv-specalnih-medichnih-grup-vnz.html], most of the students consciously relate to physical culture as a way of improving their own physical fitness and health, and determine the recreational focus as a priority, as well as motivational and valuable relationship to physical education possibly through the use of a differentiated approach, based on studying motivation and complex diagnosis of individual qualities of students.

Work [1] provides justification for the use of sports and health activities at places of residence for students, which can successfully implement for their self-education and self-improvement in order to prepare young people for future life.

The author of this paper [http://pda.regnum.ru/news/244524.html] introduces the application of the exogenous health improving technologies offering: juice-vitamin –, air – and aromatherapy, fito bar, massage and other treatments.

According to the authors of work [9; 10], active human life can be extended up to 120–150 years, deliberately adjusting the respiratory rate and volume of ventilation, normalize physiological processes. The proposed by V. F. Frolov the way of endogenous respiration is an example of applying additional artificial subsystems to the existing human respiratory system which is designed to significantly improve the technology of breath.

Recently in the literature [http://www.pravda.ru/science/mysterious/human/23-03-2013/1149460-music-0/#; http://www.dytyna.info/education/articles/any/5929] new ideas and approaches to the use of renewable relaxation using computer programs. Are widely discussed advanced practice shows that sports practice [3] and in physical education of different groups [http://health.passion.ru/novosti-zdorovya/zdorovyi-obraz-zhizni/kakaya-muzyka-polezna-dlya-zdorovya.htm] are already used relaxation programs. Of particular importance is a music and video compositions. Under the influence of rhythmic music the brain begins to adapt to this rhythm. In the literature [4, http://youryoga.org/med/relaxation/], this phenomenon is called "adjustment reaction of bioenergy brain". Moreover, the rithm can be not only audible but visual. A simple example of this influence is colorful musical setting where the sounds and flashes of color are syncronized – it only strengthens the brain.

We have conducted a comparative review available on the Internet multimedia programms of renewal. In most of them [http://www.mageric.net.ua/catalog _18_568_0_3.html; http://psyberia.ru/soft/softrelax] any preset can be changed for the awn discretion: all customizable, everything changes. The changes take effect immediately. *"Natura Sound Therapy"* is more focused on people engaged in various ways of programming our`s brain. If this is not necessary, in order to just relax, it mag be more useful program *"Aura forest"*. In audial psychocorrective program *"Relaxation"* in the unconscious, inaudible to the built form of consciousness suggestive settings and specially developed emotionally meaningful sounds. Passing by boundaries of consciousness, they penetrate into the deep structures of the psyche directly into the subconscious human brain clearing on what is disturbing "noise". *"Mirolit Halotea"* [http://mskd-ru.net/570069-soft_portable-halotea-1-401-portable-eng-rus.html] – audio player with which you can not only listen to the audio files, but also can create your own sound themes. The program already has a set of sound presets and themes. The program for relaxation *"Flying through the universe"* [http://youryoga.org/med/relaxation/] contains a large selection of video programs: "Flying through the stars", "Sunset on the beach", "Light the candle that burns", "Virtual Tour of Mars", "Near Mountain Lake", "Panorama of the sea", "universe of Love (inner smile)", "Valley of Eagles", "Portal of Time", "micro and macro cosmos", "Merkabah (double tetrahedron)" – beautiful and calming video with soft, meditative music and spatial movement. Presented program for relaxation can also be used in classes with students.

For objectification obtained analysis during program for relaxation of information the discussions with experts and surveys of students of special medical group was held. The study involved 48 students of the first and second years of Kharkov National Agrarian University taking up in special medical group for health

reasons. As a result of our study program "Flying through the universe", was chosen which has a large selection of video programs that satisfies different requirements.

During the teaching experiment we checked up the effectiveness of using multimedia renewal of the «Flying through the Universe." Students of the control and experimental groups were measured respiratory rate and heart rate at the beginning and at the end of classes.

In the control and experimental groups in the main part of the studies the same health complex exercise were conducted. In the control group in the final part the breathing exercises were performed and exercise to improve the emotional state of "inner smile ", and the final experimental part consisted of 20 minute watching one of students` favorite programs "Flying through the Universe " with a focus on diaphragmatic breathing.

In the study of the vital indicators it was found that respiratory rate and heart rate at the beginning of classes in CG and EG were homogeneous ($p>0.5$) (Table 1). At the end of classes figures were better in EG ($p<0.01$), proving the benefit of using a computer program relaxation in the final part of the session with the students of special medical department.

Table 1

Comparison of vital parameters at the beginning and end of sessions of the final sessions of the control (CG) and experimental (EG) groups

	Vital indicators	CG n = 16	EG n = 32	Student's criterion, t (p)
Start of classes	breathing frequency (times/minute)	19,63±2,52	19,11±2,39	0,81 (>0,5)
	Heart rate (beats/minute)	73±2,5	73,19±2,22	0,31 (>0,5)
End of lesson	breathing frequency (times/minute)	19,5±2,49	17,7±1,82	3,26 (<0,01)
	Heart rate (beats/minute)	75,58±4,56	73,51±2,38	2,32 (<0,01)

As a result of sociological research also obtained data on the attitude of students of special medical groups to recovery using relaxation software. The vast majority of respondents (72, 08%) point in favor of relaxation of a computer program and wish to use it for their own personal recovery.

Conclusions:

1. After the analysis of programs carried out for relaxation, "Flying through the Universe» is selected as the most suitable for use in the classroom with students of special medical department.

2. The obtained results indicate the need for implementation in practice of the final part of training students of special medical, department means of recovery using relaxation software.

It is foreseen to conduct subsequent researches in direction of deep study of application of restoring facilities with the use of relaxation of the computer programs in physical education of students of the special medical department.

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ESTIMATION OF THE PSYCHOPHYSIOLOGICAL STATE OF SKILLED FOOTBALLERS

Abstract. Purpose: *establishment and analysis of data about the psychophysiological state of skilled footballers of different FC by means of computer tests.* ***Material:*** *in an experiment skilled footballers participated: 21 player of professional FC "Erbil" (Erbil, Iraq, and 19 players of Ukrainian FC "Helios" (Kharkiv, Ukraine). The changes of the psychological state, which took place under act of the worked out methods directed on improvement of technique-tachnical preparation of the specially-preparatory stage of annual cycle of preparation of footballers of professional clubs. Results: the indexes of time of simple and difficult motive reaction, maximal frequency of motions by means of tepping-test speed after the reed-black tables of "Shulte", exactness and speed of tactical thought, property of attention.* ***Conclusions:*** *it is confirmed, that time of skilled footballers which occupied on experimental methods time of difficult motive reaction less than for footballers which occupied on the generally accepted methods. For footballers a tendency comes to light also to diminishing of time of simple motive reaction.*

Key words: *cognitive, psychology in sport, psychofisiological state of footballers, computer tests, time of simple motive reaction, time of difficult motive reaction.*

Introduction. In the last few years progress science was substantially extended and deepened knowledge about conformities to law of the psychical adjusting of activity of sportsmen, individually-psychological determination of motive activity, features of processes of self-regulation of the functional state. Sports psychology more accents the interests on the individual and socialpsychological levels of sporting activity. Especially considerable backlogs of increase of results in sport specialists expect in connection with the use of cognitive functioning of personality [1; 3; 5; 8]. Selection or selectivity of cognitive processes is one of central problems of modern researches which are conducted within the framework of cognitive psychology. Attention reflects the orientation of a complex activity of man and exactly in his correlations of subject and object find the reflection: selection of the most substantial irritants, readiness to the urgent operating on a signal and decision-making in the conditions of privation of time and information and the like [6].

In a theory and practice of preparation of footballers of high qualification one of issues of the day the problem of optimization of mental condition of sportsmen continues to remain with the purpose of realization of the personal creative potential of separate players and team on the whole.

Practice of preparation of punters of skilled teams especially during preparation to participating in important competitions, testifies to the necessity of the integration approach to the decision of this problem. Such integration mean, in our view,is creation in realization of playing activity of ever footballer.

Connection of work with the scientific programs, plans, themes. Research is executed in obedience to the Erected plan of SRW in the field of physical culture and sport for 2011-2015 of Ministry of education of Ukraine after a theme 2.3 "Scientifically-methodical bases of improvement of the system of preparation of sportsmen in football taking into account the features of contention activity"; according to the list of priority thematic directions of scientific research-and-developments for 2013-2015. Kharkiv state academy of physical culture on theme: "Scientifically-methodical bases of training process and competitive activity" and also in obedience to the Initiative theme of SRW of department of football and hockey of the Kharkiv state academy of physical culture for 2011-2015 "Optimization of educational-training process of footballers of different qualification".

Research objective: to define the level of display of some psychofisiolgical indexes of the Iraqi footballers under impact of the experimental methods worked out by us and compare them to the analogical indexes of the Ukrainian skilled footballers.

Material and research methods. For achievement of the optimal state of preparedness at which independence and arbitrariness of actions appears most full we applied methods which included the series of the specially organized exercises directed to to the improvement of tactic preparation during the specially-preparatory and pre-contention stage of training period of experimental group essence of which was in the increase of amount of time on technique-tactic preparation from 9% to 25–30% from the incurrence of training sessions.

Measuring of psychophysiological indexes was conducted during complex control before the beginning of contention period in 2013 in control and experimental groups.

An experimental group (n=21) which practiced on the worked out methods consisted of skilled footballers of professional FC "Erbil" (Iraq Erbil), which participated in championship of Iraq football in 2013. A control group (n=19) consisted of skilled players of Ukrainian FC "Helios" Kharkiv which participated in football championship of Ukraine in first league in 2013.

For research of cognitive features of footballers computer tests were used. They estimate in the interactive mode the numerical parameters of concentration, firmness and distribution of attention. Besides, computer tests are provided with an analytical block which determines such features as a mental capacity, rate and switching of attention.

Tests are worked out for the use in the environment of Windows, provided with corresponding databases and statistical methods of processing of results of researches. They are used in research work of department of informatics and biomechanics of the Kharkiv state academy of physical culture.

Results of researches and discussion. As a result of research of psychomotoric functions of skilled footballers which participated in an experiment, it turned out that in the conditions of purposeful preparation which required the maximal approaching to contention activity, orientation them corresponding reactions it appears variously. Yes, at verification of level of corresponding psychomotoric reactions by computer diagnostics for the skilled footballers of simple visually-motive reaction, difficult motive reaction, maximal frequency of motions by means of teping-test, speed on count of the red-black tables of "Shulte, exactness and speed of tactical thought were obtained the following results.

The row of the investigated parameters which characterize sportsmen has considerable conservatism. To such parameters it is possible to take some psychological indexes which characterize next faculties: memory, thought, speed of processing of information, indexes of sensomotorics and other properties of the nervous system. Exactly they most ponderable for prognostication of efficiency of sporting activity, especially in a period of preparation to the important competitions for professional footballers.

With the purpose of establishment of influence of a number of internalss on forming of technique-tactic actions during research their changes were tested under influence of training sessions for the footballers of control and experimental groups. All researches were conducted at the beginning and at the end of experiment (table. 1, 2).

Table 1

Indexes of time of simple motive reaction on the light signal of skilled footballers, мs

№	Groups	Initial indexes $\overline{X}_1 \pm m_1$	Eventual indexes $\overline{X}_2 \pm m_2$	t	p
1.	Control (n=19)	250,21±4,29	245,23±4,91	0,76	>0,05
2.	Experimental (n=21)	240,13±2,97	230,12±3,10	2,33	<0,05
3.	t	1,93	2,60	-	-
4.	P	>0,05	<0,05	-	-

However the initial middle index of time of corresponding photoharmose (see a table. 1) for the footballers of control group presented 250,21 мs, and to the end of research he diminished on 4,98 мs and began to be evened 245,23 мs (t=0,76; p>0,05).

In an experimental group similar changes took place also. However the middle index of time of corresponding reaction on a light signal in this group diminished on 10,01 мs and laid down at the end of research of 230,12 мs (t=2,33; p<0,05).

Comparison of results of corresponding reactions of footballers of control and experimental groups obtained at the end of research shows that between these groups already there are certain differences which arrive at 15,11 мs at the corresponding middle indexes of 245,23 мs and 230,12 мs in behalf on experimental (t=2,60;p<0,05).

The data obtained, to our opinion, testify to efficiency of the methods of preparation of footballers of experimental group applied by us to the competitions by

application of training tasks directed to development of tactic preparation. Taking into account, that time of simple motive photoharmose represents the motor component of activity of sportsman-footballer as an answer for the produced stimulus and expressed by one simple operation – pressure of the button on the "mouse" of computer which fixes the result of the action speed. However, in the real terms footballers run into more difficult types of reacting and, in particular, with the necessity of choice from a few irritants exactly one to which it is necessary to give a corresponding reaction.

In the conducted research the speed of the difficult reacting was estimated for the footballers of control and experimental groups, which was conducted by the simultaneous producing on the monitor of computer of five circles (four in corners,the fifth one on a middle) of different color (black, yellow, dark blue, blue, green). According to instruction an examinee was to find and choose one of circles, color of which an experimenter specified verbally to him. A choice was carried out by tricking into of indicatory pointer to the select circle and fixing of account of time, which begins from the moment of appearance of circles on the screen to the monitor, conducted by pressure of the key on the "mouse" of computer. On the program, after every producing, circles changed the place of location.

The results of researches, in which speed of the difficult reacting was estimated for the footballers of control and experimental groups, are given in a table. 2.

Table 2

Indexes of time of the difficult reacting on producing of five irritants of different color of skilled footballers, мs

№ from/p	Groups	Initial indexes $\overline{X}_1 \pm m_1$	Eventual indexes $\overline{X}_2 \pm m_2$	t	p
1.	Control (n=19)	550,12±4,31	545,43±3,93	0,80	>0,05
2.	Experimental (n=21)	550,64±3,05	535,16±2,54	3,90	<0,001
3.	t	0,09	2,19	–	–
4.	p	>0,05	<0,05	–	–

It is educed as a result of the conducted researches that on the average of the footballers of control group at the beginning of research spent on the action of 550,12 мs and in the end this index became better on 4,69 мs (t=0,80; p>0,05). A similar tendency is observed for the sportsmen of experimental group. Comparison of initial indexes of experimental and control groups of footballers in speed of reacting on the location marked with coloured circle did not educe reliable differences between them (t=0,09; p>0,05). At the end of experiment the sportsmen of experimental group also had a tendency to the improvement of speed of difficult reaction of choice as compared to control one on 10,27 мs (table. 2). Findings testify to more rapid orientation in the choice of circle of necessary color of footballers of experimental group that, in our view, testifies to the improvement of speed of their reaction which develops in the process of educational-training sessions offered by us.

The acceleration of motive reactions for the footballers of experimental group testifies to stimulation of central nervous system (cns). On this basis extrapolation

rises in the plan of adequate choice which especially registers in the last researches [2; 4; 7].

On results the analysis of indexes of footballers in maximal frequency of motions it is possible to assert that one of mechanisms of upgrading of speed there is an improvement of lability of nervous processes.

As known attention plays the special role in the field of display of a technique-tactic activity of footballers of professional soccer teams. It is related to that high level of automation implementations of certain tactic actions which appear in such elements as a ball moving and passing of ball, movement on the field and shots on goals included the corresponding degree of action of properties of attention. The meaningful indexes of attention which are educed, to our opinion, provide success of implementation of necessary technique-tactic actions in the game of footballers by forming and accumulation by them certain skills and also experience of implementation of rather difficult exercises and combinations.

The level of development of functional preparedness of footballers is based on speed endurance, ability quickly and correctly to move on the field which is provided by development and display of such psychological factors as indexes of efficiency of action of properties of attention, display of confidence of conduct in the situations of sporting activity. As known, perfection of motor technique-tactic actions is a basic task for the skilled footballers of different teams.

Meaningful influence of the of efficiency index of action of properties of attention on success of competitive activity with skilled footballers is explained by the fact that they in the process of game not always in good time and operatively distinguish the main thing in playing actions on the soccer field. Attention of players of soccer teams of subzero qualification is characterized as dissipated as it in a sufficient degree not developed that is expressed in absence of ability to provide for and elect a necessary (concrete) game situation related to the actions of sportsman with a ball. Besides, as results of the researches carried out by us the efficiency indexes of the attention properties actions of footballers of professional teams of high qualification allow them due to saving physical capacity at play more effective to execute the large volume of techique-tactic actions.

Conclusions:

1. In scientific and methodical literature the problems which touch researches of psychophysiological internals of sportsmen are studied in detail. But there is a question of study of indexes of teams and, in particular, footballers of different qualification exposed thoroughly not enough.We pay attention on circumstance that now researches conducted in the field of perfection of psychological internals of footballers does not give exhaustive answers about what properties of sportsman are most essential for strengthening and stabilizing of their individual sportive possibilities.

2. Finding testify to the changes in speed of corresponding motor reactions on a light irritant and efficiency of the applied methods of preparation of footballers of experimental group to the competitions by application of training tasks directed to the improvement of technique-tactic preparation.

3. It is revealed that TDMR (time of difficult motor reaction) for skilled footballers which trained by experimental methods less than for footballers which trained by the generally accepted methods. For footballers a tendency comes to light also to diminishing of TSMR (to time of simple motive reaction). The sportsmen of experimental group perfect the capacity for switching attention in different moments of time from external objects (decision of technique-tactic tasks) on control after the internal feeling that provides economizing of physical capacity at play that, in turn, assists more effective implementation of necessary technique-tactic actions.

4. The experiment conducted with the skilled footballers of the Iraqi professional club "ERBIL", with application of training tasks of different orientation and sequence specifies that methods of technique-tactic preparation by way of the increase of amount of time from 9% to 25-30% from the general amount of training sessions is effective.

The prospects of further researches consist in realization of comparative analysis of the obtained indexes of estimation of the psychofisiological state with the analogical indexes of skilled footballers of different teams and roles and also determination of psycophysiological indexes and their values on the different stages of annual cycle of preparation of skilled footballers and players of leading national teams of Europe and the world.

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MEANS AND METHODS OF THE INCREASE OF A FUNCTIONAL CONDITION OF SENSORY SYSTEMS AT CHILDREN WITH VISUAL IMPAIRMENTS – IN MODERN SCIENTIFIC RESEARCHES

Abstract. ***Objective****: to identify scientific Ukrainian and foreign literature studies dedicated examining and improving the functional state of sensory systems in children with visual impairments****. Material:*** *materials of researches of the Ukrainian and foreign researchers are analysed.* ***Results:*** *the study reflects the presence of many works devoted to correction of abnormalities of view. Researches, concerning increase of a functional condition of acoustical and tactile analyzers in literature available to us practically never occurs. However, in scientific studies have not found materials aimed at improving the functional state of the vestibular analyzer.* ***Conclusions:*** *because of the importance of hearing, vestibular and tactile analyzers for children with impaired vision arises the problem of search of means and methods of increasing the functional state of visual, auditory, vestibular, and tactile analyzers of children with impaired vision, particularly at the middle school age.*

Key words: *analyzer, vision disorders, vestibular apparatus, touch, short-sightedness, visual impairments, auditory perception, functional state.*

Introduction. The sharp reduction of physical activity of modern school students and the increase in visual loadings led to serious diseases and visual impairments [10; 29]. It is established that more than 50% of modern school students have short-sightedness, the century changes of an eye which lead to far-sightedness also grow. The disturbing tendency of the increase in visual impairments not only decrease now, but also doesn't stabilize [25].

The visual analyzer interacts with motive, tactile, acoustical and other analyzers. It provides the performance of difficult visual functions from which the main are functions of the central sight, light sense and color sense [26].

Researchers note the great value of hearing for blind and children with vision disorders in processes of knowledge of the world around, spatial and social orientation.The increase of acoustical sensitivity at visual impairments arises thanks to more active operation of the acoustic analyzer in conditions which change, and are a consequence of the strengthened training, special orientation and study. At persons with visual impairments the decrease of absolute and differentiated thresholds of acoustical sensitivity is observed. Also the hearing compensates visual impairments and helps to get rid the difficulties caused by this pathology [7].

The vestibular analyzer at children with visual impairments receives additional information from different statoreceptors, informs a brain on position of a body in the

space of rather surrounding subjects and, if necessary, increases the static sensitivity. The change of a functional condition of a vestibular mechanism conducts to increase of its sensitivity. In a number of researches [2; 6] it was revealed that at children who poorly sees, the vestibular mechanism develops, under other equal conditions, it is better, than in those who sees normally. The increase of different types of sensitivity, the ability to differentiate thin the external influence considerably compensate visual impairments in the course of spatial orientation. It should be noticed that in normal conditions the spatial orientation is provided with joint activity of visual and vestibular touch systems [24].

In informative relation the tangent feelings are of great importance. It is known that touch formation as independent process is carried out at children with visual impairments more slowly, than who sees well. Qualitative differences between children who sees well, and children with visual impairments don't disappear throughout the study at school. Notable information can be received by means of certain movements. But, as a rule, tangent movements at school students with vision disorders differ poverty and monotony, often remind manipulative movements. All this causes the necessity as soon as possible to begin the adjustment work concerning the enrichment of tangent movements, using gradual complication of methodical methods of the study.

Kinematic feelings which are substantially connected with sight and tactile perception [23] concern to the active informative means.

Due to above-mentioned the relevance of the research consists in need of the search of the ways of the increase of a functional condition of visual, acoustical, vestibular and tactile analyzers.

The connection of the work with scientific programs, plans, subjects. The research is carried out according to the Thematic plan of the research work of Kharkiv state academy of physical culture for 2013–2015 on the subject "Theoretical and applied bases of the creation of monitoring of physical development, physical preparedness and physical condition of different groups of the population".

The aim of the research: to define means and methods of the increase of a functional condition of visual, acoustical, vestibular and tactile analyzers at children with visual impairments.

The material and methods of the research: the analysis and the generalization of scientific and methodical literature.

Results of the research and their discussion. Considering a perspective of the research of children with visual impairments, there are different ways of the increase of perception of subjects and the environment phenomena.

B. V. Sermeyev (1987) suggests to use the following means and methods of development of visual perception at children with visual impairments which can be used in the course of physical training in a family and school: exercises on the development of spatial perception, exercise on the improvement of the central and peripheral sight, exercise at the exception of the central or peripheral sight, special exercises for training of oculomotor system, game which promote the training of visual functions.

Steve Shenkman (1992) offers specially developed complexes of physical exercises from different starting positions for the prevention of the emergence and progress of short-sightedness, the method "a tag on glass", general-developing exercises in combination with movements of eyes. As a result of the performance of these exercises process of the progress of short-sightedness stops quite often or slowed down on condition of taking into account of all indications and contraindications for each degree of short-sightedness.

S. V. Bondarenko (1993) offers such specialized visual games for the prevention and correction of visual impairments – "A colored mosaic", "Far – close", "Shooters", "From what team the boys are dexterous ", "Catch a hare", "Rotation", "Colored dreams", "Brooms", "Blind man's buff".

E. S. Avetisov, B. I. Kurpan, T. I. Livado (1980) direct a complex of exercises for the prevention of the progress of short-sightedness.

I. V. Geroyeva (1996) considers that for the improvement of a technique of the prevention of short-sightedness in a system of physical training of school students of younger school age, it is necessary to include special exercises in classes for trunk muscles, adaptation sports for training of the device of accommodation, the exercises aimed at the development of static power endurance.

O. I. Makarenko (2000) suggests to include in the content of classes after physical training at boarding schools for the visually impared children of 13–15 years old complexes of general-developing and special exercises for eyes by the adapted technique. Their appendix is carried out taking into account a disease of an organ of vision and allows to improve physical development and motive readiness of children.

T. Y. Krutsevich (2012) notes that sufficient oxygen providing is of great importance for an organ of vision. Therefore respiratory exercises which improve organism oxygenation, have improving effect and on an organ of vision. Respiratory exercises are carried out both at the beginning of gymnastics for eyes, and during special exercises for them. To gymnastics for eyes exercises enter: for cervical department of ridge and neck muscles which improve brain and organ of vision blood circulation as a whole; are directed on oculomotor muscles; for training of a refraction and eye accommodation; on a relaxation of muscles of an eye and "a rest" of an optic nerve. In her opinion, the gymnastics for eyes needs the observance of the corresponding sequence performed by exercises and a control of the principle of systematicity carrying out classes.

Many authors (W. H. Bates, M. D. Corbett, 1990; W. H. Bates, 1990, 1995; M. D. Corbett, 1990, 1995; G. G. Demirchoglyan, 1995, 1996, 1997, etc.) offer the exercises developed by them and the games directed on the correction and improvement of sight, they can be used during classes at home, on a workplace and at lessons on physical culture.

L. V. Myasnikova (2005) developed the contents and a technique of special correctional classes on the development of a touch and a small motility as means of compensation of visual insufficiency at children of younger school age with visual impairments.

L. B. Osipova (2010) developed the program for the development of a touch and a small motility as means of compensation of a visual shortcoming at younger preschool children with squint and amblyopia in the conditions of specially organized correctional works with inclusion to its contents the preparation of hands for tangent inspection of subjects, formations of tangent inspection with the use of touch standards, tangent inspection and perception of subjects, skills and abilities of the use of a touch in the course of productive play and household activity.

N. A. Voronokova (2009) suggests to develop acoustical perception at children of preschool age with visual impairments on classes on music.

L. P. Bogdashkina, A. I. Besedina, V. Z. Deniskina (2010) with visual impairments developed the program which is calculated on 4 years of the study for the development of acoustical perception in children. It provides carrying out individual, subgroup that group classes once for a week in the form of developing, didactic, subject role-playing games, exercises, mini-competitions, games competitions, walks, excursions. The program is constructed by the concentric principle and consists of 7 main sections: diagnostic inspection, introduction in a course, standards of sounds, formations of abilities to differentiate and localize different sounds, development of acoustical perception of a voice, development of acoustical attention and memory, formations of abilities to use hearing in different types of activity, a concluding session. Diagnostic materials to classes can be: a set of sound subjects, audio system, a set of compact disks and audio cassettes with record of people around of the person of sounds and noise.

Thus, experts in the sphere of correctional pedagogics and ophthalmology developed and recommended for the use means and methods directed on the correction and increase of a functional condition of visual touch system. At the same time, in available literature the works devoted to increase of a functional state of the vestibular analyzer aren't met and there is an insignificant number of the works devoted to the correction of a functional condition of acoustical and tactile analyzers at children of school age with visual impairments.

Conclusions:

1. Analysis of scientific and methodical literature testifies to the existence of researches which open especially important role which is played in lives of children with visual impairments by acoustical, vestibular and tactile analyzers for knowledge of environment, spatial and social orientation; about the existence of a large number of the works devoted to the correction of sight at children of different age. The insignificant number of the researches is revealed that devoted to the increase of a functional condition of acoustical and tactile analyzers, but they concern mainly children of preschool and younger school age. The scientific researches devoted to the increase of a functional condition of vestibular analyzer at children with visual impairments in literature available to us aren't revealed.

2. Due to the tendency of the decrease in sight at younger generation and the special importance of a functional condition of acoustical, vestibular and tactile analyzers for the activity of visually impared children, an urgent problem of the search of means and methods of the increase of a functional condition of visual,

acoustical, vestibular and tactile analyzers at children with visual impairments appears, in particular in the middle school age.

The prospect of the subsequent researches: to pick up, experimentally to check and introduce means and methods directed on the increase of their functional condition of visual, acoustical, vestibular and tactile analyzers in the program on physical training of children of the middle school age with visual impairments.

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EFFECT OF PHYSICAL REHABILITATION FOR MUSCULOSKELETAL SYSTEM AND THE IMMUNE SYSTEM OF ADOLESCENTS WITH DISORDERS OF POSTURE

Abstract. ***Purpose:*** *to study the effect of physical rehabilitation of posture in adolescents 11–14 years on the locomotor system, the concentration of T and B lymphocytes and immunoglobulins their blood.* ***Materials and Methods:*** *the analysis of changes in functional manifestations of muscle groups of the back and abdomen, spine mobility and components of humoral and cellular immunity in children aged 13–14 with kyphotic posture (17 boys and 21 girls).* ***Results:*** *physical rehabilitation was the use of the system of physical exercises and dynamic statically nature, designed to strengthen the muscles of the torso. In a complex with these exercises a course of laser biostimulation is used of biologically active points. After this course an increase in endurance in the muscles of the back and abdomen was revealed, as well as the mobility of the spine.* ***Conclusions:*** *analysis of components of the immune system (Ig A, Ig M, Ig G) and T-lymphocytes and B-lymphocytes shows the growth of its activity, that is treated as an increase in capacity of the organism to children' resistance. In this regard, the influence of the factors used by us in physical rehabilitation can be regarded as stress-geneous, however stipulating the positive results to cope with the violations of posture in adolescents.*

Keywords: *kyphotic posture, adolescents, physical stamina, the immune system, eustress.*

Introduction. Violations of carriage in ontogenesis of man take place in different age-related periods; they present the special danger in a childhood and juvenile periods. The last decades are characterized by the increase of amount of persons, having violations of carriage. It is known that different types over of this pathology for children and teenagers, unfortunately, lead to the development of morphofunctional changes not only in a spinal column: there is deformation of spine, takes place, biomechanics of joints gets worse. The changes of biomechanics of spine entail degenerative – dystrophic transformations of the intervertebral disks, forming of hernia and violation in an arthral-ligamentary system. Under violations of carriage dysfunctions of the diaphragm, internal organs appear, a normal laxation is violated, the functions of stomach get worse, the discharge of bile gets weak.

For this reason, a timely correction of carriage of children and teenagers is the live issue in a physical rehabilitation.

Research of violations of carriage, its treatment and corrections attention has been paid upon during many decades. In a view of that a number of methods were

worked out and successfully used, those determining an improvement, correction and treatment of changes in fabrics of spine ligaments of cartilages and muscles [6; 13; 20; 21]. At the same time, the amount of persons, affected by this pathology, does not diminish. So, from data of N.I.Sokolova, deformations of spine have from 60 to 80% schoolboys 13–15 of age [18].

The use of medicinal methods of affecting structural components of spine, at the sufficient amount of positive moments, has a number of negative consequences [11; 19].Lately, researches are emerging more and more, in which data are presented about a successful correction, the restoration effects, morphocreative and compensative influences, obtained because of application of different types of physical exercises, often used in a complex with physical therapy and physical factors [2; 5; 12; 14].

At the same time, it should be noted, that application itself of physical exercises for the rehabilitation of violations of carriage did not find synonymous interpretation of different authors. So, for example, in V. Yegorkin's scientific work with this point the physical exercises of dynamic character are recommended, and he, as well as N. B. Greida with co- authors, consider that they in the best way ensure the correction of carriage [5; 8]. However, there is an opposite point of view. The point is that forbidden by the system of medical physical culture static exercises, presently acknowledged as effective ones during the rehabilitation of patients with pathology of locomotor system [7; 10].

Efficiency of application of different exercises, their complexes, use of them in an aggregate with physical therapeutic means and methods were checked up by researchers with the analysis of their effectiveness on a locomotor system, cardiovascular, respiratory systems and on biomechanics indexes [3; 4; 9; 16; 17]. However, researches of influence of physical rehabilitation of violations in teenagers' carriage on their system of blood and, especially, on immunity were not discovered by us.

Research purpose: to study influence of physical rehabilitation of carriage for teenagers 11–14 years on a locomotorium, concentration of T and B- lymphocyte and immunoproteins of their blood.

Material and research methods. Research was conducted on the base of Institute of children and teenagers' health of Ukraine. The teenagers of both sexes of 13–14-years-old age (n=38) took part in research, having violations – kifotic carriage. Among them are 17 boys and 21 girls. They were divided by the method of random sample into two groups: basic (n=19) and control (n=19).

The schoolboys of control group took up on the generally accepted methods, only LFC, mainly on recommendations of B. A. Yepifanov [9]. The teenagers of basic group executed exercises of LFC only in preparatory and final part of. Basic part of training was conducted on methods, described in works of O. V. Pechkova, E. N. M yatyga, E. V. Bysmak, N. V. Goncharuk, T. G. Christoyeva [10; 16; 17].

The feature of the used complex of exercises was what, that at first, exercises were selected up, from one side, increasing power endurance of muscles, and from other – estimating their capacity for tension, thirdly, the physical loading was

reckoned with approximately identical intensity on muscles-antagonists, i.e. flexor and extensors; fourthly, exercises alternated on influence on the "opposite areas of body, namely, that after exercises on strengthening of abdominal muscles were followed by impact on loin and after acting on the muscles of breast followed influence on extensors of back; fifthly, exercises were both of dynamic and static character, but the last ones prevailed; sixthly, exercises with feetballs and special attention was paid to respiratory exercises and on relaxation. Every exercise was repeated no less than 15 times.

The structure of pursuits included three parts: preparatory, lasting 15 minutes, basic – 30 minutes and final – 15 minutes. Employments were conducted daily during 30 days.

Since the second half of course, before the beginning of pursuits the laser biostimulation of was carried out for the children of basic group of bioactive points (BAT) 4GI and 36E, which on a physiological action in physiotherapy are considered as of generall power. Lazerpuncture (for 15s with on one BAT) was carried out through a semiconductor laser generator "Sphere 2-M", specifications of which are as follows: wave-length – 0,63 mkm, power of beam of light on the end of light-pipe – 8–10 Mv T/of см2(- 1), the mode of action is impulsive. Duration of course – 9 days.

Another feature of the conducted physical rehabilitation was a presence in its methods of psychotherapy aspects of affecting patients. Before the beginning of pursuits the children were explained in an accessible form, what violations were present in their carriage, what changes in this connection can happen in their body and that we will warn worsening of their state and will eliminate violations through interesting and desirable for them exercises.

Concerning a laser biostimulation it was explained, that small laser rays like the sun, only they are collected in a beautiful red bunch and certainly will increase their forces. It should be needed to evoke interest of children to the carried out procedures and maximal confidence in what, that they are useful and that after their application kids will become healthy.

Research methods: content-analysis of medical cards, testing of mobility of spine, to dynamic and static endurance of muscles of back and stomach [17].

In the serum of blood were exposed the immunoproteins of different classes: Ig A, Ig G, Ig M, and also concentration of T and B- lymphocytes. Reactivity of the system of humoral immunity was investigated at functional tests in the blood serum by the method of radial immunodiffusion by recommendations of Mancini [1].

Quantitative data were processed by the methods of mathematical statistics on recommendations of O. P. Mintser and co-authors [15].

Research results and their discussion. Diagnostics of the state of locomotor system and immune system of children was carried out at the beginning and at the end of course of physical rehabilitation. In table 1 the data obtained at the beginning of course are presented.

Table 1

Indexes of function of components of locomotor system of children 13-14 of age at the beginning of course of physical rehabilitation,(X±m, n=38

Scales	Boys		t	p	Girls		t	p
	Basic	Control			Basic	Control		
1 (c)	37,46±0,056	37,58±0,052	1,6	>0,05	31,12±0,38	31,2±0,42	1,7	>0,05
2 (c)	20,04±0,025	20,11±0,028	1,9	>0,05	17,25±0,027	17,18±0,026	1,9	>0,05
3 (c)	127,55±0,078	127,76±0,083	2,1	<0,05	105,21±0,021	105,17±0,018	1,5	>0,05
4 (c)	86,44±0,067	86,57±0,072	1,3	>0,05	70,63±0,19	71,01±0,18	2,4	<0,05
5 (cm)	6,53±0,12	6,85±0,14	1,8	>0,05	7,04±0,21	7,10±0,27	1,8	>0,05

Note. *1 – dynamic endurance of muscles of extensors back; 2 – dynamic endurance of muscles of abdominal press; 3 – static endurance of muscles of extensors of back; 4 – static endurance of muscles of abdominal press; 5 – mobility of spine.*

It should be noted, that on the initial stage of rehabilitation practically all measurable indexes of both dynamic and static endurance and mobility of rachis for the children of both sexes did not achieve the age-related norm and were not differentiated in control and basic groups.

Realization of trainings with the use of complex of exercises and laser biostimulation caused the substantial changes of the investigated parameters and functions of locomotor system (table 2)

Table 2

Indexes of function of components of locomotor system of children 13-14 of age at the end of course of physical rehabilitation,(X±m, n=38

Scales	Boys		t	p	Girls		t	p
	Basic	Control			Basic	Control		
1 (c)	74,83±4,01	60,02±3,86	2,7	<0,05	65,44±1,71	59,56±1,45	2,6	<0,05
2 (c)	38,77±3,40	28,11±3,30	2,3	<0,05	35,56±4,26	26,18±4,16	2,6	<0,05
3 (c)	162,68±8,17	135,43±7,26	2,3	<0,05	120,58±4,16	105,33±3,75	2,7	<0,05
4 (c)	118,64±4,16	104,72±3,75	2,5	<0,05	90,33±4,32	74,18±4,23	2,7	<0,05
5 (cm)	8,79±0,36	7,53±0,31	2,7	<0,05	8,90±0,51	7,40±0,43	2,3	<0,05

Note. *1 – dynamic endurance of muscles of extensors of back; 2 – dynamic endurance of muscles of abdominal press; 3 is static endurance of muscles of extensors of back; 4 – static endurance of muscles of abdominal press; 5 – mobility of spine.*

Thus, duration of raising of trunk from position forebend to returning in a starting position for boys, as compared to control, increased by 14,81 s. and for girls – by 5,88 s.

Time of raising of feet to the direct corner in hang swing also increased for boys and for girls accordingly by 10,66 and 9,38 s. It means that the conducted course of physical rehabilitation caused the increase of dynamic endurance of abdominal muscular groups and, providing motions in the lumbar department of spine, it was very substantial for strengthening of all muscular –ligament system of this area and also positively makes influence on the correction of children's carriage.

Direct determination of mobility of spine also proves positive dynamics of this index. After the course of rehabilitation for the boys of basic group their mobility increased, as compared to beginning of trainings, by 2,26 cm, and for girls – 1,86 cm, at considerably less changes in a control group: at the first ones by 0,68 cm, and at the second – 0,30 sn.

Determination of static endurance of the same muscles showed that after the conducted course of rehabilitation its indexes increased also Thus, the difference of them between initial and eventual measuring in relation to dorsun muscles for boys 35,13 s, and for girls – 15,37 s. In respect of muscles of abdominal press, then the indexes of distinctions in situ is following: at the first tested – 32,2 s, and at the second ones – 19,7 s.

Thus, we have the opportunity to make sure in effectiveness of the conducted course of physical rehabilitation, so much as the increase of static endurance of the investigated muscles have provided strengthening and improvement of fixing of spine in certain position, diminishes possibility of the undesirable relaxing of muscles and passive bend of spine, what especially is aggravated for teenagers with a durable sitting at a school desk or computer.

The increase of endurance of muscles, influencing on a position of rachis, to the physical loads, will allow not only to strengthen peripheral circulation of blood, and, consequently, the improvement of their tropisms and interchange of gases, and also as being assumed in our working hypothesis, determines the increase of concentration of components of blood, which resistance of children' organism depends on.

Analogical picture in relation to the indexes of components to be determined in the immune system of children are presented in table 3.

Table 3

Indexes of concentration of T and B –lymphocytes and immunoproteins of blood of children 13-14 of age at the beginning of course of physical rehabilitation,(X±m, n=38

Scales	Boys		t	p	Girls		t	p
	Basic	Control			Basic	Control		
Ig A (g/of l- 1)	2,02±0,0038	2,03±0,0042	1,8	>0,05	2,10±0,011	2,08±0,096	1,4	>0,05
Ig M (g/of l- 1)	1,04	1,04	–		1,06±0,039	1,07±0,041	1,8	>0,05
Ig G (g/of l- 1)	10,20±0,083	10,40±0,078	2,0	>0,05	10,72±0,031	10,91±0,036	2,5	<0,05
Tl (%)	60,51±0,10	60,31±0,09	2,5	<0,05	60,93±0,093	60,70±0,095	1,8	>0,05
Bl (%)	20,32±0,067	20,52±0,072	1,9	>0,05	20,42±0,28	20,35±0,25	1,9	>0,05

In table 4 the studies are presented, testifying to the positive changes in the immune system of children after a physical rehabilitation conducted in a complex together with a laser biostimulation. So, as compared to the indexes of presence of components of humeral immunity at the beginning of course of rehabilitation, by the end of it the former grew.

Table 4

Indexes of concentration of T and B- lymphocytes and immunoproteins of blood of children 13-14 of age at the end of course of physical rehabilitation,(X±m, n=38

Scales	Boys		t	p	Girls		t	p
	Basic	Control			Basic	Control		
Ig A (g/of l- 1)	2,13±0,015	2,08±0,013	2,6	<0,05	2,24±0,079	2,10±0,082	2,4	<0,05
Ig M (g/of l- 1)	1,13±0,016	1,07±0,013	3,0	<0,01	1,18±0,043	1,08±0,037	2,2	<0,05
Ig G (g/of l- 1)	10,51±0,073	10,30±0,066	2,2	<0,05	11,74±0,16	11,21±0,13	2,7	<0,05
Tl (%)	62,05±0,73	60,97±0,64	3,0	<0,01	62,18±0,36	60,99±0,32	2,6	<0,05
Bl (%)	21,44±0,46	20,77±0,44	2,2	<0,05	21,60±0,27	20,83±0,21	2,3	<0,05

By other words, it means that the height of concentration of immunoproteins of all investigational classes testifies to stress – genetic influence on the children of unknown for them a course of rehabilitation and increase of readiness of organism to implementation of protective functions.

About strengthening of the immune system to implementation of enhanced physical loads testify the increases of concentration of T and B- lymphocytes. The increase of components of cellular immunity confirms also the increase of ability of children's organism to the protective reactions.

Table 4 reflects, that the concentration of T-cell by the end of course grew up for boys by 1,54%, for girls – 1,25%, and concentration of B- lymphocytes, accordingly, by 1,12% and 1,18%. The increase of components of humeral and cellular immunity testifies to strengthening a possibility of children's organism to ensuring of its defense, and by a factor causing these reactions one should consider the applied system of physical rehabilitation, to be defiant of tension in children's organism of a kind as stress.

Thus, as is generally known, stress – geneous influence can cause both positive and negative results, that depends on power and duration of factors causing a stress. Even at the optimal level of their manifestations changes take place in an organism in the reactions of homoeostasis, attended necessarily with tension in the immune system, and that what was obtained in our research.

Thus, for renewal of the violated homoeostasis the stereotype visceral and neurohumoral mechanisms are used, that is the aggregate of processes, characterizing, the physiological type of stress. In our research before the course of physical rehabilitation with children we had a talk about its influence on violations in their carriage, stir up an interest to it and, mainly, forming of confidence and set directives to the positive outcome. This psychotherapy method had provided the manifestation of stress in form of eustress and, if speaking about the psychological type of stress, then, quite obviously, that long before the application of physical exercises and laser biostimulation for children an interest was aroused (and tension as well) and the positive estimation of the expected result.

The data obtained give an idea, that positive results (in this case in the process of correction of the carriage violations) can be received, only by breaching balance,

though not at the level of norm. But the level of the caused tension in the children's organism must not exceed established limits, which must be set experimentally.

Conclusions:

1. Application of physical exercises in combination with a laser biostimulation BAT led to the improvement of dynamic and static endurance of group of muscles of extensors of back and abdominal press for children with a kyphotic carriage. After the course of physical rehabilitation the increase of mobility the spine joints took place: mobility of spine for boys increased by 2,26 cm, and for girls – by 1,86 см.

2. Components of humeral (Ig A, Ig M, Ig G) and cellular T- l and V-l of immunity as a result of realization of the rehabilitation impact increased in numbers, determining more enhanced possibility of children's organism to resistance, to the active changes. Consequently, the used rehabilitation influence was perceived by children as a stress-geneous factor, allowed to activate the processes of their mobilization and resistance ability.

Consequently, intensity and duration of the used influences was not exceeding the level of possibilities of children's organism to recovery, and the arousing stress reactions in an aggregate meant the display of stress in form of the positively influencing on an organism, i.e. in a form of eustress.

The prospects of further researches are directed to the study of ways and methods, and also features of physical rehabilitation of persons of the different age-related groups.

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SYSTEM-FUNCTION PHYSICAL TRAINING

Abstract. Sutula V. A. System-function physical training. ***Purpose:*** *select function backbone of modern physical culture.* ***Material:*** *the basis for this article are materials literature, which developed the theoretical and practical aspects of constructing a theory of physical culture.* ***Results:*** *the analysis of the essence of physical culture through the prism of modern ideas about the social and educational system has shown that within the basic forms of physical culture (physical education, sport, physical recreation, physical rehabilitation, adaptive physical education) deployed a variety of social processes, the development of which is caused by a specialized activity people use a variety of physical exercises. This approach allowed us to identify and show unity in the manifestation of social and educational facets of physical culture.* ***Conclusions:*** *integral function of physical culture has two mutually conditioned faces – pedagogical (educational) and social (recreational), suggesting that the modern physical culture as a holistic social and educational system whose primary function is recreational and educational.*

Keywords: *physical culture, theory, system, function, social, pedagogical, integration approach, process, public health.*

Introduction. In recent years, more active development of conceptual provisions that underlie the theory of physical culture (G. Natalov, 2005; Korenberh V., 2008, V. Vydryn, 2003, 2008, L. Matveev, 2003, 2009; Lubysheva L., 2009, F. Sobyanin, 2010; Vizitey N., 2011, V. Stolyarov, 2007, 2011, Yuri Nikolaev, 2001–2013, etc.). The need for this finding is due to the fact that in the current theory, the basic provisions which are reflected in the underlying works (Deborah A. Wuest, Charles A. Bucher, 1995; Kuramshin Yu, 2003; L. Matveev, 2008), is no single general theoretical framework (H. Vizitey, 2009; Y. Nikolaev, 2010, 2012; A. Peredelskyy, 2011). A checked contradiction proves the relevance and need for further scientific investigations in the direction of the development of integrative approaches to creating a theory of physical culture [17]. In review of this issue, a special place is the correct allocation of system-creation function of physical culture. This approach involves the analysis of modern physical culture through the lens of an integrated system [16], which apparently has two interrelated facets – social and educational (Fig. 1).

Relationship of academic programs, plans, themes. The research was conducted as part of a comprehensive research project "Theoretical and methodological basis for the formation of personal physical training of children and young people as the basis of their health" (state registration 0113U001205).

The purpose of the article: to identify system-feature of modern physical culture. Material and methods of this problem are based on an analysis of literature, which developed the theoretical and practical aspects of creating a theory of physical culture.

Results and discussion. In modern society, physical culture is presented in specific forms – physical education, sport, physical recreation, physical rehabilitation, adaptive physical education. These forms are deployed within the meaning of the various social processes whose development is realized under a specialized activity of people with various physical exercises. The result of this activity is precisely the origin and development of existing social forms of physical training, which requires an analysis of its nature in the light of modern ideas concerning the social system. In this regard it should be noted that the concept of "social system" was formalized by research recently due to the development in the science system approach [18], although it was used in its writings by the ancient thinkers, referring to a particular ordering of the various forms of social life [12] Fundamentals of the modern theory of social systems were developed by the American scientist T. Parsons (1902–1979), who was the to first analyze the differences between social and personal systems, and between different types of culture.

Parallel to his studies, the concept of "social system" was developed by Herbert Spencer, Weber, F. Tonnis, Emile Durkheim, Simmel G., P. Blau et al. Now the social system as a set of social phenomena and processes that are in a special relationship and connections with each other creating a coherent social object [7]. Since social systems are both the product and the area of human activity, in a number of studies social system was presented, as a whole structure, the main element of which is people, their interaction, relationship and ties that are sustained and reproduced in the historical process in cooperative human activity [11]. In a view of these ideas, it is necessary to state that the current physical education is a particular social system, [4; 8; 13], because it is diverse human activities, associated with the use of exercise and being the basis of its development [6; 14; 15].

Obviously, this activity creates the conditions for sustainable change aimed at improving the level of health of not just a particular person, but also of public health in general. The existence of communication that outlined a number of materials is confirmed by studies [3; 10 et al.]. According to, for example, M. Dtchak [5], the social effects of recreational activities can only be achieved provided that more than a third of the population of the state at a sufficient level deals with various kinds of motor activity in health centers. The above analysis indicates that the main social function of the existing forms of physical training – health. Note that to implement this feature is only possible by engaging people in participating in the activities mentioned above provided the formation of their respective needs [17]. Obviously, the solution of this problem is possible only as a result of specially organized educational process that takes place within the various forms of social manifestations of Physical Education (physical education, sport, physical recreation, physical rehabilitation, adaptive physical education).

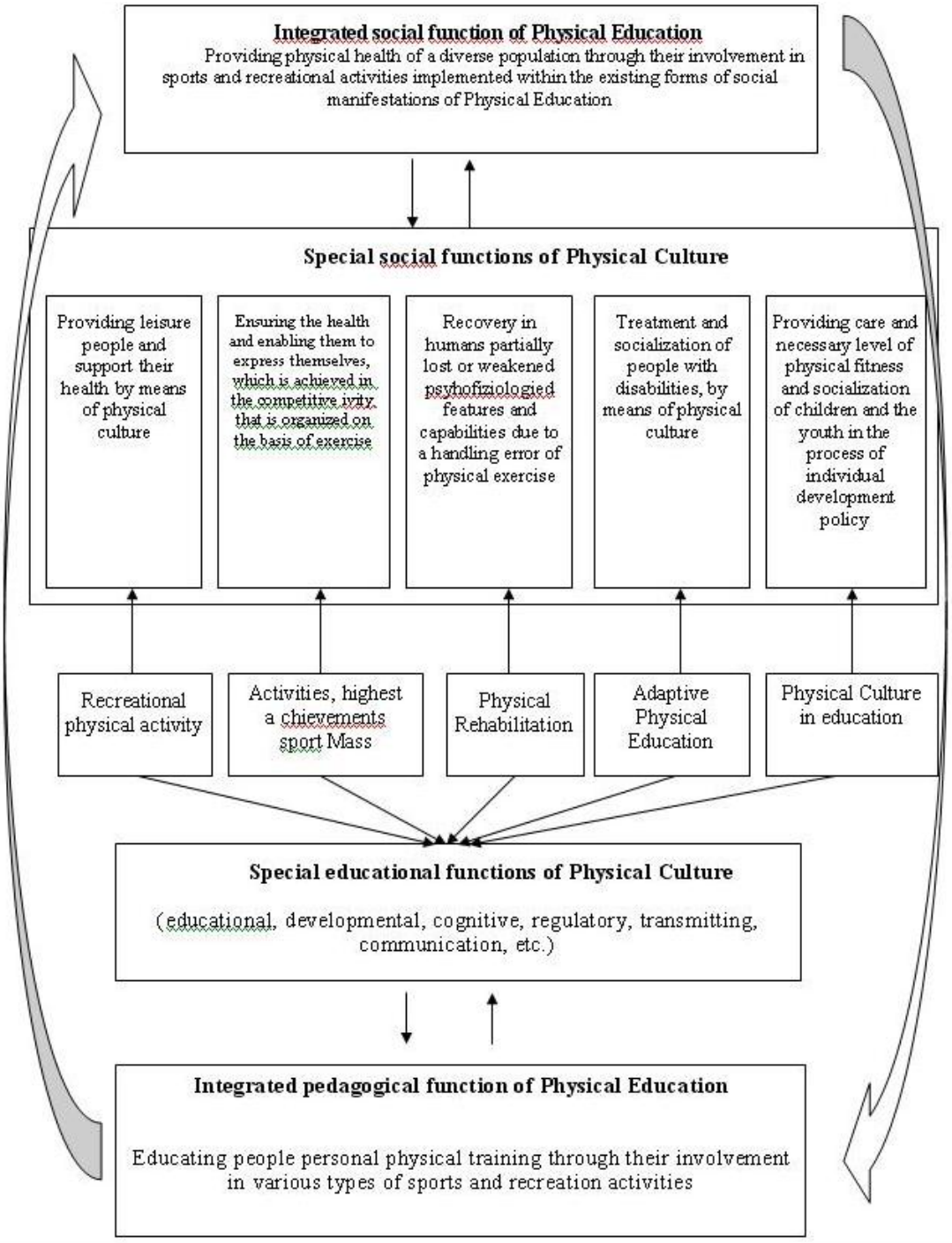

Fig. 1. The relationship of social and educational functions of Physical Education

This approach requires an analysis of physical culture through the lens of educational system, especially in the literature the term "educational system" is used rather ambiguous, despite the fact that it is one of the basic conceptual pedagogic apparatus [9]. In many cases, under the educational system is understood the individual components of the educational process, a set of organizational forms and the like. Quite often this concept is personified. For example, teachings by out of Tolstoy, J. Kamensky, K. Ushynsky, A. Makarenko, V. Sukhomlinsky, S. Lisenkov, V. Shatalov and many others. A number of studies of educational system is identified with a particular level of education, reflecting its structure – a system of pre-school,

school, vocational and higher education, and the like. In teaching science uses other approaches to determining the educational system, for example, Yu Babanskyy [1] by the pedagogical system realizes a set of structural components that are integrated educational purposes only with the personality development and functioning in a holistic pedagogical process. V. Vespalko [2] in educational system realizes a set of interrelated tools, methods and processes required to create an organized, purposeful pedagogical influence on identity formation with desired qualities, choosing not only the structural components of the educational system, but also the functional components of educational activities. B. Slastonin and I. Isayev [9] considers educational system to be as social cohesion, caused by participants of educational process, actively interact, as well as a set of spiritual and material factors as to the formation of personality, capable of self in reality. Summarizing the above, we must conclude that the essence of teaching is manifested in the formation of the personality features typical of a system. Provided that these items assess physical culture, it must be stated that the result of its functioning in society is the formation of the human person with features typical to this type of culture, that is physically cultural identity. Of course, this process is a form of participation in public educational function of physical culture, which suggests a physical education as a pedagogical system. While the above analysis is specifically distincted social (recreational) and pedagogical (educational) facets of physical training. This approach has only methodological character. In fact, physical activity is functioning in society as a complete system. This suggests that systemic creating (integral) function of physical training becomes recreational and educational.

Conclusions:

1. Systematizing function of physical training has two mutually conditioned planes – pedagogical (educational) and social (recreational), which suggests a modern physical culture as an integrated social and educational system, the main function of which being recreational and educational.

2. Physical education in the context of social and educational system is a set of interrelated phenomena, processes, social institutions, developing a single pedagogical space as a result of human activities associated with the use of exercise that are specific relationships and connections between them and create a social environment in a holistic socio-cultural object.

3. Integrity of modern physical training is provided on its way to its dual manifestations of recreational and educational function, which is a reflection of the existing connection of Physical Education and the social system in which it is bung developed.

4. The connection between the physical culture of educational (pedagogical) and health (social) functions suggests that the problem solving to ensure a sufficient level of public health depends on the efficiency of participation in public educational function of physical culture.

5. Physical education in the education al system plays a key role in the implementation of the educational function of physical training, aimed at developing people by personal physical training. This is due to the fact that the basic values, and,

accordingly, the individual needs of the person are formed mainly in childhood and adolescence.

Prospects for further research on this direction. Further studies are planned for a detailed analysis of system in detail – (health and educational) functions of physical training.

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