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Scientific works on various topics of physical culture, the physical education of various groups of people, and the training of professionals have been assembled in this digest. A description is given of methods and means of training, specifics of athletic training, and the adaptation of the bodies of individuals of various ages to the process of physical training, the suitability of which is enhanced by pedagogical, psychological, methodological and biological experiments.

The periodical is a scientific professional publication of Ukraine in which it is possible to publish the results of theses for obtaining the academic degree of doctor or candidate of science connected with the specialties «Pedagogical sciences» (see the list of scientific professional publications approved by the Ministry of Education and Science of Ukraine, May 12, 2015, № 528) and «Physical education and sports» (see the list of scientific professional publications approved by the Ministry of Education and Science of Ukraine, July 13, 2015, № 747).

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Міністерство освіти і науки України
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ФІЗИЧНЕ ВИХОВАННЯ, СПОРТ І КУЛЬТУРА ЗДОРОВ'Я У СУЧАСНОМУ СУСПІЛЬСТВІ

Збірник наукових праць
Східноєвропейського національного університету імені Лесі Українки
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Східноєвропейський національний університет
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Ф 50 **Фізичне** виховання, спорт і культура здоров'я у сучасному суспільстві : зб. наук. праць Східноєвроп. нац. ун-ту ім. Лесі Українки / уклад. А. В. Цьось, С. Я. Індика. – Луцьк : Східноєвроп. нац. ун-т ім. Лесі Українки, 2018. – № 1(41). – 117 с.

У збірнику наукових праць подано окремі положення розвитку фізичної культури, фізичного виховання різних груп населення, підготовки фахівців для галузі. Охарактеризовано методи, засоби тренування, особливості підготовки спортсменів, адаптації організму людей різного віку в процесі фізичного виховання, адекватність яких підкріплюється педагогічними, психологічними та медично-біологічними експериментами.

Журнал є науковим фаховим виданням України, у якому можуть публікуватися результати дисертаційних робіт на здобуття наукових ступенів доктора і кандидата наук за напрямами «Педагогічні науки» (дивитися перелік наукових фахових видань, затверджений наказом Міністерства освіти і науки України від 12 травня 2015 р. № 528) та «Фізичне виховання і спорт» (дивитися перелік наукових фахових видань, затверджений наказом Міністерства освіти і науки України від 13 липня 2015 р. № 747).

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Historical, Philosophical, Legal and Staff Problems of Physical Culture and Sports

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PECULIARITIES OF TEACHING PHYSICAL EDUCATION AND SPORTS SPECIALISTS IN RECREATIONAL ACTIVITIES IN POLAND

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Abstract

Nowadays in Ukraine there is a public need for specialists in physical education and sports who are capable of recreational activities, which are extremely important for promoting healthy lifestyles, preventing diseases and increasing the level of motor activity of different social groups of the population. The personality of a specialist in recreational activities is one of the most important factors in attracting people to rational motor activity. Critical understanding of the key issues of the Polish experience in training such specialists will serve the needs for the development of the national physical culture and sport. The main trends of preparation of future physical education and sports specialists for recreational activities in Poland are determined and analyzed. Theoretical methods of research were used: analysis, synthesis, generalization, systematization, specification, comparison and forecasting. The comparison of normative principles of employment of physical education and sports specialists in Ukraine and Poland allowed establishing their similarity. In Ukraine, the training of such specialists is carried out in the framework of specializations and educational programs of specialties «Secondary education (physical culture)» and «Physical culture and sports»; in Poland, respectively, within the specialization in the areas of «Physical education» and «Tourism and Recreation». Polish educational standards are described in terms of the list of knowledge, skills and competences necessary for recreational activities. The list of specialties and specializations for qualification of fitness instructor and motor recreation is determined. Examples of their implementation by Polish institutions of higher education are presented, the list of which is determined taking into account the requirements of the labor market and the opportunities available for the training of such personnel. The above qualifications can also be obtained at courses or postgraduate studies of Polish higher education institutions. The most widespread specialization within the specialty «Motor recreation»: Aquafitness; Fitness – strength exercises; Fitness – modern types of gymnastics; Correctional motor activity.

Key words: future specialists in physical education and sports, recreational activities, approaches of training, specialty and specialization, motor recreation.

Наталія Бєлікова, Світлана Індика. Особливості підготовки майбутніх фахівців з фізичного виховання та спорту до рекреаційно оздоровчої діяльності у Польщі. Нині в Україні існує суспільна необхідність у фахівцях із фізичного виховання та спорту, здатних виконувати рекреаційно-оздоровчу діяльність, що вкрай важливо для пропаганди здорового способу життя, профілактики захворювань і підвищення рівня рухової активності різних верств населення. Особистість фахівця з рекреаційно-оздоровчої діяльності є одним із найважливіших факторів залучення населення до раціональної рухової активності. Критичне осмислення ключових аспектів польського досвіду підготовки таких фахівців слугуватиме потребам розвитку національної галузі фізичної культури й спорту. Визначено та проаналізовано основні тенденції підготовки майбутніх фахівців з фізичного виховання та спорту до рекреаційно-оздоровчої діяльності в Польщі. Використано теоретичні методи дослідження: аналіз, синтез, узагальнення, систематизацію, конкретизацію, порівняння та прогнозування. Порівняння нормативних засад працевлаштування фахівців із фізичного виховання та спорту в Україні й Польщі дав змогу встановити їх подібність.В Україні підготовка таких фахівців здійснюється розрізнено в межах спеціалізацій та освітніх програм спеціальностей «Середня освіта (фізична

культура)» та «Фізична культура і спорт»; у Польщі – відповідно, у межах спеціалізацій за напрямами «Фізичне виховання» і «Туризм та рекреація». Схарактеризовано Польські освітні стандарти в частині переліку знань, умінь і компетентностей, необхідних для виконання рекреаційно-оздоровчої діяльності. Визначено перелік спеціальностей і спеціалізацій для набуття кваліфікації інструктора фітнесу й рухової рекреації. Наведено приклади їх реалізації польськими закладами вищої освіти, перелік яких визначено з урахуванням вимог ринку праці та наявних можливостей для підготовки таких кадрів. Названу вище кваліфікацію можна здобути також на курсах або післядипломних студіях польських закладів вищої освіти. Найбільш розповсюджені спеціалізації в межах спеціальності «Рухова рекреація»: Аквафітнес; Фітнес – силові вправи; Фітнес – сучасні види гімнастики; Корекційна рухова активність.

Ключові слова:майбутні фахівці з фізичного виховання та спорту, рекреаційно-оздоровча діяльність, напрям підготовки, спеціальність і спеціалізація, рухова рекреація.

Наталья Беликова, Светлана Индыка. Особенности подготовки будущих специалистов по физическому воспитанию и спорту к рекреационно-оздоровительной деятельности в Польше. Сейчас в Украине существует общественная необходимость в специалистах по физическому воспитанию и спорту, способных осуществлять рекреационно-оздоровительную деятельность, что есть крайне важным для пропаганды здорового образа жизни, профилактики заболеваний и повышения уровня двигательной активности различных слоев населения. Личность специалиста по рекреационно-оздоровительной деятельности является одним из важнейших факторов привлечения населения к рациональной двигательной активности. Критическое осмысление ключевых аспектов польского опыта подготовки таких специалистов будет служить потребностям развития национальной отрасли физической культуры и спорта. Определены и проанализированы основные тенденции подготовки будущих специалистов по физическому воспитанию и спорту к рекреационно-оздоровительной деятельности в Польше. Использованы теоретические методы исследования: анализ, синтез, обобщение, систематизация, конкретизация, сравнение и прогнозирование. Сравнение нормативных основ трудоустройства специалистов по физическому воспитанию и спорту в Украине и Польше позволило установить их сходство. В Украине подготовка таких специалистов осуществляется разрозненно в пределах специализаций и образовательных программ специальностей «Среднее образование (физическая культура)» и «Физическая культура и спорт»; в Польше, соответственно, в пределах специализаций по направлениям «Физическое воспитание» и «Туризм и рекреация». Охарактеризованы Польские образовательные стандарты в части перечня знаний, умений и компетенций, необходимых для осуществления рекреационно-оздоровительной деятельности. Определен перечень специальностей и специализаций для приобретения квалификации инструктора фитнеса и двигательной рекреации. Приведены примеры их реализации польскими вузами, перечень которых определяется с учетом требований рынка труда и имеющихся возможностей для подготовки таких кадров. Названную квалификацию можно получить также на курсах или последипломных студиях польских высших учебных заведений. Наиболее распространенные специализации в рамках специальности «Двигательная рекреация»: Аквафитнесс; Фитнес – силовые упражнения; Фитнес – современные виды гимнастики; Коррекционная двигательная активность.

Ключевые слова: будущие специалисты по физическому воспитанию и спорту, рекреационно-оздоровительная деятельность, направление подготовки, специальность и специализация, двигательная рекреация.

Research problem stating and its significance. Globalization makes it vital to implement a common European policy in the sphere of training of skilled high school staff. Studying the international experience of training specialists requires a critical analysis of the educational systems achievements of the foreign countries. Their adaptation to national needs will enable the implementation of positive trends in higher education institutions in Ukraine.

In recent decades the paradigm of education in the sphere of fitness and recreation has changed significantly throughout the world, due to the orientation towards a fundamentally new understanding of the essence of physical recreation and its role in the educational system [1]. At the same time, in Ukraine there is a public need for specialists in physical education and sports who are able to carry out recreational activities, which is extremely important for promoting healthy lifestyles, preventing diseases and increasing the level of motor activity of different social groups of the population [2; 4; 6]. Therefore, there is a need to determine the key aspects and trends of training specialists in recreational activities in foreign countries, whose critical reflection will serve the needs of the the above-mentioned branch in Ukraine .

An analysis of recent research on this problem testifies that in Ukraine there are some current problems related to the training of future specialists in physical education and sports for active recreational activities. Various aspects of the preparation of such specialists are covered in the writings of national (O.Blagyi, M. Vasylenko, M. Danyevych, M. Dutchak, V. Levytskyi, etc.) and foreign (C. Bouchard, T. Wolanska, etc.) scientists. Problems of recreation, tourism and tourist-sports training in higher educational

institutions of physical culture were studied by O. Zhdanova, V. Zholdak, L. Zanevska, T. Krutsevych, E. Prystupa, and others. According to O. Andreeva, the development and theoretical substantiation of approaches to the selection and structuring of the content and program and methodological provision of the training process for the training of future specialists in recreational activities are required [1]. The lack of systematic studies of foreign experience in the training of such specialists led to the choice of research topic; the country is chosen for the reasons of close social and economic contacts that have developed historically.

The purpose of research: to identify and analyze the main trends in the training of future specialists in physical education and sports for recreational activities in Poland.

The objectives of the research are:

1. To compare the normative principles of employment in the sphere of study in Ukraine and Poland.
2. To explore the special aspects of the training of future specialists in physical education and sports for recreational activities in Ukraine and Poland.
3. To describe the Polish educational standards as part of knowledge, skills and competences necessary for recreational activities; determine the specialty and specialization for obtaining the qualification of fitness instructor and motor recreation.

The following theoretical methods of the research were used: analysis, synthesis, generalization, systematization, specification, comparison and forecasting.

Research results. Discussion. Recreational motor activity is characterized by dynamism, diversity of forms, prospects, versatility of their use, oriented to the maximum satisfaction of human needs. According to O. Andreeva's interpretation, recreational activity is a process of human interaction with the environment with the help of which the human achieve a conscious goal, which appeared as a result of the need for active rest, satisfaction, recreation, restoration of physical and spiritual forces at a free or specially definite time, which stimulates motor and social activity and creates optimal conditions for creative expression of personality [1]. Specific means and methods of recreation, including elements of interests and entertainment, include: physical exercises of low intensity, motor games, tourism, idemotoric motor activity, etc.

Personality of a specialist in recreational activities is one of the most important factors of attracting people to rational motor activity. According to the National Classifier of Ukraine DK 009: 2010 “Classifier of Economic activities types”, the specialist of the named profile, who is assigned to a professional group of “experts” and is placed in the section R: “Art, sport, entertainment and recreation” in subsection 93: “Activities in sports, organization of recreation and entertainment” is prepared to work on one or several types of economic activity. Among these activities: 93.11 -Function of sports facilities; 93.12 - Activities of sports clubs; 93.13 - Activities of fitness centers; 93.19 - Other activities in sports; 93.29 - Organizing of the other types of recreation and entertainment; 96.04 - Activities from the provision of physical comfort. A specialist in recreational activity may hold the primary positions according to the professional jobs titles of the National Classifier of Ukraine “Classifier of professions DK 003: 2010”: 3414 - Specialist in organizing of leisure activities; 3414 - Instructor of health-sports tourism; 2213.2 - Recreational specialist; 2351.2 - Healthy Lifestyle Consultant; 2483.1 - Scientist in fitness and recreation.

The analysis of Internet information resources has revealed that Poland has a Polish classification of activities (Polska Klasyfikacja Działalności, 2007), which is similar to the National Classifier of Ukraine in the part of the list of activity types in the studied area. In particular, in the section R: “Activities related to culture, entertainments and recreation” (Działalność związanaz kulturą, rozrywką i rekreacją), the following groups are defined in subsection 93: “Sports, entertainment and recreation activities” (Działalność sportowa, rozrywkowa i rekreacyjna) / classes: 93.11 - Activities of sports facilities (Działalność obiekt w sportowych); 93.12 - Activities of sports clubs (Działalność klub w sportowych); 93.13 - Activities of facilities that serve to improve physical conditions (Działalność obiekt w służących poprawie kondycji fizycznej); 93.19 - Other activities in sport (Pozostała działalność związana ze sportem); 93.29 - Other entertaining and recreational activities (Pozosta ładziałalność rozrywkowai rekreacyjna); 96.04 - Activities for the provision of services for the improvement of physical condition (Działalność usługowazwiązanaz poprawą kondycjifizycznej) [7]. In the Polish classification of professions and occupations (Klasyfikacja zawod w i specjalności, 2014), the following professional groups of jobs, within which the specialists of recreational activities can work, are pointed out: 1431 - Sports, Recreation and Entertainment (Kierownicy do spraw sportu, rekreacji i rozrywki) and 3423 - Fitness and motor recreation instructors (Instruktorzy fitness i rekreacji ruchowej) [5].

It should be noted that the higher educational sport institutions began training of specialists in recreational activities in Ukraine when the specialty “Fitness and Recreation” was added to the list of Master's specialities, and which, in 2015, was removed due to a radical review of sports specialties.

Currently, the training of future specialists of physical education and sports for recreational activities is realized in the framework of specializations and educational programs of specialties 014 "Secondary education (physical culture)" and 017 "Physical culture and sports".

In Poland, the training of specialists in recreational activities is accomplished in the course of "physical education". The educational standard for the direction of training "Physical Education" (Standardy kształcenia dla kierunku studiów: Wychowanie fizyczne) states that the graduate, having completed the first degree, should be prepared for the popularization of health and physical activity, self-planning and implementation of physical activity to improve health, rest and physical harmony in educational and physical education and sports institutions. A graduate, having completed the second degree, should be prepared to work at institutions of physical culture; social and public organizations; research institutes [8].

The list of courses and the results of education that enable students to acquire the competencies required to conduct recreational activities is different. In particular, studying the discipline "Theory of Sport (Teoria sportu)", students get acquainted with the organizational aspects of involving children and young people in mass sport and motor recreation. The student course "Individual and Team Sport (Sport indywidualny i zespołowy)" reveals the peculiarities of preparation and holding of sporting competitions and recreational activities in the field of individual and team sports. The student course "Special Physical Education (Wychowania fizyczne specjalne)" reveals the peculiarities of sport and recreation of disabled children and young people and allows students to acquire skills in the selection of content, forms, methods and means of motor activity in dysfunctional and integrated groups.

Educational outcomes in the student course of "physical education" include lists of knowledge, skills and competences necessary for the implementation of recreational activities (Table 1) [3].

Table 1

Description of the educational outcomes in the student course "Physical education", the acquisition of which is necessary for the graduate to implement recreational activities

The educational outcomes	
1	**2**
Knowledge	***First degree***
	Knows the elementary terminology used in physical education, and understands the possibilities of its application in related student courses (sports, tourism and recreation, health recovery)
	Knows the technique of execution, safety and methods of training of selected individual sports and the principles of safe organization of these sports in the form of training sessions, sports and recreational activities
	Knows the technique of execution, methods of training of selected team sports and the principles of safe organization of these sports in the form of training sessions, competitions, sports and recreational activities
	Second degree
	Knows and understands the importance of recreational and sports activities in their free time; knows the basics of planning and organizing of excursions, hikes and camps; knows the place of tourism and recreation in physical education and training; knows the right principles of sports and recreation activities
	Knows the teaching technique and teaching methods of motor activity of selected individual and team sports and understands the specifics of conducting such classes with healthy and disabled people in groups of youth and adults; knows the procedure for preparing and conducting sports and recreational activities in the field of individual and team sports
	Understands and diagnoses lifestyle and selected models of recreational and creative behavior of a person and understands cultural peculiarities of needs and problems of individuals and social groups.
Skills	***First degree***
	Can show the technique of implementation and the correct application of the prerequisites of selected individual sports in groups that differ in age and level of preparedness; score their special training; can safely organize and conduct classes on selected individual sports in the form of training sessions, sports and recreational activities
	specializes in motor skills in selected forms of physical activity (recreational, sports and aesthetic), in the areas of scientific research and scientific courses related to the chosen direction of study

End of table 1

1	2
	II degree of study
	It possesses the skills of rational programming of recreational and health opportunities for training and development of physical fitness of people of all ages; is capable of competently controlling the body's reactions when choosing rational loads, and then use them in developing educational projects for the protection and training of health
	Can organize according to the rules and conduct the main sports, tourist and recreational activities for children and adolescents, as well as adults with safety regulation maintaining
	Has skills in management and implementation of recreational, sports and aesthetic activities with different social groups
	Has specialized motor skills in the field of selected forms of physical activity (recreational, health, sports and aesthetics) in the branches of science and scientific disciplines related to the chosen direction of study
Competence	***I degree of study***
	Prepared for the role of a leisure animator, as well as for the joint preparation of educational programs for the organization of free human time (recreational)
	Chooses the behavior that is safe for life and health, acts as a promoter of recreational and health activities in the local environment
	II degree of study
	Prepared for independent professional activity, implements it systematically and professionally, can manage large groups when performing complex professional tasks of recreational nature

The training of future specialists in physical education in Poland is carried out in state and private higher education institutions (academies of physical education, faculties in usual and technical universities). Studying at the first stage studios usually lasts 3 years; second degree - 2 years. Graduates obtain a bachelor's degree (licencjata wychowania fizycznego) or a master's degree (magistra wychowania fizycznego) in physical education.

Specialties and specialization within the direction of training “Physical education “the educational institution determines itself, taking into account labor market requirements and available opportunities for training such personnel. In particular, at the Józef Piłsudski University of Physical Education in Warsaw, in the studios of the first and second degrees you can get the following specialization of the instructor of motor recreation: Aquafitness (Aquafitness) ; Fitness - modern types of gymnastics (Fitness-nowoczesne formy gimnastyki). At the Academy of physical education and sport in Gdansk the following specializations are distinguished: Fitness - strength exercises (fitness – ćwiczenia siłowe); (kinezygerontoprofilaktyka); Correctional motor activity (Dostosowana aktywność ruchowa); Recreation animator (animator?w rekreacji). In many institutions of higher education in Poland, graduates are offered to consider completing the studies on the “Physical education”, education in such related fields as “Tourism and Recreation”, “Sport Management” or “Sports Journalism”. It should be noted that the direction of “Tourism and recreation” in some Polish universities also includes the specialty “physical recreation”. So, in Academy of physical education and sport in Gdansk named specialty includes a broad range of specializations (in addition to the above-mentioned): Fitness for pregnant women and after childbirth (Fitness – dla kobiet w ciąży I po porodzie); Sailing (Żeglarstwo jachtowe); Tennis (Tenis), etc.

Qualification of the instructor in motor activity can be obtained by the end of the course in higher educational institutions postgraduate studios, having received the corresponding certificate. For example, in the center of the teacher training of the Academy of physical education in Poznan the list of chosen specialization, instructor's motor activity includes: Fitness yoga; Bodybuilding; Dance; Scandinavian walking; Recreational badminton; Kayaking, etc.

Conclusions and perspectives of further research. Our research has revealed the main trends of the training of future specialists in physical education and sports for recreational activities in Poland:

1. The similarity of the National Classifier of Economic Activities Types of Ukraine with the Polish classification of activities in the part of the list of activities in the studied area was established.

2. In Ukraine, the training of future specialists in physical education and sports for recreational activities is carried out in the framework of specializations and educational programs of specialties 014 “Secondary education (physical culture)” and 017 “Physical culture and sports”. In Poland, the

preparation of such specialists is carried out within the specialties and specializations in the areas of "Physical education" and "Tourism and Recreation".

3. In Poland there is a standard of training for the direction "Physical education", as well as educational standard "List of results of training for the direction "Physical education". These documents provide a list of the knowledge, skills and competences of the graduates required for recreational activities.

4. List of specialties and specializations within the directions "Physical education" and "Tourism and recreation" polish educational institutions determine themselves, taking into account the requirements of the labor market and the opportunities available for the training of such people. Training in the specialty "Motor Recreation" includes a wide range of specializations and allows qualifying the fitness and motor recreation instructor as a broad and narrow profile. The above qualifications can also be obtained at courses or postgraduate studies of Polish higher education institutions.

The results of the analysis of the main trends in the training of future specialists of physical education and sport in recreation and fitness activities in Poland allow using the positive experience of this country for the development of national educational programs of training specialists in the specified profile.

It is planned to study the peculiarities of professional training of future specialists of physical education and sport in recreational activities in other European countries.

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HEALTH AND HEALTHY LIFESTYLE: VIEWS, THOUGHTS, RELEVANCE OF RESEARCH TOPIC

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Abstract

The leading condition for reforming the modern domestic education system is the question of strengthening the health of the younger generation, the formation of a healthy lifestyle of students, and the education of the health culture in young people, as the tendency to deteriorate the health of Ukrainian children and young people becomes a national scale problem. The urgency of the above-mentioned provisions is confirmed by the regulatory framework for the educational sector in Ukraine. It is advisable to grasp the views and opinions of ancient philosophers and educators on the concept of health, their philosophy of human health in order to actualize rational ideas and their involvement in solving contemporary problems in the context of the concept of recovery of modern society. The term «health» does not mean just the absence of a disease. Only a person who has achieved self-awareness and self-realization, that is, internal harmony, is considered to be healthy. ***The purpose*** is to determine the scientific concepts of the concept of health, its constituent parts. ***Methods of research –*** analysis and generalization of literary sources, system-structural analysis. ***Results of Work.*** The main idea of many works of philosophers, wise men of antiquity - each person is responsible for his own order or chaos in her soul, she creates well-being, well-being, health. The ancient Greek and Roman philosopher first raised the question of the personal responsibility of man for both his own health and the health of others. ***Conclusions.*** A person who differs harmonious physical and mental development, well adapted to the surrounding physical and social environment can be considered healthy. She fully realizes her physical and mental abilities, can adapt to changes in the environment when they do not go beyond the norm, and contributes to the welfare of the society, in proportion to its abilities.

Key words: well-being, harmonious life, happiness, joy, mood.

Петро Савчук, Ігор Бакіко, Володимир Ковальчук, Сергій Савчук. Здоров'я та здоровий спосіб життя людини: погляди, думки, висновки. ***Актуальність.*** Провідною умовою реформування сучасної вітчизняної системи освіти є питання зміцнення здоров'я підростаючого покоління, формування здорового способу життя учнів, виховання культури здоров'я в молоді, адже тенденція до погіршення здоров'я українських дітей та учнівської молоді набуває масштабу загальнонаціональної проблеми. Актуальність вищезазначених положень підтверджено нормативно-правовою базою щодо освітньої галузі в Україні. Доцільно осягнути погляди та думки стародавніх філософів і педагогів щодо поняття здоров'я, їхню філософію здоров'я людини задля актуалізації раціональних ідей та їх залучення до розв'язання сучасних проблем у контексті концепції оздоровлення сучасного суспільства. Термін «здоров'я» не означає лише відсутність хвороби. Здоровою вважається людина, яка досягла самоусвідомлення й самореалізації, тобто внутрішньої гармонії. ***Мета статті –*** визначити наукові уявлення про поняття здоров'я, його складові частини. ***Методи дослідження*** – аналіз та узагальнення літературних джерел, системно-структурний аналіз. ***Результати роботи.*** Головна ідея численних робіт філософів, мудреців античності – кожна людина відповідає за власний порядок або хаос у її душі, сама створює добробут, благополуччя, здоров'я. Давньогрецькі та давньоримські філософи вперше порушили питання про особистісну відповідальність людини як за власне здоров'я, так і за здоров'я інших. ***Висновки.*** Здоровою може вважатися людина, яка відрізняється гармонійним фізичним і розумовим розвитком, добре адаптована до навколишнього фізичного й соціального середовища. Вона цілком реалізовує свої фізичні та розумові здібності, може пристосовуватися до змін у навколишньому середовищі, коли вони не виходять за межі норми, і робить свій внесок, співрозмірний з її здібностями, у добробут суспільства.

Ключові слова: благополуччя, гармонійне життя, щастя, радість, настрій.

Петр Савчук, Игорь Бакико, Владимир Ковальчук, Сергей Савчук. Здоровье и здоровый образ жизни человека: взгляды, мысли, выводы. ***Актуальность.*** Ведущим условием реформирования современной отечественной системы образования является вопрос укрепления здоровья подрастающего поколения, формирования здорового образа жизни учащихся, воспитание культуры здоровья у молодежи, ведь тенденция к ухудшению здоровья украинских детей и учащейся молодежи приобретает масштаб

общенациональной проблемы. Актуальность вышеупомянутых положений подтверждается нормативно-правовой базой по образования в Украине. Целесообразно понять взгляды и мысли древних философов и педагогов относительно понятия здоровья, их философию здоровья человека с целью актуализации рациональных идей и их привлечения к решению современных проблем в контексте концепции оздоровления современного общества. Термин «здоровье» не означает только отсутствие болезни. Здоровой считается только человек, достигший самосознания и самореализации, то есть внутренней гармонии. ***Цель статьи*** – определить научные представления о понятии здоровья, его составных частей. ***Методы исследования*** – анализ и обобщение литературных источников, системно-структурный анализ. ***Результаты работы.*** Главная идея многочисленных работ философов, мудрецов античности – каждый человек отвечает за свой порядок или хаос в ее душе, сама создает благополучие, здоровье. Древнегреческие и древнеримские философы впервые поставили вопрос о личностной ответственности человека как за собственное здоровье, так и за здоровье других. ***Выводы.*** Здоровым может считаться человек, который отличается гармоничным физическим и умственным развитием, хорошо адаптирован к окружающей физического и социальной среде. Он вполне реализует свои физические и умственные способности, может приспосабливаться к изменениям в окружающей среде, когда они не выходят за пределы нормы, и вносит свой вклад, соразмерный с его способностями, в благосостояние общества.

Ключевые слова: благополучие, гармоничную жизнь, счастье, радость, настроение.

Intoduction. Often, one can hear the statement “Healthy Children Healthy Nation” and this is true. The future of our country is in the hands of children. Currently, the priority of health, moral and spiritual upbringing is unconditional. The data about the state of health of the younger generation is alarming, therefore, each year, its value grows.

The analysis of state documents shows that one of the priority tasks of the educational system of Ukraine is the upbringing of the child with a responsible attitude to their own health and health of others as the highest individual and social value. Formation of a physically perfect, socially active person has always been the main task of family and school. The need to revitalize the process of formation and establishment of a healthy lifestyle culture is actualizing the positive experience of ancient thinkers regarding the theoretical substantiation of the concept of “health” and “healthy lifestyle”, which determines the need for a study of the philosophical and historical literature of the past in the field of health among children and young people.

Health is an essential condition for a productive, active, creative life of a person. Violations in this area can lead to changes in professional and personal life, affect lifestyle and even endanger the integrity of the individual.

Prominent scholars, in particular V.P. Gorashchuk, S. O. Omelchenko, L. P. Sushchenko, V. I. Shakhnenko, studied the specifics of comprehension of a healthy lifestyle in ancient times. Relying on the experience of thinkers of antiquity, scientifically substantiated the theoretical positions regarding the problem of health formation in the modern world.

After the analysis of the scientific works of these researchers, we came to the conclusion that the question of the formation of a spiritually healthy and physically perfect personality of the child, and at the same time the problem of health promotion and healthy lifestyle of children, are very relevant and require careful and thorough study. The above mentioned determined the choice of the theme of the scientific article: “Human health and healthy lifestyle: views, thoughts, conclusions.”

The purpose is to analyze the ancient theories of the concept of “health”, and its constituent parts.

Objectives:

1. To analyze the essence of the concept of “health”.

2. To study approaches, thoughts, views of prominent philosophers, psychologists, and teachers on the explanation of the concept of “health”.

Materials and methods of research: analysis and generalization of literary sources, systemic and structural analysis.

The results of the research. In modern science there are several approaches to the issue of health: normocentric, phenomenological, holistic, discursive, integrative, and others. The concept of health is seen as the interaction, interdependence of certain aspects of life: physical, intellectual, emotional, social, moral, personal; the level of full physical, mental, social health and well-being of a person; as a need and time requirement; the condition and basis of harmonious life and happiness; human activity in the direction of the individual and public health strengthening.

Social health is reflected through the following characteristics: adequate perception of social reality, outside world interest, adaptation to the physical and social spheres, focus on socially useful work; altruism, empathy, responsibility, democratic behavior.

Physical health is one of the important components in the human health structure. It is due to the properties of the organism as a biological system that has the ability to preserve individual existence through self-organization. The manifestations of self-organization include: the ability to self-regulation, self-recovery.

Factors of physical health are: the level of physical development, physical training, the readiness of the body to perform physical activity, the ability to mobilize adaptive reserves of the body.

According to A. Maslow, under the psychological health of a person we understand the tendency to self-actualization. To do this, you need the following two conditions: correct self-perception and the pursuit of humanistic values [5].

Mental health of a person is a state of mental well-being, characterized by the absence of painful mental manifestations which provides adequate regulation of behavior and activities according to the real-life conditions. This contains not only psychological and medical aspects, but also social norms, values that regulate the spiritual life of person. The main criteria for mental health are: the conformity of subjective images and the nature of reactions to external stimuli, the significance of life events; age-appropriate level of maturity of the personal, emotional-volitional, cognitive spheres; adaptability in micro social relations; ability to self-control, intelligent planning of life goals and activity maintenance during their achievement [12].

Some researchers distinguish the following criteria for psychological health: adequate self-perception; the ability to focus; storing information in memory; critical thinking; the ability to logical thinking; creativity; mind discipline [10].

The majority of the personality theories study the components of psychological well-being. For example, Sigmund Freud believed that a mature person has the ability to work productively and maintain satisfactory interpersonal relationships. The ability to work, in its turn, requires the ability to set goals for themselves in the long run, reach them, and control anxiety in such a way that it does not negatively affect the behavior. Social relations imply the ability to perceive a diverse range of emotions, feelings in the process of communication without feeling of being threatened [13].

Greek philosophers defined spiritual health as a person's characteristic, the ability of the individual to solve complicated issues, while maintaining the optimal emotional background, adequate behavior. Under the term “spiritual health”, they understood the ideal and normal state of the individual's psyche, which gave rise to the basis for identifying the concept of mental and spiritual health.

One of the earliest definitions of health, which was formed in ancient times, belongs to Alkmeon (beg. V century BC). The philosopher defined health as a harmony or a balance of opposing forces [16]. Alkmeon noted that during illness the balance of elements in the human body is disturbed. An ancient representation of health in general is based on the idea of an optimal ratio of components of the bodily and spiritual essence of a person, which create an orderly internal unity.

A well-known philosopher, Ancient Greece's wise man, Plato also formulated the definition of health as a balance. According to Plato, health is expressed in the proportional relation between the spiritual and the physical [9].

In the dialogues of Plato, which tell the story of the condemnation and death of Socrates, the image of a man who has attained the highest level of inner harmony is depicted. What qualities help Socrates to maintain mental balance and adequate behavior in difficult times? Confidence in his duty, tenacity, awareness of his life-purpose.

In his writings, Aristotle reflects on the structure of the soul, happiness, virtues. The philosopher does not investigate mental torment, but in the tips on how to achieve happiness, you can find recommendations for avoiding mental suffering. Aristotle argues that the highest form of wisdom of a virtuous person is contemplation. When a person is unhappy, friends and family can support them. Thus, they take part of the misfortune to themselves. Therefore, “... true men by their nature beware of the compassion towards themselves” [1].

According to Aristotle, the suffering of a person ends when they realize their inevitability. This process of purifying from suffering is called catharsis.

The founder of the Epicurean school, the philosopher Epicurus, addressed various topics in his writings, noting that the main purpose of reasoning, that is, philosophy, is to find mental health. Condition, which people must seek, is the state of mind the philosopher called ataraxia (from the Greek ataraxia - the absence of excitement). If a person has reached the health of the soul, then, according to Epicurus, they were freed from fears of death and gods.

According to Seneca, only a wise man can possess true spiritual health: "The wise man is full of joy, cheerful and unshaken serene ...". The philosopher claims that such a state is characteristic of a person who appreciates what he has and does not want more. Seneca draws attention to the fact that mental suffering may not be perceived by a person.

The scientist, philosopher, mystic Pythagoras thought over the harmony he saw in musical sounds, the ratios of numbers and the human soul, so his ideas also relate to mental health. Harmony of the universe arises due to the interaction of opposite, hostile forces (for example, the world is darkness, movement - calmness, good - bad, male - female, etc.). Human is a part of the universe, so the human soul is tuned to the highest order inherent in the universe. In order to be in harmony with the cosmic order, one must adhere to the measure of thoughts, feelings and actions, to form values, to show restraint, respect for the scholars of the past [7].

Democritus described mental health in its subjective form, offered the term euthumia - it means "good state of the Spirit". This is a state in which the soul is at rest and in balance [6].

"Father of Medicine" Hippocrates suggested so-called humoral theory. Health, according to this theory, is "the correct combination of juices (or humor) of the human body" [4]. Hippocrates believed that all diseases arose precisely because of the disorderly combination of four main elements (blood, phlegm, yellow and black bile). The Hippocratic Humor Theory is a purely medical theory. Analyzing ancient theories, we can conclude that the observance of health was to be moderate in everything, to adhere to the "golden middle", any bodily or emotional excitement brings to man only harm.

Thus, the main idea of many works of philosophers, wise men of antiquity - each person is responsible for his own order or chaos in her soul, she creates well-being and health. The ancient Greek and Roman philosophers first raised the issue of personal responsibility of a human being for his own health, and for the health of others.

According to the views of Spinoza, freedom is identical to the bliss of the soul. A person must develop the mind. Although at the same time the mind is able to tame emotions, but has no infinite power. Through the knowledge of the nature of affections, each person has the opportunity to suffer less and even to achieve absolute freedom.

In the work "Philosophy of the Spirit" George Wilhelm Friedrich Hegel spoke about the development of a human being as an individual, about his inner experiences that accompany this process. Hegel shares such concepts as spirit, soul and body. The soul of man, according to Hegel, is a spirit burdened by the bodily principle of each individual. The body and soul associated with it can feel joy and suffering. Spirit, by contrast, is free. "The essence of the spirit ... is free ... The spirit has the power to persist in contradiction, and consequently, in suffering, rising both over evil and over the disease" [3]. The philosopher asserts that the spirit and mind are identical, notes that the important work of the human mind is to make the body comfortable and obedient to the soul, that is, to master its physical existence. The habit, which is a manifestation of the evolving Spirit, comes to the aid, that is, the habit is growing with the character that becomes its inalienable share.

The German philosopher Friederich Nietzsche, unlike the ancient authors, understood mental health as a sign of strength, vivacity, and life satisfaction. He categorically disagreed with the fact that passions destroy the inner world of man. The desire to avoid detecting feelings, to control them with the help of reason, in his opinion, is a sign of illness and weakness [8; 14].

Health for a long time was considered only as an object of medical science. Recently (the end of XX century – the beginning of the XXI century.) Psychologists are trying to form an independent approach to the problems of health, illness, etc. So, in 1978, in the US a department of Psychology was created by American Psychological Association. It is clear that with the development of the psychology of health as a branch of psychological science there were several definitions of the term "psychology of health".

The author of the epigenetic theory of personality, Eric Erickson, noted that the origins of personal health are in the basic preconditions for cognitive and social development of the child. According to Erickson, the human life cycle consists of eight stages. Each subsequent stage covers a large branch of social

functions and interpersonal relationships. Passing each stage, the individual acquires a higher level of psychological maturity, as well as a more integral identity. In his theory, Erickson emphasizes the importance of sociocultural and interpersonal mechanisms that determine individual development.

The interest in health issues is logical for our society. The expression of caring for health is observed in folk culture, features of the ethnic group. The monuments of national medicine and pedagogy include "Teaching" (XI century.), "Domostroy" (XV – XVII centuries) by Volodymyr Monomakh and others like that.

Mykhailo Lomonosov first drew attention to the importance of health care at the state level. In the Regulations of the Moscow and academic high schools, the scientist outlined the views on the organization of the right regime and nutrition, the schedule of classes, as well as the medical care of students.

Already in the middle of the XIX century, the health of students included propaganda of a healthy lifestyle, the need for knowledge about health and a healthy person. The most famous representatives of science and practice of the second half of the XIX century - N. Bok, S. P. Botkin, Sh. Otto, I. M. Sechenov, M. I. Pyrogov, F. Scholz began to pay more attention to the aspects of a healthy lifestyle and influence on the human organism of environmental factors, natural power, space [10].

In the national psychology a major contribution to the development of issues of psychology of health was made by academician V. M. Bekhterev. In his speeches and publications, he argued that the struggle for individual freedom is simultaneously a struggle for its health and normal development. In the report "The person and conditions of its development and health", the scientist noted that the person affects both heredity and education. A person, even with favorable heredity and living conditions, may be unhealthy due to the negative influence of education, the educational conditions in which she/he was in early childhood [2].

Currently, health is seen as an independent phenomenon, which requires deep, objective research and the creation of a modern concept. There was a need to create a healthy personality model for the study of the features of both healthy and pathological psyche.

To the theme of harmonious development of society and nature appealed in his writings M.A. Berdyaev. He noted that harmony in nature and in society is an objective law of motion and development of a common substance. But this balance is constantly broken. Therefore, the education of a sense of harmony, the desire to preserve universal values, the relationship of morality and politics - very important tasks of spiritual development of the individual.

Authors of the concept of "cosmoplanetary phenomenon of human" V.P. Kaznacheyev and E.A. Storin suggested differentiating the health of the population from the health of an individual. In their opinion, "the individual's health is a dynamic process of preserving and developing its socio-natural functions, social and labor, socio-cultural and creative activity at the maximum life cycle". "This development involves the improvement of psychophysiological, socio-cultural and creative capabilities of people" [11]. That is, the main criterion of health is human productivity, participation in global processes, and not a single individual, but entire populations for many generations.

With the notion of "health", the concept of "lifestyle" is closely related and often used. Though in the first half of the XX century there have already been researches devoted to this topic; it is believed that the fashion for a healthy lifestyle was launched in the United States in the 70's of the XX century. This is one of the most important categories that includes an idea of any kind or type of human activity. This category is characterized by the peculiarities of everyday life of a person, which includes work activity, leisure activities, peculiarities of life, satisfaction both material and spiritual needs, participation in the life of society, norms and rules of conduct. Researchers outline the main factors that determine the way of life of a person: the level of general culture and education; material conditions of life; sexual, age and constitutional features of a person; health status; ecology; features of the profession and work activity; peculiarities of family relationships and family upbringing; human skills; the possibility of satisfaction of biological and social needs [10].

Lifestyle includes three categories: living standards, quality of life and lifestyle.

Living standards is an economic category. It is expressed by the level of satisfaction of material, cultural and spiritual needs.

The quality of life is a sociological category that characterizes comfort and satisfaction of human needs.

Lifestyle is the socio-psychological category. These are standard forms of behavior to which psychology and psychophysiology of the individual are subject.

The concept of "healthy lifestyle" integrates the relationship of lifestyle and human health, combining all the conditions, personal qualities, and processes, that is, everything that helps the normal functioning of the person in the professional, social, everyday spheres. It also expresses the attitude of the person, its guidelines for the development and improvement of individual and public health. Health should be the first human need, but satisfying this need is complex, determined in nature and not always conducive to achieve the desired result.

A healthy lifestyle is connected with the personality-motivational sphere of the person, social, physical abilities and skills. It is very important to maintain health at the optimum level, not only avoiding risk factors (fighting alcoholism, smoking, drug addiction, and eating malnutrition), but also developing trends that contribute to a healthy lifestyle.

Thus, a healthy lifestyle involves: the pursuit of physical perfection; achievement of mental harmony in life; providing a good nutrition; avoidance of destructive behavior, observance of rules of personal hygiene; purification of the organism, its quenching. In order to raise the level of health of the younger generation, it is necessary to create a system of vacant space, in which all social institutions of our society will be united by a single idea, joint efforts aimed at fulfilling the state order regarding the formation and upbringing of a healthy generation.

For now, it is required the development of individual health improvement programs, various educational and health services, effective forms and methods of interaction of all social institutions for conducting psycho-developmental, correctional, rehabilitation and rehabilitation classes, trainings that affect the formation and development of personality, state of health and way of life of schoolchildren.

Discussion. Health is the most important value for everyone. Many proverbs and folk wisdom are said in his honor. It is for a reason, because anything is possible for a healthy person. And only after getting sick, we begin to appreciate a good state of health, lack of pain and malaise, vigor and cheerfulness. We also confirm the view of prof. Nikiforova G. S. about the main factors that determine the way of human life. The obtained data supplement the data of various authors [11; 15; 17] on the formation of a healthy lifestyle and the essence of the concept of human "health".

Conclusions and further research prospects:

1. A healthy person can be considered to be one, who is characterized by harmonious physical and mental development, well adapted to the physical and social environment. They fully realize physical and mental abilities, can adapt to changes in the environment when they are beyond the norm, and contributes to the welfare of society, in proportion to its abilities.

2. Analyzing ancient theories, we can conclude that the observance of health was to be moderate in everything, to adhere to the "golden middle", any bodily or emotional excitement brings to man only harm. Consequently, the main idea of many pieces of work of philosophers, wise men of antiquity is that each person is responsible for its own order or chaos in soul, everybody creates well-being, prosperity, and health by themselves. The ancient Greek and Roman philosophers were the first who raised the issue of personal responsibility of human for its own health, and for the health of others.

Prospects for further research are to highlight the views and opinions of philosophers, psychologists and medieval educators on the concept of human health and healthy lifestyle.

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STRUCTURAL CHARACTERISTICS OF THE PSYCHOSOMATIC SYSTEM OF UKRAINIAN COSSACKS

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Abstract

Topicality. In terms of external threats, solving the problem of forming a culture of health and combat capacity of the Ukrainian population by accessible means, namely, based on the treasury of the national heritage - the national martial arts of Ukraine, one of which is the combat hopak, is actual. ***Formulation of the problem.*** The analysis of the latest researches and publications showed that the combat hopak was studied by scientists as an approach in the Ukrainian national physical culture and sport and in ethnopedagogy. The specialists investigated the scientific methodological issues of the general theory of training athletes, the structure of competitive activities, the impact of the training process on a human body, etc. But the study of the structure of the psychosomatic system of the combat hopak was given insufficient attention. ***The purpose of the study*** is to reveal the structure of the psychosomatic system of the combat hopak. ***Methods of research*** – historical, logical and theoretical analysis of the sources of information. ***Research results.*** It has been found out that the combat hopak is a complex structured psychosomatic system based on the reconstruction of the traditions of the Ukrainian Cossacks and includes elements of the spiri tual, mental, and physical development of various groups of the population. It is a versatile training, a kind of physical culture, a national sport, an academic discipline in secondary and higher educational institutions. The elements of the psychosomatic system of the combat hopak are used for the regulation of the psychosomatic state, the adoption of a healthy lifestyle, ethical principles, and the vital skills in the society, the development of physical qualities, combat training and upbringing. Recreational and tourist events of the religious-patriotic study dedicated to the Orthodox holiday of the Blessed Virgin Mary represent the structural elements of the psychosomatic system of the combat hopak and other ancient psychosomatic systems of the Ukrainian Cossacks. ***Conclusions:*** the combat hopak is a complex structured psychosomatic system; the elements of its structure are moral and ethical, physical, emotional, mental and spiritual training.

Key words: combat hopak, historical aspects, psychosomatic system, elements of the structure, culture of health.

Олена Твердохліб. Структурна характеристика психосоматичної системи українського козацтва. ***Актуальність.*** В умовах зовнішніх загроз актуально вирішення проблеми формування культури здоров'я й боєздатності населення України доступними засобами, зокрема зі скарбниці національного спадку – національних бойових мистецтв України, одним з яких є бойовий гопак. ***Постановка проблеми.*** Аналіз останніх досліджень та публікацій показав, що бойовий гопак вивчали науковці як напрям української національної фізичної культури й спорту та етнопедагогіки. Проаналізовано науково-методичне поле загальної теорії підготовки спортсменів, структуру змагальної діяльності, вплив тренувального процесу на організм людини та ін. Вивченню структури психосоматичної системи бойовий гопак приділено недостатньо уваги фахівців. ***Мета дослідження*** – виявити структуру психосоматичної системи «бойовий гопак». ***Методи дослідження*** – історичний і логіко-теоретичний аналіз джерел інформації. ***Результати дослідження.*** Установлено, що бойовий гопак – це складноструктурована психосоматична система, яка ґрунтується на реконструкції традицій українського козацтва й уключає елементи духовного, психічного, розумового та фізичного розвитку різних груп населення. Це різнобічний гарт, вид фізичної культури, національний вид спорту, навчальна дисципліна в середніх і вищих навчальних закладах. Елементи психосоматичної системи «бойовий гопак» використовуються в регуляції психосоматичного стану, генеруванні здорового способу життя, етичних засад, навичок до правил життя у соціумі, розвитку фізичних якостей і бойового гарту та виховання. Рекреаційно-туристичні заходи релігійно-патріотичного спрямування, що приурочені до православного свята Покрова Пресвятої Богородиці, представляють структурні елементи психосоматичної системи «бойовий гопак» й інших давніх психосоматичних систем українського козацтва. ***Висновки.*** Бойовий гопак – це складноструктурована психосоматична система, елементами структури якої являються морально-етичний, фізичний, емоційний, розумовий і духовний гарт.

Ключові слова: бойовий гопак, історичні аспекти, психосоматична система, елементи структури, культура здоров'я.

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Елена Твердохлеб. Структурная характеристика психосоматических системы украинского казачества. Актуальность. В условиях внешних угроз актуально решение проблемы формирования культуры здоровья и боеспособности населения Украины средствами, в том числе из казны национального наследия – национальных боевых искусств Украины, одним из которых является боевой гопак. ***Постановка проблемы.*** Анализ последних исследований и публикаций показал, что боевой гопак изучали ученые, как направление украинской национальной физической культуры и спорта и этнопедагогики. Специалистами изучались научно-методическое поле общей теории подготовки спортсменов, структура соревновательной деятельности, влияние тренировочного процесса на организм человека и др. Изучению структуры психосоматической системы боевой гопак уделялось недостаточно внимания специалистов. ***Цель исследования*** – выявить структуру психосоматической системы боевой гопак. ***Методы исследования*** – исторический и логико-теоретический анализ источников информации. ***Результаты исследования.*** Установлено, что боевой гопак – это сложно-структурированная психосоматическая система, основанная на реконструкции традиций украинского казачества и включает элементы духовного, психического, умственного и физического развития различных групп населения. Это разносторонняя закалка, вид физической культуры, национальный вид спорта, учебная дисциплина в средних и высших учебных заведениях. Элементы психосоматической системы боевой гопак используются в регуляции психосоматический состояния, генерировании здорового образа жизни, нравственных устоев, навыков правил жизни в социуме, развития физических качеств и боевой закалки и воспитания. Рекреационно-туристические мероприятия религиозно-патриотического направления, приуроченных православному празднику Покрова Пресвятой Богородицы представляют структурные элементы психосоматической системы боевой гопак и других древних психосоматических систем украинского казачества. ***Выводы:*** боевой гопак – это сложно-структурированная психосоматическая система, элементами структуры которой являются морально-этическая, физическая, эмоциональная, умственная и духовная закалка.

Ключевые слова: боевой гопак, исторические аспекты, психосоматическая система, элементы структуры, культура здоровья.

Introduction. In terms of external threats, the problem of formation of a culture of health and combat capacity of the Ukrainian population by availabe psychosomatic means, namely those based on the treasury of the national heritage is of vital importance. The effective tool to be used for solving this problem is, according to the experts in the field of Physical Education and Pedagogy A. Tsos, Ye. Prystupa, N. Dedeliuk and others, is the study of the national systems of psychophysical education, which were formed due to a long- term collective creative experience of many generations, one of which is the the combat hopak.

The review of the recent papers suggests that Ukrainian national martial art the combat hopak was investigated by the scholars in the following areas: the traditions of Ukrainian national physical education (V. Prystupa, V. Pilat), scientific and methodological field of the general theory of athletes training and the structure of competitive activity (V. Bohuslavska, M. Basistyi [1]), training process and its impact on the human body, the fundamentals of homeland defence ([4, 7], M. Honcharenko, S. Tolpyhin, M. Danylevych, A. Hachkevych) etc. However, few attempts have been made to investigate the structure of the psychosomatic system “the combat hopak”.

The purpose of the research is to reveal the structure of “the combat hopak” psychosomatic system.

Methods of the research – historical, logical and theoretical analysis of the sources of information.

Research results. According to the generalization [1–7], we have the following. The combat hopak was reconstructed at the end of the 20th century by the martial artist V. Pilat [4]. Ancient Ukrainian martial arts of Cossacks, including kharakterniks, self-defense techniques of the peasants from Galicia, generic and personal experience of V. Pilat, folk dances with the elements of combat techniques and tactics (hopak, metelytsia, arkan, cossachok, povzunets, etc.), worldview and social factors have become the basis for the combat hopak.

In 1987, the combat hopak was recognized as a national sport and the school of combat hopak was opened in Lviv. In 1999, the concentration in close-in combat hopak was introduced into the curriculum at Lviv State Institute of Physical Culture. In 2000, the concentration in combat hopak was introduced into the curriculum at Dniprodzerzhinsk College of Physical Education.

The combat hopak sports sections started their work at a number of higher educational institutions of Ukraine, in particular at the National University of “Kyiv-Mohyla Academy”.

In 2001 the International Federation of combat hopak was founded in Ukraine and the national programme for the revival and development of Ukrainian cossackhood was approved by a decree of the President of Ukraine. The programme recommends to introduce the combat hopak into the course syllabus “The history of military art of the Ukrainian Cossacks” in military high schools and high schools with enhanced military physical training and also to include it into in the sports classification of Ukraine. In 2002 the children’s and women’s schools of the combat hopak were founded.

The programme of the combat hopak competitions consists of five types: a single combat with full contact (herts), a single combat with a batch contact (bornia), a single combat with a limited contact (zabava), imitation of a combat to music (tandvobiy), individual demonstration of the technique in dance style to music (odnotan). Skill level is evaluated on seven levels (zhovtyak, sokil, yastrub, dzhura, kozak, kharakternyk and volkhv) which correspond to athletic titles (III, II, I, Candidate for Master of Sports, Master of Sport, Master of Sport of International Class, Merited Master of Sport). Training sessions are held to traditional Ukrainian music and the programme. Besides psychophysical and technical training, include mastering the techniques of hypnosis, blindfolding, psychosomatic regulation etc.

Philosophical component of the combat hopak is based on the spiritual foundations of Christianity and Ukrainian traditions, and mythological one − on the Vedic heritage [3]. The main moral and ethical guides are the pursuit of truth, the victory over evil forces for the victory of goodness, love and positive creative forces, the transformation of the corporeal into the spiritual, the awareness of everybody's purpose in life and the dependence of the destiny of their family and people on its achievement.

The basis of the technical arsenal of the combat hopak is formed by stances, steps, jumps, rotations, blows and blocks with various parts of the body, feet sweeps, self-defense and attack techniques and their imitations, acrobatics, dance and group rhythmic movements. Stances are static offensive or protective starting positions, poses for prays, meditations and ritual ceremonies, the imitating poses modeling the poses of birds, animals, people's activities, buildings, cult-objects (shield, wall, tower, candle, trident, horseman, crane, bear, spider, frog, dog, etc.). In dances there are various combat schemes and types of movement, imitations of combat techniques without support, on a fixed or moving support, including weapons.

Special training includes: crawling, combat exercises with weapons (saber, belt, mace, spear, stick in one or two hands), combat ethno-dances to music or verbal-sound accompaniment, hoidky, cossack arm wrestling in the position on the abdomen and the development of acting technique. Hoidky is a rocking of the body by inertia in different directions, their practice contributes to the development of the ability to use the enemy's energy in combat to increase the strength and speed of blows and, according to the legend, the development of the skill to avoid bullets. Acting skills help to distract enemy's attention in combat. In combat games blows with various parts of the body and objects in a playful-entertaining or threatening style are imitated. Verbal-sound practices promote self-regulation and extraneous regulation of adepts, their spiritual and patriotic education. They include exclamations, appeals, prayers, recitation of poems, ballads and proverbs, singing songs of historical-heroic and moral-ethical themes. Learning the Ukrainian national traditions and rituals, participation in the ceremonies of God, ancestors and heroes worshiping, congratulations and respect for the elders, teachers and partners ensure the educational effect. In ancient times the extreme trials on the verge of life, initiation into magical rituals and ceremonies, mastery of a blind hand-to-hand combat with a stick (kosturets), the blind kobzars managed, etc. developed the superhuman abilities of adepts

Let us focus on the structure of recreational and tourist activities of religious and patriotic character arranged for the Orthodox holiday of the Intercession of the Holy Virgin, the patroness of Ukrainian Cossacks which are held in different cities of Ukraine in October.

Every year the festival "Pokrovskiy Fair" is held in Nizhyn. Its program includes folk, on-stage performance and amateur groups shows, master classes of folk artists, excursions to temples, fortresses and museums, Sokyryntsi Galagan Palace and Park, the Grave of Colonel I. Galagan, Galagan arsenal in Pryluky. The Cossack festival "The Intercession on Khortytsia" is held in Zaporizhia. Its aim is to acquaint people with the history, customs and the martial arts of the Zaporizhian Cossacks. The program includes: arts and crafts market, folk groups shows, presentations of the traditions of the regional ethnic groups, theatrical performances with the reconstruction of the life and martial arts of Sich Cossacks, litany in the Church of the Intercession of the Holy Virgin, the children's workshop, the spectacle of the puppet theater "Mykyta Kozhumiaka", excursions to the historical and cultural complex of the Khortytsia island "Zaporizhian Sich" where the elements of architecture, culture and life of the Zaporizhian Cossacks were reproduced.

The folk and ethnographic Cossack festival "Samarska Pokrova" is annually held in the city of Stara Samara on the Dnipro River. The program includes: the Cossack circle, the exhibition of artefacts from the Bohorodytska Fortress, traditional Cossack martial arts exhibitions, workshops on mastering traditional Cossack amusements, weapons and methods of self-defense, archery contests, javelin throwers and snags throwers competitions, horse running, folk dances, games and amusements, children's games and competitions.

During the festival the ceremony of awarding the winners of the all-comers city competitions in children and juniors' sports and patriotic game "Sokil" (Dzhura) and the shows of the folk theater "Rodoslav" took place. The facilitator of the festival is "The Cossacks Charitable Foundation named after I. Sirco". The participants of the festival are children and juniors' Cossack organizations, free Cossacks, folk art groups, craftsmen, and others.

In the Cossacks' khutir (small village) "Cossacks Sich", that was renewed by the enthusiasts of the public organization "Cossacks of the Dnipro region" in Galushkivka, different events are kept, which acquaint with culture and customs of Cossacks. The program includes visiting the ethnographic museum, horse performance, the Cossacks with weapons exhibitions, the initiation ceremony into the Cossacks, riding and archery practice, participation in the fair, and the brychka riding.

The annual festival "Haidamaka" that is held in Kyiv is connected with the feast of the Intercession of the Holy Virgin. The main task of the festival is preservation and promotion of the history of Ukraine and the Cossacks' customs and traditions, in the years since Kyivan Rus. The facilitator of the festival is the non-governmental organization "The fraternity of the Cossack Military tradition "Spas", whose activity is dedicated to preservation and promotion of both the military traditions of the Ukrainian Cossacks and Ukrainian culture as a whole. The first festival "Haidamaka" was held on the territory of Truhaniv Island in October 2008. The program of the festival included such activities as Cossack amusements, obstacle course racing, cooking Cossack kulish, line fights, saber fencing, jousting, fights using belts, bags, and airsoft gun. Such events took place: an open seminar "Spas is the combat custom of Ukrainian people", the procession on the occasion of the formation of the Ukrainian army and the Cossacks, excursions to Trypillia (familiarization with the antiquities of Trypillian culture), and Bucryn − World War II memorial "Bukrinsky bridgehead", Trakhtemyriv, the Cossack graveyard, the graves of Cossack Mukha and the hetman of the Right-Bank Ukraine Andrii Mohyla, Scythian walls and others. During the second and third festivals "Haidamaka" such activities were held: competitions in pitching a tent, starting a fire and kulish cooking; Cossack quest; traditional amusements; night fun; obstacle line; saber fencing and jousting; cross fight; exercises with a whip; archery and cannon shooting; water obstacles traverse; kettle-drum playing. The program of the fourth festival "Haidamaka" included: visiting the sights of Ukrainian military glory, folk crafts fair, environmental campaigns, workshops in Ukrainian close fight, Cossack quest, concerts of the famous singers.

The celebration of the Intercession of the Holy Virgin in Mamaieva Sloboda in Kiev included the following events: the festive church change-ringing, the divine service in the Cossack Pokrovska Church, the concert of folk groups, the show of the best European Cossacks' stunt division, the Cossack double-event, sabre fencings, archery, kulish, shooting from Cossack cannons, falconets, mortars, workshops.

As can be seen from above, the combat hopak is a psychosomatic system, the scheme of which can be represented as follows (*Fig. 1*).

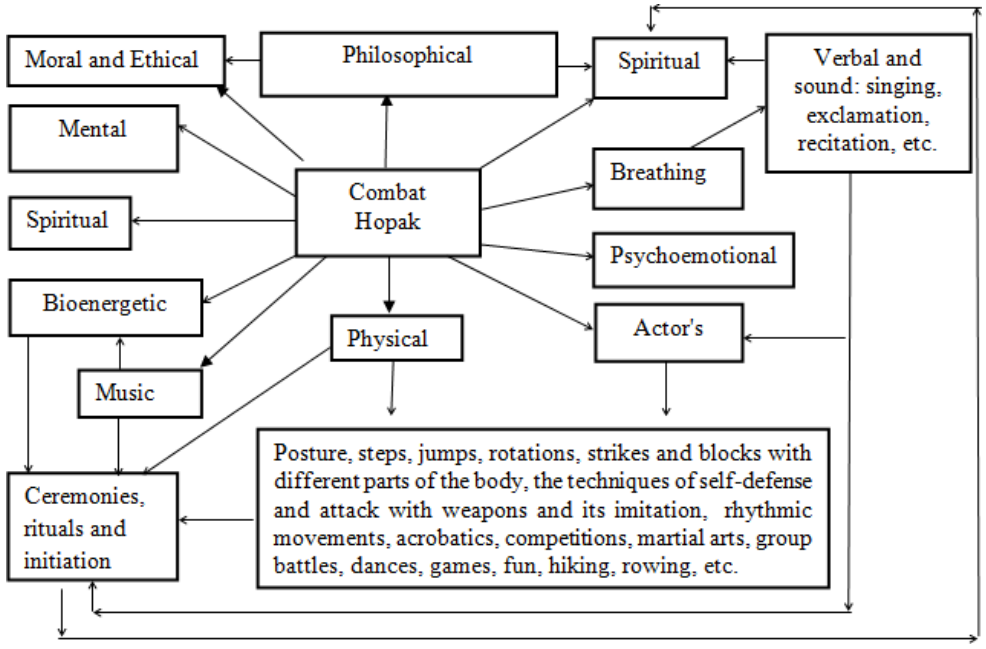

Fig. 1. *Elements of the psychosomatic system "Combat Hopak"*

In general, the results of the survey show, that the combat hopak is a psychosomatic system with the complex structure which is based on the reconstruction of the traditions of the Ukrainian Cossacks. It includes the elements of spiritual, mental, and physical development of various population groups. It is a versatile training, a kind of physical culture, a national sport, an academic discipline in secondary and higher educational institutions. Its elements are used in educational, recreational, sports and tourist-recreational spheres, in generation of a healthy lifestyle, ethical principles and vital social skills, the development of physical qualities, patriotism, the regulation of the psychosomatic state.Exhibition performances of the schools of combat hopak and different workshops are included into the programs of numerous cultural-educational, recreational and tourist events. Religious-patriotic recreational and tourist events dedicated to the Orthodox holiday of the Intercession of the Holy Virgin represent the structural elements of ancient psychosomatic systems of Ukrainian Cossacks: worldview, way of life, social relations, physical, emotional, mental and spiritual training, music, singing, recitation. They ` `.`.include different age and social groups of the population, form the health culture using the psychosomatic systems of Ukrainian Cossacks.

Conclusions and perspectives for further research. The combat hopak is a psychosomatic system with the complex structure. The important elements of this structure are moral, ethical, physical, emotional, mental and spiritual training. We advocate further research on ancient psychosomatic systems of different cultures.

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SOCIAL RESPONSIBILITY IN ACTIVITY OF FITNESS CLUBS IN UKRAINE

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Abstract

Topicality. Social responsibility encourages different organizations to take into account the interests of society, consumers, workers, and communities. In the modern world, social responsibility of business is a generally accepted rule, which is followed by most organizations. Caring for human health should be the mission of every physical culture organization. **The purpose** is to analyze the activities of "FitCurves" and "SportLife" fitness club networks of their social responsibility. **Methods of research:** theoretical analysis and generalization of scientific literature, sources and information of the World Internet, documentary me thod. **Results.** In Ukraine, the fitness industry is represented by functioning of 1419 clubs. They need to have a steady reputation to maintain leading positions in the market. It is possible to achieve this through the conscious formation of their own positive image. The "FitCurves" fitness club network, which has been operating in the fitness market for more than 11 years, regularly carries out social and charitable activities. The "FitCurves" social projects are developing in 5 directions: women, family, health, environment and charity. The "FitCurves" fitness club network has been awarded in status badge "A sign of social responsibility". In Ukraine the "SportLife" network is the largest specialized corporation with 17 own enterprises. "FitCurves" is regularly engaged in social and charity activities. "Sport Life" network also pays a significant part of its income to finance a variety of physical and sport events. There were from 80 to 9000 participants. **Conclusions.** Ukraine should promote and create stimulus for social responsibility, provide legal conditions for social investment, flexible tax policies in relation to philanthropic organizations. "FitCurves" and "Sport Life" fitness clubs maintain their positive image through a civilized business and adhere to the principles of social responsibility to preserve the leading positions of the fitness club network. That is why the largest number of fitness clubs are in cities of Ukraine.

Key words: social responsibility, sports mass events, fitness club.

Любов Чеховська. Соціальна відповідальність у діяльності фітнес-клубів України ***Актуальність.*** Соціальна відповідальність заохочує різноманітні організації враховувати інтереси суспільства, споживачів, працівників, громади. У сучасному світі соціальна відповідальність бізнесу є загальноприйнятим правилом, якого дотримуються більшість організацій. Турбота про здоров'я людини повиннастати місією кожної фізкультурної організації***. Мета статті –*** проаналізувати діяльність мережі фітнес-клубів «FitCurves» та «SportLife» щодо їх соціальної відповідальності. ***Методи дослідження*** – теоретичний аналіз й узагальнення наукової літератури, джерел та інформації світової мережі Інтернет, документальний метод. ***Результати.*** Фітнес-індустрія України представлена функціонуванням 1419 клубів.Для збереження провідних позицій на ринку вони повинні мати стійку репутацію. Досягнути цього можливо за допомогою усвідомленого формування свого позитивного іміджу. Компанія «FitCurves» на ринку фітнес-послуг працює понад 11 років. У своїй діяльності вона регулярно здійснює заходи соціального та благодійного спрямування. Соціальні проекти «FitCurves» розвиваються за п'ятьма напрямами – жінка, сім'я, здоров'я, навколишнє середовище й благодійність. Мережа фітнес-клубів «FitCurves» отримала статусний знак «Знак соціальної відповідальності». Мережа «SportLife» – найбільша спеціалізована корпорація України, у якій діє 17 власних підприємств. Мережа «SportLife» значну частину свого прибутку також спрямовує на фінансування різноманітних регулярних й одноразових фізкультурно-спортивних заходів. У них узяли участь 80–9000 осіб. ***Висновки.*** Україна повинна сприяти та створювати стимули до соціальної відповідальності, забезпечувати правові умови соціальних інвестицій, гнучку податкову політику стосовно організацій-благодійників. Для збереження провідних позицій мережі фітнес-клубів «FitCurves» і «SportLife» створюють свій позитивний імідж через цивілізований бізнес та дотримуються принципів соціальної відповідальності. Саме цим обґрунтовуєтьсях найбільша кількість фітнес-клубів у містах України.

Ключові слова:соціальна відповідальність, спортивно-масові заходи, фітнес-клуб.

Любовь Чеховская. Социальная ответственность в деятельности фитнес-клубов Украины. ***Актуальность.*** Социальная ответственность поощряет различные организации учитывать интересы общества,

потребителей, работников, общества. В современном мире социально ответственная деятельность бизнеса является общепринятым правилом, которого придерживаются большинство организаций. Забота о здоровье человека должна стать миссией каждой физкультурной организации. ***Цель статьи*** – проанализировать деятельность сети фитнес-клубов «FitCurves» и «SportLife» по их социальной ответственности. ***Методы исследования*** – теоретический анализ и обобщение научной литературы, источников и информации мировой сети Интернет, документальный метод.

Результаты. Фитнес-индустрия Украины представлена функционированием 1419 клубов. Для сохранения ведущих позиций на рынке они должны иметь устойчивую репутацию. Достичь этого можно с помощью осознанного формирования своего положительного имиджа. Компания «FitCurves» на рынке фитнес услуг работает более 11 лет. В своей деятельности она регулярно осуществляет меры социальной и благотворительной направленности. Социальные проекты «FitCurves» развиваются в пяти направлениях: женщина, семья, здоровье, окружающая среда и благотворительность. Сеть фитнес-клубов «FitCurves» получила статусный знак «Знак социальной ответственности». Сеть «SportLife» – крупнейшая специализированная компания Украины, в которой действует 17 собственных предприятий. Сеть «SportLife» значительную часть своей прибыли также направляет на финансирование различных физкультурно-спортивных мероприятий, в которыхприняли участие 80–9000 человек. ***Выводы.*** Украина должна способствовать и создавать стимулы к социальной ответственности, обеспечивать правовые условия социальных инвестиций, гибкую налоговую политику по отношению к организациям-благотворителей. Для сохранения ведущих позиций сеть фитнес-клубов «FitCurves» и «SportLife» создают свой положительный имидж через цивилизованный бизнес и соблюдают принципы социальной ответственности. Именно этим обосновывается их наибольшее количество фитнес-клубов в городах Украины.

Ключевые слова: социальная ответственность, спортивно-массовые мероприятия, фитнес клуб.

Statement of the problem. Today social responsible business is a generally accepted rule that is followed by most organizations around the world [1; 6; 7]. After all, social responsibility is a concept, which encourages organizations to take into account the interests of society, awareness of the impact of activities on consumers, workers, the public and the environment in all aspects of its activities [2; 4; 10]. Business is not only responsible for compliance with laws, the provision of quality services, but also voluntarily assumes obligation to society to improve the quality of people's life. By adopting such a strategy, organizations demonstrate that they have achieved a corresponding level of maturity in their development. That is, the more civilized business, the more it becomes a participant in the social life of its city, region, state [8].

Care for human health should become a mission of every organization, especially in physical and sport establishments. It should be noted that the social responsibility of business in Ukraine is in the nascent stage. First of all, the most active in this area is the representation of the already experienced foreign companies and adapting them to our society. However, this process requires coordination and stimulation, and then - participation in it of the state, which should define social responsibility as the desired behavior for business and develop a set of appropriate incentives [5]. In Ukraine, the social responsibility of business will only the work when owners of fitness clubs having opened their social programs feel that it is profitable for them.

That is why it seems relevant to investigate social responsibility in the activities of various organizations, including fitness clubs in Ukraine.

Connection of work with scientific programs, plans and themes. The work is carried out in accordance with the scientific theme of the Fitness and Recreation departments of the Lviv State University of Physical Culture "Technology of attracting the population to improving physical activity" (state registration number 0117U 003040).

The purpose of research is to analyze the activities of "FitCurves" and "SportLife" fitness club networks according to their social responsibility.

Methods of research: theoretical analysis and generalization of scientific literature, sources and information of the World Internet, documentary method.

Results of the research and their discussion. In Ukraine, exploring the state of the fitness industry has established the functioning of 1419 clubs [3]. That is why, in conditions of severe competition, they need to have a steady reputation to maintain leading positions in the market. It is possible to achieve this through the conscious formation of their own positive image. It is the image that makes it possible for the fitness club to be accepted by partners, consumers and the whole society. Today, the fitness services market in Ukraine includes both network centers (113 networks of fitness clubs) and single non-network

establishments. It should be noted that Ukrainian 4 networks have more than 10 clubs, they are «FitCurves» – 153 fitnessт clubs for women, «Sport Life» – 56 clubs, «Malibu» - 38 clubs, «Atletico» – 23 clubs, etc. The first two are an international network, that is why their activity was investigated through official websites by us.

The «FitCurves» fitness club network is represented in 86 countries and has more than 12,000 clubs on five continents. In 2007, it started its activities in Ukraine. For 11 years the company has been working successfully to help every woman become healthier and more energetic and at the same time to effectively and safely solve the problem of losing weight and restoring metabolism. The "FitCurves" company in its activities regularly carries out social and charitable measures, that is, fully understands its social responsibility [9]. The "FitCurves" social projects are developing in 5 directions: women, family, health, environment and charity. Besides, the company's employees visit orphanages and oncological centers, help the elderly and disabled people and conduct free outdoor training for housewives. It should be noted that a number of such projects and events were supported in 2016/17. The most significant are presented in Table 1.

Table 1

Social activities of the «FitCurves» fitness clubs network

№	Event	Content/activities	Participants
2017 year			
1	*Thanksgiving day*	promotion of healthy lifestyles: holding children's games, power show, sports competitions, contests, drawn games with gifts for the whole family, entertainment, outdoor cinema; All-Ukrainian two-weekly Motor Rally Final; concert	more than 500 1000 persons
2	*Large-scale international movement «We are for quality, healthy and local»*	promotion of healthy lifestyle: carrying out a setting-up exercises, examination on medical equipment "Omron"	– employees of the "Auchan" hypermarket network, Kryvyi Rih, Zaporizhia, Lviv, Odessa – 2000 visitors received gifts – 1500 participants were examined – 1400 received advice from a fitness trainer and a body weight correction specialist
3	*Social Action «Live Better»*	promotion of healthy lifestyle	1000 persons
4	*«Let's Make Ukraine Clean»*	Care for the ecology of the environment: cleaning the area near the office	workers
5	*Social-educational fitness tour «Live dancing»*	popularization of a healthy lifestyle among women, the formation of a new culture of health and new healthy family traditions	12 cities of Ukraine
6	*Project «Activate Health»*	periodic morning exercises – 30 minutes of exercise	more than 1000 persons
2016 year			
1	*Social project «Pink October»*	– information and assistance to women in the fight against breast cancer; – transfer of medical instruments to the separation of breast tumors unit and its reconstructive surgery	more than 100 clubs in 22 cities of Ukraine (53 thousand women were informed about the prevention of the disease, 1200 women were examined on preferential terms in the amount of 430 thousand UAH))
2	*Charity Party PinkParty*	attraction of attention to the problem of breast cancer	12 cities of Ukraine

As we can see, the number of events increases, which indicates the social position and strategy of the company's development. Such its activity was recognized by the society. The range of "FitCurves" Fitness Clubs has got the status mark "Social Responsibility Sign" at the regional level as part of the unique Social Responsibility Mark (SRM) project confirms the company's significant contribution to the social sphere and active support for important charity initiatives. This proves the fulfillment of requirements for such a status (total deductions for charity in the amount of 10,000 S during the year, the creation of an effective charity process, actions leading to salvation from the death of human lives, etc.). In Ukraine, FitCurves is steady adhering to the principles of socially responsible conduct of its activities.

We have also analyzed the activity of another international range of fitness clubs "Sport Life" – the largest specialized corporation in Ukraine, which operates 17 own enterprises. In 2017, they totalled 350,000 members. It turns out that one of the important directions of its work is social responsibility [11]. A significant part of its profit range directed to financing a variety of sports and sports events. Thus, 22 sports events in 2016 and 40 in 2017 were held and supported, from 80 to 9000 took part in them.

Support for regular sports events is shown in Table 2.

Table 2

Regular social events of the range of fitness clubs "Sport Life"

№	Events	Participants	
		2016	2017
1	Championship of family sport in Kyiv	62 families, which represented 66 schools	over 500 Kyiv families
2	*«Race of the Nation»: proud yourself!:* Ukrainians won heavy race Snow Race від «Race of the Nation»: to run 7+ km and 15+km overcoming obstacles	300 participants	1200 amateurs of extreme rest
3	The 6th Kyiv International Half Marathon «Nova Poshta Kyiv Half Marathon»	7100 athletes from 43 countries	over 9 thousands of athletes of different age categories from 50 countries
4	Family Festival (volleyball, football, children's animation zone, artistic master classes, family sports, family quest, scientific experiments, arm-wrestling)	about 100 families	about 150 families
5	Traditional swimming tournament among amateur swimmers- amateurs "FIT-3 League"	150 participants	280 participants from Odessa, Rivne, Kherson, Zaporizhzhia, Lviv, Kyiv
6	Winter run «KMRC SNOW RUN»	200 participants	310 participants, about 1500 viewers

As we can see one of the prominent events is the Kyiv International Half Marathon "Nova Poshta Kyiv Half Marathon", which attracted more than 9 thousand athletes of different age groups from 50 countries (2017).

Except for these regular events, Sport Life has carried out other not less important sport events with a large number involved in both 2016 and 2017 (Table 3).

Table 3

Sport events of the range of fitness clubs "Sport Life"

№	Physical culture and sports events	Participants
1	**2**	**3**
2016р.		
1	The first INTERPIPE Dnipro Half Marathon	over 1400 participants from 9 countries, including nearly 250 children.

End of table 3

1	2	3
2	The first international junior squash championship on Barakat Squash Junior Open 2016	over 80 children (11-19y..) from Ukraine, Russia and Belarus
3	Night run by Samsung Galaxy S7 Night Run —	over 2000 participants
4	Open marathon swimming Aquaman 3.8	over 200 athletes
5	All-Ukrainian Festival of Healthy lifestyle Odessa STAN Workout Fest 2016	over 250 people
6	Amateur mini-football tournament in the Dnipropetrovsk region «Libertad»	56 teams
7	Great international marathon GRAND PRIX LVIV HALF MARATHON 2016	720 participants, including 12 foreigners
8	«Race of the Nation» – a run with obstacles	more than 1000
9	All-Ukrainian range fitness convention «Sport Life Convention»	over 100 participants from all regions
2017p.		
1	International tournament Kyiv Battle 2017	60 professional athletes and 60 amateurs
2	“Ladies Run”	500 men 400 women
3	Mixed Martial Arts Tournament MMA Road to WWFC	40 participants
4	Inter-corporate children’s sports competition “WE are the CHAMPIONS”.	38 children’s teams
5	Semi-marathon «CrossHill» 2017.	2000 participants
6	Odessa international semi-marathon	over 2000 participants from 25 countries

In addition to supporting these events, we found that the Sport Life range plays the primary role of patronage and sponsorship for sports development and provides material support to sports teams of different levels – from the yard to the national teams (Ukrainian Bodybuilding, Fitness and Fitness Federation Championship under the UBC/VABBA match basketball team, International Rhythmic Gymnastics Tournament “Crystal Muses”, etc.) [11].

To conclude, the “Sport Life” range actively supports a variety of social events.

The conclusions

1. The problem of development of business social responsibility in Ukraine at the present stage is relevant and of primary importance. In Ukraine, state support is needed for the importance of ethical and socially responsible behavior of organizations, increasing their prestige. The state should create incentives for social responsibility, provide legal conditions for social investment, a flexible tax policy in relation to philanthropic organizations, give them priority in obtaining licenses, promote their experience, etc. The state must highlight the issue of social responsibility in Ukraine.

2. Fit Curves and Sport Life ranges create their positive image through a civilized business and adhere to the principles of social responsibility in order to maintain the leading positions. By adopting such a strategy, organizations demonstrate that they have reached the appropriate level in their development. Their social responsibility involves voluntary feedback on the social problems of society and support for various activities. This is the basis of their largest number of fitness clubs in the cities of Ukraine.

Prospects for further research. The focus will be on studying social responsibility in the activities of the most popular fitness clubs in Lviv.

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MODEL OF STUDENTS SPORTS AND RECREATION ACTIVITY ORGANISATION IN THE CONDITIONS OF HIGHER EDUCATIONAL INSTITUTION

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Abstract

The state of the organization of students sports and recreation activity within the educational process in higher educational institution were investigated in this article, as well as its influence on dynamics of physical preparedness of students during studying was analyzed. ***The aim of the study:*** to study the sports and recreational needs of students and to develop a model of students sports and recreation activity organization in higher educational institutions. ***Material and Methods of Research.*** The research was attended by students of the first – fourth year of the Lesya Ukrainka Eastern European National University and Lutsk Technical National University. The total number of students who took part in the study – 192 people who were divided into control group that was engaged in a basic program, as well as experimental group, which was engaged in programs for selected sports. Express assessment of the students physical health level during an organizational and pedagogical experiment, was conducted according to the method of Professor G. L. Apanasenko. The obtained results are analyzed by commonly used methods of variation statistics. In the framework of organizational-pedagogical experiment, a model of organizational structure was created – an educational sports and recreation center. This center conducted classes with students on selected sports at extra-curricular time, connected the teaching and extra-curricular forms of occupations, conducted the promotion of sports and other activities. The center was aimed to increase the overall volume of motor activity of students. ***The results of the study*** of students physical preparedness indicators of both universities allowed to reveal the following: the initial level of physical preparedness of students in the first year is insufficient; the state of physical fitness of students in the course of study deteriorates, therefore it is important to provide organizational changes in the system of sports and recreation activities of students in higher education institutions. Organizational-pedagogical experiment results confirmed the expediency of creation of Educational Sports and Recreation Centers at Lesya Ukrainka East Ukrainian National University and Lutsk Technical National University. Attracting students to the classes of selected sports in extra-curricular time and the ability to continue them in the process of compulsory physical education classes in groups with a sports orientation played the role of a unifying link between the educational and extra-curricular forms of training as well as increased the volume of motor activity of students.

Key words: students, higher educational institution, educational process, model, sports and recreation activities, sports and recreation needs, physical training, motivation, motor activity.

Ніна Деделюк, Надія Ковальчук, Людмила Ващук, Олена Томащук, Володимир Санюк, Сергій Савчук. Модель організації спортивно-оздоровчої діяльності студентів вищих навчальних закладів. У статті на основі аналізу науково-методичної літератури досліджено стан організації спортивно-оздоровчої діяльності студентів вищих навчальних закладів в освітньому процесі та її вплив на динаміку фізичної підготовленості студентів упродовж навчання. ***Мета дослідження*** – вивчити спортивно-оздоровчі потреби студентів і розробити модель організації спортивно-оздоровчої діяльності студентів вищих навчальних закладів. ***Матеріал і методи дослідження.*** У досліджені брали участь студенти першого–четвертого курсів Східноєвропейського національного університету іменні Лесі Українки, Луцького технічного національного університету. Загальна кількість студентів, які взяли участь у дослідженні, – 192 особи. Вони складали

контрольну группу й займалися за базовою програмою, а також експериментальну, у якій займалися за програмами з обраних видів спорту. Експрес-оцінку рівня фізичного здоров'я студентів під час організаційно-педагогічного експерименту проводили за методикою професора Г. Л. Апанасенка. Отримані результати проаналізовано за допомогою загальноприйнятих методів варіаційної статистики. У межах організаційно-педагогічного експерименту утворено модель організаційної структури – навчальний спортивно-оздоровчий центр. Він проводив зі студентами заняття з обраних видів спорту в позанавчальний час, здійснював зв'язок між навчальними та позанавчальними формами занять, проводив пропаганду занять видами спорту й інші види діяльності, які мали за мету підвищити загальний обсяг рухової активності студентів. ***Результати дослідження*** показників фізичної підготовленості студентів обох ВНЗ дали підставу виявити таке: вихідний рівень фізичної підготовленості студентів на першому курсі недостатній; стан фізичної підготовленості студентів протягом навчання погіршується, що зумовлює необхідність організаційних змін у системі спортивно-оздоровчої діяльності студентів в умовах вищого навчального закладу. Результати організаційно-педагогічного експерименту підтвердили доцільність утворення в Східноєвропейському національному університеті імені Лесі Українки та Луцькому технічному національному університеті навчального спортивно-оздоровчих центрів. Залучення студентів до занять обраними видами спорту в позанавчальний час і можливість їх продовжувати в процесі обов'язкових занять із фізичного виховання в групах зі спортивною спрямованістю відіграли роль об'єднуючої ланки між навчальними та позанавчальними формами занять і підвищили обсяги рухової активності студентів.

Ключові слова: студенти, вищий навчальний заклад, освітній процес, модель, спортивно-оздоровча діяльність, спортивно-оздоровчі потреби, фізична підготовка, мотивація, рухова активність.

Нина Деделюк, Надежда Ковальчук, Людмила Ващук, Елена Томащук, Владимир Санюк, Сергей Савчук. Модель организации спортивно-оздоровительный деятельности студентов высших учебных заведений. В статье на основе анализа научно-методической литературы исследуется состояние организации спортивно-оздоровительной деятельности студентов высших учебных заведений в образовательном процессе и ее влияние на динамику физической подготовленности студентов в течение обучения. ***Цель исследования*** – изучить спортивно-оздоровительные потребности студентов и разработать модель организации спортивно-оздоровительной деятельности студентов высших учебных заведений. ***Материал и методы исследования.*** В исследовании принимали участие студенты первого–четвертого курсов Восточноевропейского национального университета имени Леси Украинки, Луцкого национального технического университета. Общее количество студентов, принявших участие в исследовании, – 192 человека, которые составляли контрольную группу и занимались по базовой программе, и экспериментальную, в которой занимались по программам из выбранных видов спорта. Экспресс-оценка уровня физического здоровья студентов, во время организационно-педагогического эксперимента проводилась по методике профессора Г. Л. Апанасенко. Полученные результаты проанализированы с помощью общепринятых методов вариационной статистики. В рамках организационно-педагогического эксперимента образована модель организационной структуры – учебный спортивно-оздоровительный центр. Данный центр проводил занятия со студентами по выбранным видам спорта во внеурочное время, осуществлял связь между учебной и внеучебной формами занятий, проводил пропаганду занятий видами спорта и другие виды деятельности, которые имели целью повысить общий объем двигательной активности студентов. ***Результаты исследования*** показателей физической подготовленности студентов обеих вузов позволили выявить следующее: исходный уровень физической подготовленности студентов на первом курсе недостаточной; состояние физической подготовленности студентов в течение обучения ухудшается, что вызывает необходимость организационных изменений в системе спортивно-оздоровительной деятельности студентов в условиях высшего учебного заведения. Результаты организационно-педагогического эксперимента подтвердили целесообразность образования в Восточно национальном университете имени Леси Украинский и Луцком техническом национальном университете учебного спортивно-оздоровительных центров. Привлечение студентов к занятиям избранными видами спорта во внеучебное время и возможность их продолжать в процессе обязательных занятий по физическому воспитанию в группах со спортивной направленностью сыграли роль объединяющей звена между учебной и внеучебной формами занятий и повысили объемы двигательной активности студентов.

Ключевые слова: студенты, высшее учебное заведение, образовательный процесс, модель, спортивно-оздоровительная деятельность, спортивно-оздоровительные потребности, физическая подготовка, мотивация, двигательная активность.

Introduction. Within the target complex program "Physical education is the health of the nation" [2], in the direction of "Physical education and physical culture activity in teaching and educational" importance is a set of issues, targeted at increasing the volume of motor activity, improving the quality of educational process, forming the children and youth needs for health promotion by means of physical culture and sports. Physical education has to form intellectual and physical qualities of student personality, improve their physical and mental training on the principles of an individual approach and priority of health

improvement [1]. Physical education program approved by the Ministry of Education and Science of Ukraine to achieve the goal and problem of solving the issues of physical education of students has to ensure two interconnected substantial didactic components: compulsory and basic which forms the basis of physical culture of the personality of appropriate level of education (bachelor and master) and eclectic, based on the former component and complementing with the due regard to professional physical training, individual motives, interests and needs, state of health.

However, there is a tendency of deteriorating health conditions of students studying in higher educational institutions. Every year, practice indicates that, the number of the students who are engaged in special medical groups increases. Almost 90% of young people have deviations in health condition, and over 50% have an unsatisfactory physical fitness (O.D. Dubohai, V.I. Zavatskyi, Y.O. Korop, I.V. Potashniuk, G.Y. Ivanova, A.I. Drachuk).

Analysis of special literature (A.I. Drachuk, V.P. Krasnov, and others) testifies to the fact that, the existing organization of physical education in higher educational institutions is not sufficiently effective for assessing the level of physical fitness, health and the interest of the vast majority of students to physical exercises, which reflects the urgent need to develop new evidence-based ways of improvement of the organization of physical education for higher educational institutions.

The goal of the reseach: to study the sports and recreational needs of students and to develop a model of students sports and recreation activity organization in higher educational institutios.

Material and methods of research: The research was carried put among the students of the first – fourth year of the Lesya Ukrainka Eastern European National University and Lutsk Technical National University, referred for health reasons to the main medical group. The total number of students was 192 persons, among them 98 – girls and 94 – boys.

Sociological survey of students is among the students of the second, third and fourth years of study. The total number of questionnaires distributed among students was 310 copies. As it turned out that 277 of them were suitable for processing, which were filled by 126 boys and 131 girls.

A control group of students was set up. It was engaged in the basic program of general physical education and an experimental one that was engaged in sports programs. The control group was divided into two subgroups: one involved girls, the other involved boys. The experimental group was split into four subgroups. The first included volleyball players, the second - boys were engaged in athletic gymnastics, and the third – girls (volleyball players). The fourth group was made up by girls who were engaged in aerobics. Totally 192 persons have been involved in an experiment. Subgroups have been formed according to the same indicators of physical fitness assessment.

To implement the goals and objectives of the research, we used the following methods were used:

Analysis of methodological, legal, regulatory and policy framework, studying of works devoted to health issues of students, their motivation to systematic physical exercises, and the organizations of physical education.

Pedagogical testing included a complex of techniques for determining physical fitness of students, provided by the State program of physical education of students; the evaluation based on the results of seven control varieties of exercises which indicates the state of development of the students physical qualities:

The organizational-pedagogical experiment included two aspects: organizational – within which a new organizational structure has been created – Educational Sports and Health center. This center conducted classes with students on selected sports during extracurricular time, carried out a connection between educational and extra-curricular forms of activities, conducted advocacy of sports occupations for other activities, which aimed at increasing the total volume of motor activity of students.

Biomedical methods. Rapid assessment of the level of physical health of students, during an organizational and pedagogical experiment, was carried out by a technique offered by professor G.L. Apanasenko.

Simulation method. During the research, an organizational model of sports and recreation activities of students was developed, which provided construction of structure and the definition of the content of each structural subdivision.

Methods of mathematical statistics. The received results are analyzed by means of the standard methods of variation statistics with calculation of average sizes of separate indicators and a standard deviation. For statistical verification of hypotheses about validity of differences t – Student's criterion for related and unrelated samples was used; while checking the credibility the 5-% level of significance has been assumed as a basis.

Research results. Analyzing the dynamics of the indicators of the level of physical training during the studies, it can be noted that the drop of the number of students with high level of physical training more widespread among boys is in the second year of studies and among girls in the third. That is when the number of students with a high level of physical training is almost twice less.

During the first three years of studies there is a gradual decrease in the number of students with a higher average of level of physical training and in the fourth year there was a decrease in the indicated number it was almost twice as low.

Similar results were found among boys of the third year of study.

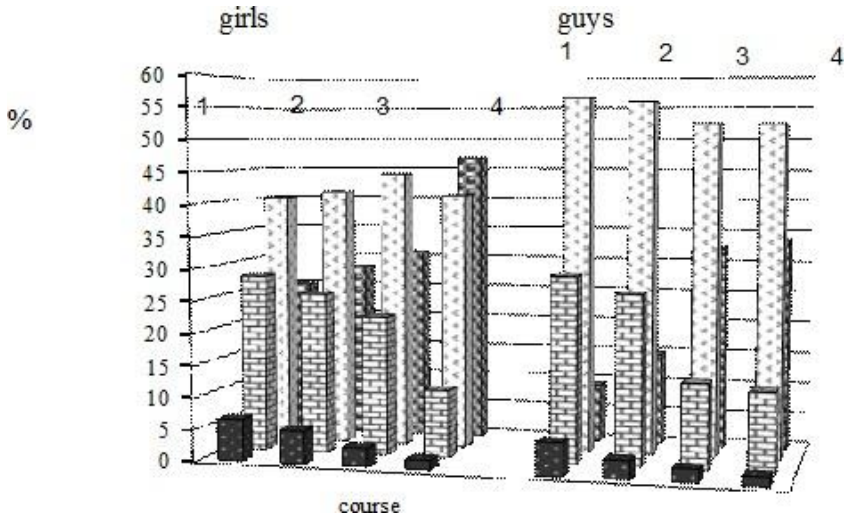

Fig. 1. *Generalized distribution of students by the level of physical training the preparedness of students at differen years of studies ($\overline{X}$, %)*

During four years of studies, no significant changes were observed in the quantitative characteristics of student groups with average level of physical training. The number of young men with the given level of physical education to the fourth year gradually decreased by 4.1%. By the third year, we observe a gradual increase in the group of girls, their average level of physical training was detected by 3.8%. At the same time, in the fourth year the increasing trend has stopped. The number of girls with the given level of physical education decreased, returning to the indicators of the first year of study (Table 1).

The number of girls with a lower than average level of physical education in the first year, almost tripled, it exceeds the number of boys with a similar level of physical education. There is a gradual increase in the number of students of both genders with the given level of physical training during the four years of study. At the same time, the most significant replenishment of this group falls on the second and third courses. In the second year of study their number has almost doubled, and in the third year of study- tripled.

The results of the study of the dynamics of the level of physical education of students indicate its deterioration throughout the course of four years of study in a higher educational institution.

Consequently, the observation experiment conducted to study the level of physical education of students of Lesya Ukrainka Eastern European National University demonstrates the low level of development of physical qualities among boys and girls in the first year of study and its further deterioration during four years of study at a higher educational institution. In our opinion, the insufficient level of physical education and the lack of a tendency to increase it during the students' life are due to a low quality of physical education in the secondary and higher schools, the intensification of harmful habits in student years, the lack of a stable motivation for systematic training. It means there is the urgent need to change the traditional system of conducting lessons of physical education in higher education institutions.

The comparison of the answers to the questionnaire contained suggestions as to measures that, according to respondents, would contribute to improving the content of physical education. The respondents of both genders, first of all, offered to replace the traditional content of the classes. The second most important offer of the respondents is the need to introduce elective classes. The following young people's

suggestions are: replacement of academic teaching the with the electives and expanding the theoretical teaching proportion. Female respondents also suggest improving the conditions for conducting classes and increasing their number. The smallest number of respondents considers it necessary to conduct them in a more interesting way.

The generalization of respondents' answers concerning the efficient content of physical education at higher education institutions revealed that almost half of the respondents of both genders considered it appropriate to practice their favorite sport. About 20% of boys and girls want to do general physical training and various sports respectively. A small number of boys consider it efficient to be involved in professionally-applied physical training and various sports. A similar situation is observed by assessing the results of girls' poll at different years of study (Table 1).

Table 1

Respondents' suggestions on the efficient content of physical education at higher education institutions (%)

Year of studies	Gender	Answer variants					
		Different kinds of sports	One kind of sport	GPT	PAPT	Hard to reply	Other
Second	boys	14,7	37,3	18,7	14,7	10,7	3,9
	girls	15,2	40,0	18,9	8,8	11,4	5,7
Third	boys	12,8	41,0	15,4	12,9	11,5	6,4
	girls	18,2	45,1	15,8	4,9	12,2	3,8
Fourth	boys	14,4	42,1	20,0	15,7	6,0	1,8
	girls	21,2	46,3	13,2	8,7	8,0	2,6
General amount of answers	boys	14,0	40,1	18,0	14,4	9,4	4,1
	girls	18,2	43,8	16,0	7,5	10,5	4,0

The integrated approach to the organization of the process of physical education is based on the proposed model to improve the attendance rates (by 20.3 per cent), to reduce the missed classes due to illness (by 70.7 per cent), increasing the level of physical preparedness (by 21.5 per cent). The number of students with high level of physical education has increased and the number of students with lower than average level of physical training has decreased by 14.9%) and the level of physical health (the number of students with higher level of physical health has increased (by 18 per cent) as compared to the average level and the number of students with low level of physical health decreased by 7 per cent.

During the organizational-pedagogical experiment the attitude of the students of the experimental and control groups to the new system of organization of the educational process on physical education and the level of satisfaction of their needs was analyzed. Besides we also analyzed the attitude to the creation of a new model of the organizational structure - the educational sports and health center, which consisted in the introduction of sports popular (among students) (volleyball, athletic gymnastics, aerobics) to compulsory physical education classes at the Lesya Ukrainka Eastern European National University and Lutsk Technical National University. This project allowed to optimize the motor activity of students by making changes in the organization of training sessions.

The research objectives did not require the distribution of student respondents among several experimental groups. We were interested in the results of the survey of the students which were engaged in physical education in the new system of organization of the educational process in comparison with the answers of students who continued to be engaged in traditional content .Therefore, the results of the survey are analyzed and compared in two groups of respondents: experimental and control.

At compulsory physical education classes, 76.6 per cent of students enjoy working in the framework of the new system of organization of classes. Not completely satisfied with such classes are 19.5 per cent of the respondents of the experimental group. 3.9% of the students stated that they were skeptical about these innovations in physical educational process (Fig. 2).

Other results were revealed in the group of students who were engaged in the base program. People who like the traditional physical education lessons were only the fifth portion of the students who prefer

traditionally conducted classes. Almost half of the respondents partly like general physical education classes and more than a third of respondents dislike them.

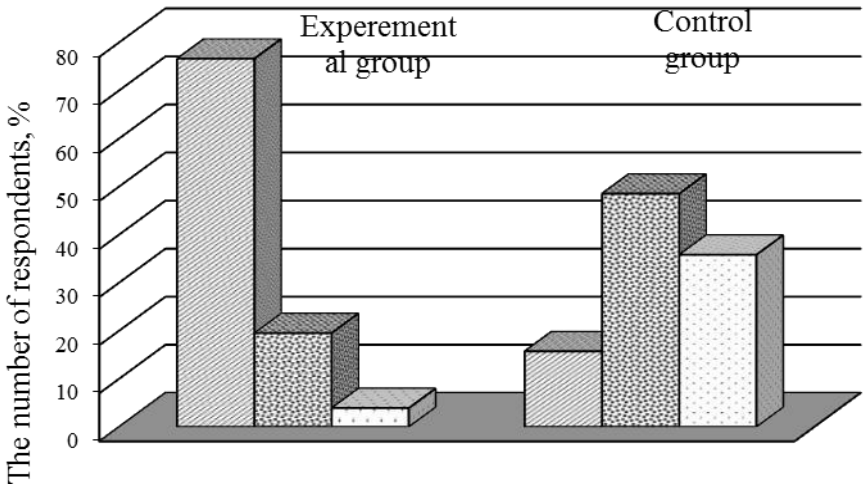

Fig2. *Level of student's satisfaction in control and experimental groups with the content of physical education classes*

The students' responses to the evaluation of the content of physical education in experimental and control groups are similar. In the experimental group, half of the respondents evaluate the new content of the classes as "excellent" and another third of respondents believe that the content of the studies is "good". The results of the organizational and pedagogical experiment confirmed the expediency of formation of educational sporting and health centers with at the Lesya Ukrainka Eastern European National University and Lutsk Technical National University. Involving students in sports in sport sections their extracurricular time and an opportunity to continue them in the process of compulsory physical education classes in groups with a sports orientation played the role of the unifying link between the educational and extra-curricular varieties of classes and increased the volume of students motor activity.

Discussion: The results of our studies prove the need to create new forms of educational process of physical education, constructing a model for organizing the provision of sports and recreational needs of students. Our own preliminary research [3; 4; 5; 6] confirms and supplements the scientific achievements of Ukrainian scientists that direct their activities to improve the quality of physical education of students, broadens the range of relevance of the problems raised. .Then Ivanova G. E. [3] discovered the ways of optimization of physical culture and health work in higher educational establishments. Tsos A.V. and a group of scholars [9] studied the level of physical activity of students of higher educational institutions and proposed a differentiated approach to the process of physical education of students. Kotov E. [7] evolved a program of independent exercises for students of higher educational institutions, taking into account the established typological features. Romanenko V. V. [8] developed model characteristics of motor activity of students depending on the types of physical activity. He determined the most popular types of aerobics among the students and developed approaches to their methodological support.

Conclusions and further research prospects.

Analysis of scientific and methodological literature demonstrates that the organization of sports and recreation activities in higher educational institutions require changes in the organization of physical education. In the educational process it is expedient to abandon the compulsory contents of physical education and address the student's personality, his interests and needs in the field of physical and spiritual education The organizational structure of sports and recreation activity at the Lesya Ukrainka Eastern European National University was improved. The results of the organizational and pedagogical experiment confirmed the feasibility of the formation of the educational sport and recreation center with at the Lesya Ukrainka Eastern European National University and the Lutsk Technical National University. Involving students in sports in the extracurricular time and the in the sport sectionsprocess of compulsory physical education classes in groups with a sports orientation played the role of the unifying link between the

educational and extra-curricular forms of occupations and increased the volume of motor activity of students.

The practical implementation of the proposed model of the improvement of the organizational structure of sports and recreational activities in higher education institutions requires further accumulation of scientific data on the formation of positive motivation for students to be involved in sports; in introducing popularity among the youth sports popular among the youth into compulsory physical educational classes.

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CONCEPTUAL BASES FORMATION OF STUDENTS' MOTOR SKILLS IN THE PROCESS OF EXTRA-CURRICULAR PHYSICAL CLASSES

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Abstract

Actuality. The formation of skills to perform motor actions, their transformation into skills of a higher order is a long and complicated process. The study of its regulataries is an important issue of the students` physical education. ***Research Aim*** is to develop the conceptual foundations for the formation of students` motor skills in the process of extra-curricular physical classes. ***Methods and Organization of Research****:* analysis and synthesis of literary sources, method of analysis and synthesis, comparative analysis, generalization method. ***Research Results.*** Teaching of technical device should be carried out in accordance with pedagogical tasks and stages of training. At the first stage, on the basis of creating the visual and logical mode of motion, there is an initial study of the technique of motor action, which corresponds to the stage of forming the ability to reproduce the technique of action in a general form. The second stage is characterized by an in-depth and detailed study. Accordingly, there was a refinement of motor abilities, which turned into a skill. At the third stage, consolidation and improvement of motor activity are ensured, resulting in is the formation of motor skills and skills of higher order. ***Conclusions.*** The formation of students` motor skills in the process of extra-curricular physical classes are carried out by means of: increasing of students` physical training; wide use of imitational, special and competitive physical exercises; optimization of the structure of movements when performing technical techniques; increasing the accuracy and speed of the result when performing technical techniques; an increase of the arsenal of variants of technical methods, the formation of the ability to move freely from one movement to another; stable and effective performance of the techniques during the influence of factors hindering the exercise or during the active opposition of the opponent; performance of techniques with high efficiency in case of fatigue or high mental tension; the formation of individual technique in accordance with the morphofunctional and mental characteristics of students; use of technical techniques in sporting activity in accordance with game and tactical tasks.

Key words: students, formation of motor skills, non-audition classes, physical education, technique of physical exercises.

Олександр Сабіров, Василь Пантік. Концептуальні основи формування рухових умінь і навичок студентів у процесі позааудиторних занять фізичними вправами. ***Актуальність.*** Формування вмінь виконувати рухові дії, їх трансформація в навички та в вміння вищого порядку – це тривалий і складний процес. Дослідження його закономірностей є важливою проблемою фізичного виховання студентів. ***Мета дослідження*** – розробити концептуальні основи формування рухових умінь і навичок студентів у процесі позааудиторних занять фізичними вправами. ***Матеріал і методи дослідження*** – аналіз та узагальнення літературних джерел, аналіз та синтез, порівняльний аналіз, узагальнення. ***Результати роботи.*** Навчання технічного прийому потрібно здійснювати відповідно до педагогічних завдань й етапів навчання. На першому етапі на основі створення зорового та логічного образу руху відбувається початкове вивчення техніки рухової дії, якому відповідає стадія формування вміння відтворювати техніку дії в загальній формі. Для другого етапу характерне поглиблене, деталізоване вивчення. Відповідно відбувалося уточнення рухового вміння, яке переходило в навичку. На третьому етапі забезпечується закріплення і вдосконалення рухової дії, внаслідок чого формувалися рухові навички й уміння вищого порядку. ***Висновки.*** Формування рухових умінь і навичок студентів у процесі позааудиторних занять фізичними вправами здійснюють підвищенням фізичної підготовленості студентів; широким застосуванням імітаційних, підвідних, спеціальних і змагальних фізичних вправ; оптимізацією структури рухів під час виконання технічних прийомів; підвищення точності й швидкості результату під час виконання технічних прийомів; збільшення арсеналу варіантів технічних прийомів і способів, формування вміння вільно переходити від одних рухів до інших; стабільного й ефективного виконання прийомів під часу впливу чинників, які заважають виконувати вправу або під час активної протидії суперника; виконання технічних прийомів із високою ефективністю під час утоми або великого психічного напруження; формування індивідуальної техніки відповідно до морфофункціональних та психічних особли-

востей студентів; використання технічних прийомів у спортивній діяльності відповідно до ігрових і тактичних завдань.

Ключові слова: студенти, формування рухових умінь і навичок, позааудиторні заняття, фізичне виховання, техніка фізичних вправ.

Александр Сабиров, Василий Пантик. Концептуальные основы формирования двигательных умений и навыков студентов в процессе внеаудиторных занятий физическими упражнениями. ***Актуальность.*** Формирование умений выполнять двигательные действия, их трансформация в навыки и в умение высшего порядка – это длительный и сложный процесс. Исследование его закономерностей является важной проблемой физического воспитания студентов. ***Цель исследования*** – разработать концептуальные основы формирования двигательных умений и навыков студентов в процессе внеаудиторных занятий физическими упражнениями. ***Материал и методы исследования*** – анализ и обобщение литературных источников, анализ и синтез, сравнительный анализ, обобщение. ***Результаты работы.*** Обучение технического приема необходимо осуществлять в соответствии с педагогическими задачами и этапами обучения. На первом этапе на основе создания зрительного и логического образа движения происходит первоначальное изучение техники двигательного действия, которому соответствует стадия формирования умения воспроизводить технику действия в общей форме. Для второгоэтапа характерно углубленное, детализированное изучение. Соответственно происходило уточнение двигательного умения, которое переходило в навык. На третьем этапе обеспечивается закрепление и совершенствование двигательного действия, в результате чего формируются двигательные навыки и умения высшего порядка. ***Выводы.*** Формирование двигательных умений и навыков студентов в процессе внеаудиторных занятий физическими упражнениями осуществляют путем повышения физической подготовленности студентов; широкого применения имитационных, подводных, специальных и соревновательных физических упражнений; оптимизации структуры движений при выполнении технических приемов; повышения точности и скорости результата при выполнении технических приемов; увеличения арсенала вариантов технических приемов и способов, формирования умения свободно переходить от одних движений к другим; стабильного и эффективного выполнения приемов во времени воздействия факторов, которые мешают выполнять упражнение или во время активного противодействия соперника; выполнения технических приемов с высокой эффективностью при усталости или большого психического напряжения; формирование индивидуальной техники в соответствии с морфофункциональными и психическими особенностями студентов; использование технических приемов в спортивной деятельности в соответствии с игровыми и тактическими задачами.

Ключевые слова: студенты, формирование двигательных умений и навыков, внеаудиторные занятия, физическое воспитание, техника физических упражнений.

Introduction. The results of the analysis of scientific works testify, that in modern conditions an active research to improve physical education in higher educational institutions is being conducted [2; 8; 10; 13; 15; 16]. In particular, scientists propose to form interest and motivation for exercises, enrich the means and forms of conducting classes, increase the program-normative provision, improve the motor activity of students, develop the programming and algorithm of health-improving training, to form the healthy lifestyle, make the evaluation system better [1; 3; 4; 7; 11; 12; 14].

Physical education in higher educational establishments is carried out in various forms, which allows for the implementation of educational, recreational and educational tasks of education. Extra-curricular forms of organization of sports and physical culture and health activities of students are of great importance [5; 6; 9; 17]. In the system of extra-curricular classes, the leading role is played by sports sections, whose aim is to train students, for participation in competitions.

The purpose of the research is to develop the conceptual foundations for the formation of motor skills and abilities of students in the process of extra-curricular exercices.

Material and methods of research: analysis and generalization of literary sources, analysis and synthesis, comparative analysis, generalization.

Research results. The results of the training process of students-athletes are closely related to designing and planning, which most fully ensure the completion of scheduled tasks and conditions for their optimal implementation. Rational construction of sports training system (namely of planning and design) – is a problem, that can be treated eternally actual. There were attempts solved it from different approaches – system, system-structural, complex, cybernetic, program-target and model-target. The system approach to planning of the training of students-athletes allows you to see the management system as a complex of interconnected elements, united by a general goal.

The basic conditions for the successful training of students in the rugby game are the physical fitness of students, special knowledge and motivation for physical activity, moving experience, proper material and technical support of classes, high professional skills of the teacher.

The systematic effect of physical exercises on a human body can only be successful if the method of their application is agreed with the basic rules and regularities of the physical education process. The knowledge and implementation of these laws allow students to have effective motor skills, and develop needed physical quality. Successful realization of sports tasks is possible due to the principles, which are divided into two groups:

1. Didactic (basic ideas that penetrate all levels and components of education, certify their system integrity and determine the contents, organizational forms and methods of educational work in accordance with the general tasks of education and the regularities of the learning process) – consciousness, activity, accessibility, systematic, consistency, visibility, strength and progression, differentiation and individualization.

2. Specific (basic rules reflecting the regularities of constructing of physical exercises) – focus on higher achievements, in-depth specialization, stability of the training process, gradual increase of loads and tendencies towards maximum loads, wave-like and variable loads, cyclic training process and age-related load adequacy.

Student training involves the variety of physical exercises that directly or indirectly influence the improvement of sport skill. Physical exercises are regarded as a set of motor actions aimed at solving the specific motor task. In training exercises, motor actions can be combined with the need to achieve high levels of strength display, speed or coordination abilities, as well as shifts in the activity of the cardiovascular or respiratory systems, the mobilization of certain energy supply mechanisms. Conditional physical exercises are divided into four groups: general preparatory, specific preparatory, auxiliary and competitive.

General physical exercises are movements of individual parts of the body or their combinations performed at different speeds and amplitudes and muscle tension. General training includes physical exercises, providing comprehensive functional development of the student's body and aimed at preparing it for future work, mastering movements, improvement of physical qualities, and the sanitation of organs and systems of the body. Advantages of general preparation exercises are that they are accurately dosed and can be used in various variants and combinations. This allows you to choose the nature of the effects on individual muscle groups and on certain body systems. General exercises may include elements of gymnastics, acrobatics, sports games, and athletics.

Specific preparatory exercises cover actions that have elements of competitive activity, and those that are close to them in form and structure, as well as the nature of the display of the qualities and activity of the functional systems of the body. Compulsory sign of such exercises is a significant similarity with the competitive in form and contents.

Auxiliary exercises are aimed at creating a special foundation for further improvement of sports activities. They also include tools that help to increase maximum strength, strength endurance and flexibility, as well as tools borrowed from other activities and aimed at improving the aerobic capacity of students.

Competitive exercises provide the implementation of complex of motor activities, which is the subject of sports specialization, in accordance with the current rules of the competition.

At the same time, such division is somewhat conditional, the boundaries between the allocated groups of exercises are not certain, means in form and structure, and by the peculiarities of influence on the organism, can smoothly move from one group to another. However, such classification of physical exercises can purposefully apply physical activity in the process of sports training of.

Training tools can also be distinguished according to directions of action: a) related to the improvement of various aspects of training – technical, tactical, physical; b) aimed at the development of various motor skills, increasing the functional capacity of individual organs and systems of the body.

Methods – are ways of organizing the work of the teacher and the student, which is acquired knowledge, abilities and skills needed to develop quality, and to form worldview. Methods are divided into verbal, visual and practical.

Verbal methods allow in the shortest possible time to transfer more information, to pose the students with the problems and indicate ways for their solution. Verbal methods include narration, explanation, lectures, team discussions, analysis (evaluation) and discussion.

Visual methods of learning are defined as the techniques with the help of which the process of learning is substantially dependent on the usage of visual AIDS and technical means. Visual methods include the methodologically correct presentation (display) of individual exercises and their elements, educational films, videos, computer programs for demonstration of tactical schemes, educational computer games. Visual methods are used in combination with the verbal and practical learning methods.

Practical methods of teaching are based on the practical activities of students and are divided into two main groups: 1) mainly aimed at mastering the techniques and tactics of the game and focused on the formation of motor skills that are characteristic of the chosen type of sport; 2) mainly aimed at the development of motor qualities.

Each of the methods is used according to the requirements determined by the peculiarities of sports training. It is necessary to consider the relevant tasks, general pedagogical and specific principles of sports training, the age characteristics of athletes and their qualifying standards.

The system of sports training is based on years of training as a set of relatively independent and at the same time interconnected stages, as well as cyclic loads (macro cycles, mesocycles, microcycles, separate training sessions). The duration and structure of long-term sports training depend on:

- the structure of competitive activity;
- patterns of formation of various aspects of sportsmanship and the formation of adaptive processes in the functional systems of the body;
- individual and sexual characteristics of the body of athletes, paces of their biological maturation and the growth sportsmanship;
- the age at which the athlete began to do sports, and the time when he started to do special training;
- the content, of training process – means and methods of training, dynamics of physical activity, the construction of the training process, the use of additional factors to intensify the training process.

According to the results of the research, the structure of training process for students of higher educational institutions consisted of three main stages: primary training, basic training and the stage of specialized training. By planning classes in groups of preparation for higher achievements it is necessary to change the correlation of individuals to the training load due to their specialization. In such a way, the value of considering patterns of development, preservation or loss of sports shape increases. The issues of pre-intensive training and the participation of an athlete in individual competition has a special importance. The means of training are wildly used for increasing the functional potential of the body of the athlete with considerable amount of work, as close as possible to the nature of competitive activities. Athletes who are prone to both morphological and functional aspects of speed-force and complex coordination work, such training becomes the basis for the improvement of their sportsmanship.

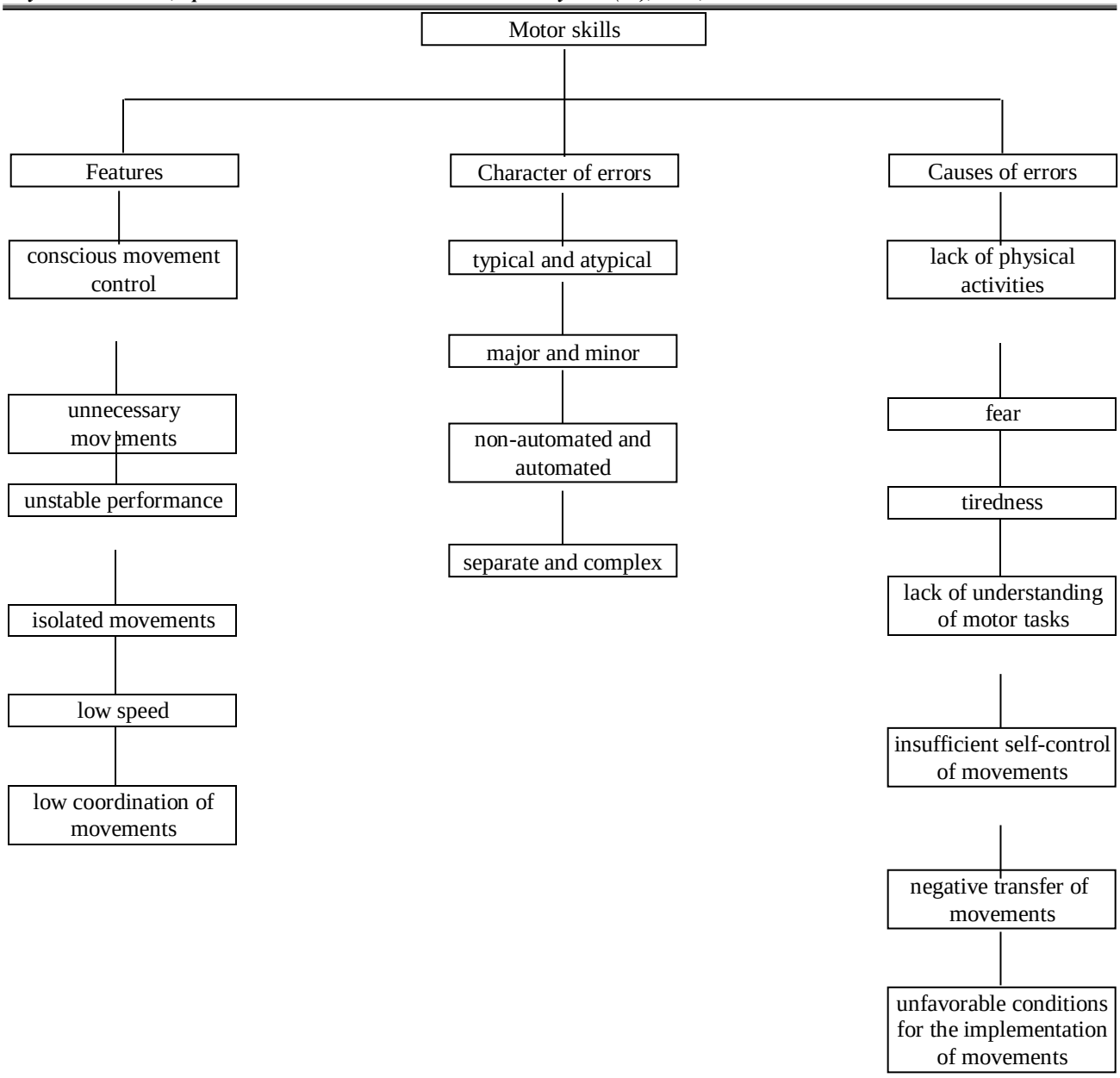
Considerable attention is paid to the improvement of the technique of execution of movements. This task is usually carried out in parallel with the development of physical qualities, and it has two aspects:

- an improvement of qualitative features of motor skills (forms and structures of motion) as a basis for increasing speed possibilities;
- economic development and stable technology of movement as the basis of improvement of special endurance.

The process of learning in the physical education of students has certain features. They are associated with active motor activity, which is carried out not only in accordance with pedagogical but also biological laws. The basis of motor activity teaching of students is the formation of motor skills and abilities.

Motor skills are characterized by a non-automated way of performing motor action. The significant features of motor skills are the conscious control of movements, the presence of unnecessary movements, unstable performance, low speed, isolation movements, lack of coordination of movements. The student must constantly control his movements by increasing the concentration of attention for determining the sequence of elements, direction and amplitude of motion. It causes relative dismemberment of movements and a slow pace of their implementation.

Practice shows that in the learning process, it is not possible to avoid errors in the technique of implementation of complex motor actions. Exercise can be accompanied by deviations of actual technology from a given sample. Error – is an implementation of a deviation from the model of technology, which significantly reduces the effectiveness of the action as a whole. Errors are typical and non-typical, major and minor, non-automated and automated, individual and complex.



Pic. 1. *Technological scheme of motor skills*

To identify the type of students' errors is of fundamental importance in the teaching and methodological providing of physical education because it defines the priorities of the goals of the activity, the priorities of the choice of means and forms of training organization. Mistakes that arise during training are caused by various factors: insufficient physical preparedness, fear, fatigue, insufficient understanding of the motor task, insufficient self-control of movements, negative transfer of movements, unfavorable conditions for the implementation of movements.

The method for correcting the error depends on the reason and consists of an additional explanation, showing the correct implementation of the action, then - attempts to master the correct way. Also important is the use of preparatory and special exercises. In order to improve the efficiency of assimilation of errors of motor actions, the correct valuation of their implementation is of great importance. The main parameters of such a valuation are the number of repetitions and intervals of rest between them.

Along with this, in the theory and method of physical education, the general rules for preventing the occurrence of errors during the training of motor actions are presented:

• to increase interest and motivation to perform physical exercises constantly;

• The number of repetitions of a new action is determined by the ability of students to improve their action at each new attempt;

• repeated occurrence of the same mistakes is a signal to make the break for rest and reflection of their actions;

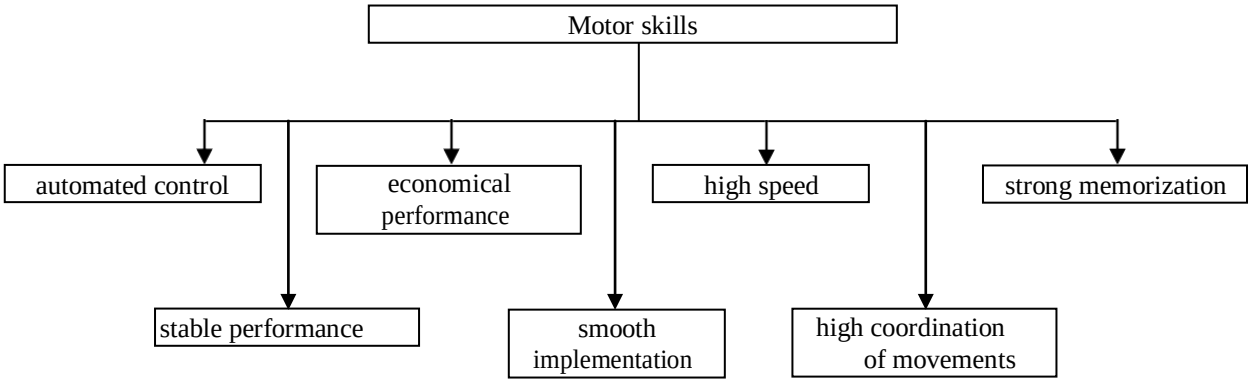
• intervals of rest should provide optimal physical and mental readiness to perform another attempt;

• to continue training motor actions in case of severe tiredness inappropriate and harmful;

• breaks between classes should be as short as possible so as not to lose skills already acquired;

• Avoid continuous observations that emphasize the drawbacks and thus suppress students' faith in their abilities.

The systematic repetition of motor activity leads to the formation of motor skills (such a degree of possession of the technique, by which the control of movements is carried out automated and the movements differ in sufficiently high stability). Motor skills are characterized by the following features: automated control, economical performance, high speed, strong memory, stable and smooth implementation, high coordination of movements (Picture 2).



Pic. 2. *Technological scheme of motor skills*

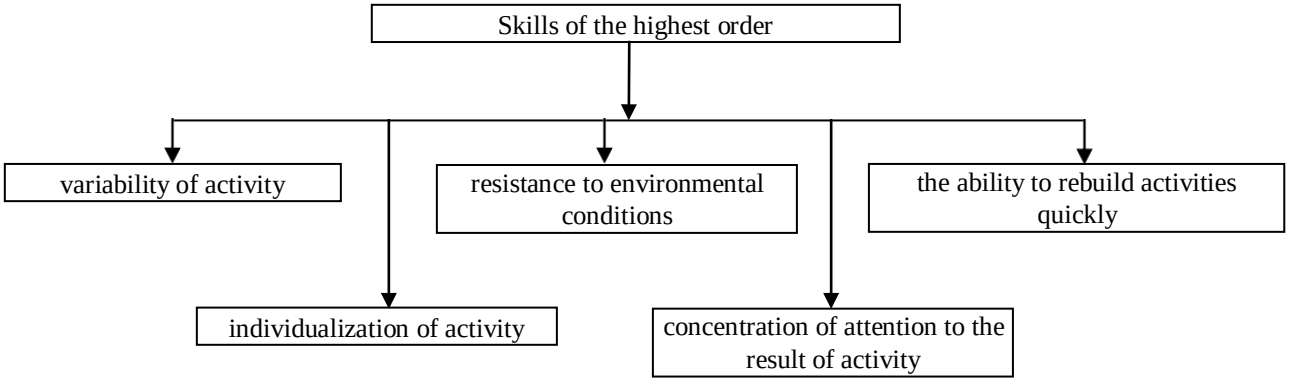
Automation of control involves the release of continuous control over the parts of the movement, which allows you to switch attention to the result of the action and the conditions for its implementation. The motor skills are characterized by a high level of perception of space, time, tempo, speed. During the formation of motor skills, the most optimal form of movement is found, which becomes standard. The standard of motor skills is determined by the constant, regardless of the conditions, the reproduction of an effective form of physical exercise.

In the learning process, it is necessary to take into account the mechanism of transferring motor skills. It arises in those cases where the structures of motor actions are simultaneous both similarity and difference. Such signs determine the nature of the transfer: positive or negative. Positive movement of motor actions is possible in the presence of similarity in most phases of exercise. Negative effect of transfer of skills is observed in those cases where similar preparatory phases and essentially differ basic. Elements of positive transfer of skills are widely used in the process of learning the motor activities of students in the development of the sequence of learning.

Motor skills play an important role in human life as a basis for readiness for diverse activities (sports, labor, and domestic). Human activity can only be successful if it is based on a variety of well-established motor skills. The greater the reserve of skills, the more diverse and effective the human activity is. In sports, it is determined by the speed of mastering the new skills and, in general, the skill of the athlete.

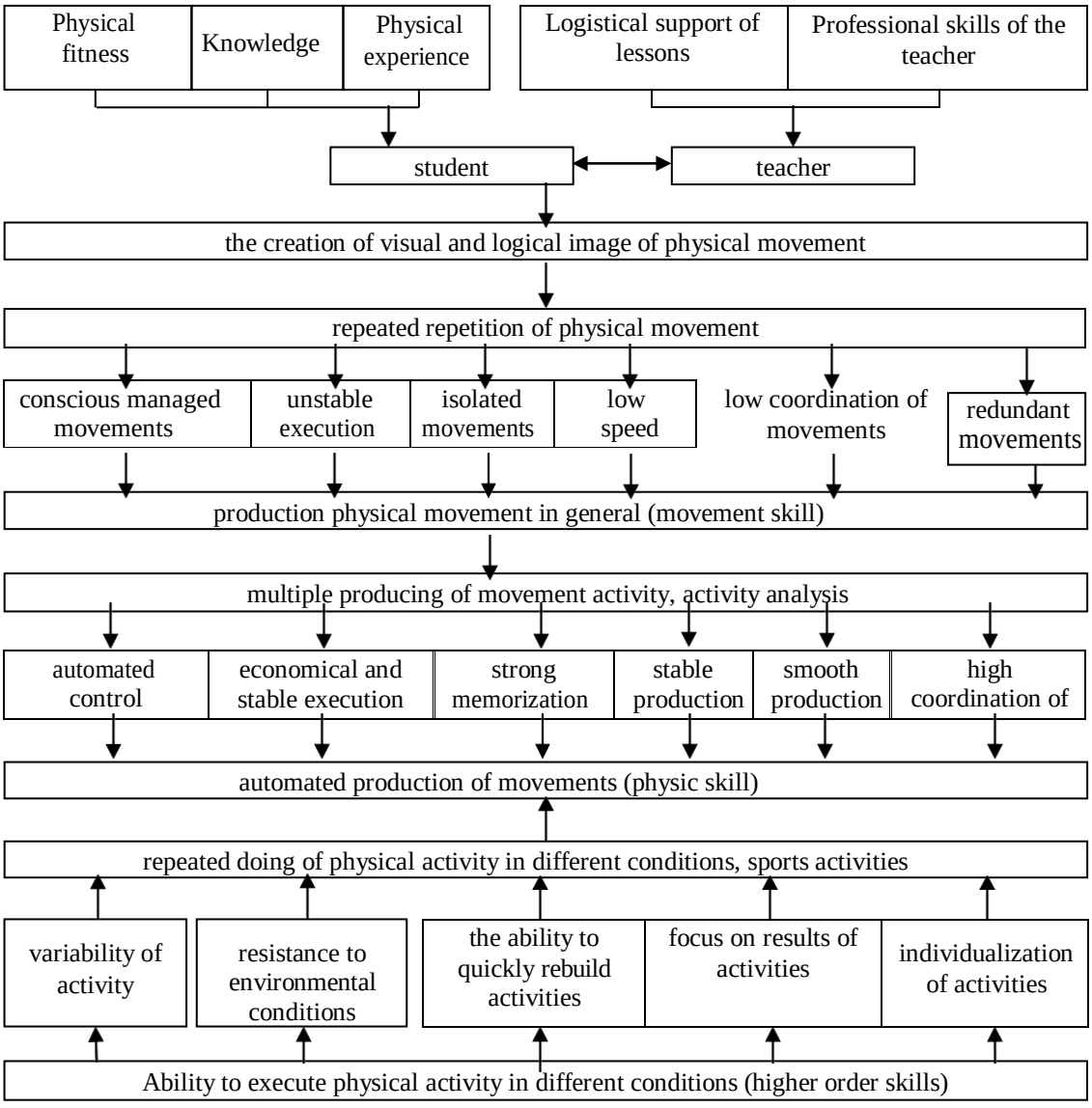
The highest level of mastering motor activity is determined by the skill of higher order. Indicative signs of higher order skills: variability of activity, resistance to environmental conditions, ability to quickly rebuild activities, individualization of activities, concentration of attention on the result of activities (Picture 3).

Physical movements are highly reliable and can be performed under various unfavorable conditions - influence of the environment, negative psycho emotional state of the athlete. A characteristic feature of this level of possession of technology is variability, that is, the ability to apply physical movements in various conditions with a slight change in shape, but without a significant reduction in effectiveness.



Pic. 3. *Technological scheme of higher order skills*

Discussion. The formation of skills to perform physical movements, their transformation into skills, combining skills into higher order skills is a long and difficult process. In the construction of the learning process, each physical movement can be divided into a series of relatively completed stages that correspond to certain stages in the formation of physical skills and abilities (Picture 4).



Pic. 4. *Structure of student's formation of physical skills and abilities*

The process of formation of physical movements, is distinguished by three stages that differ from each other both in pedagogical tasks and in the methods of instruction. At the first stage, on the basis of the creation of the visual and logical image of the movement, an initial study of the technique of physical action occurs. It corresponds to the stage of the formation of the ability to reproduce the technique of action in a common "rough" form. The second stage is characterized by an in-depth and detailed study. As a result, at this stage, there is a refinement of the physical skill, so it partially turns into abilities. On the third stage of, fixing and improvement of physical action the ability of higher order is formed as a result. The athletic result consists of the ability to perform a specific combination of movements to achieve a specific goal, as well as knowledge of when it is necessary to perform. The main tasks of technical training are mastering the technical techniques of individual and collective equipment, improving technology, taking into account the individual characteristics of athletes, improving physical fitness. Training of individual and collective sports equipment is carried out by:

- improving the physical fitness of students;
- wide usage of imitation, underwater, special and competitive physical exercises;
- optimizing the structure of movements in implementing techniques;
- increasing the accuracy and speed of the result at the moment technical methods,;
- increasing the arsenal of variants for techniques and methods, the formation of the ability to freely move from one movement to another;
- the stable and effective implementation of techniques for avoiding the factors that interfere with the exercise or in an active counteraction of an opponent;
- using of high efficiency technical devices against fatigue or high mental stress;
- the formation of individual techniques in accordance with the morphofunctional and psychic peculiarities of students;
- the use of techniques in sports activities in accordance with gaming and tactical tasks.

For solving the problems of formation of technical training students use various physical exercises:

- exercises that are performed in facilitated conditions without active resistance;
- physical actions that are structurally or physically close to a competitive exercise;
- combined exercises that are done in difficult conditions with active resistance;
- the exercises that are done in conditions close to the game and competitions.

The use of a set of physical exercises in accordance with the individual characteristics of students, the stage of athletic training and playing role creates favorable prerequisites for proper sports training.

Conclusions. Formation of skills to perform physical actions, their transformation into skills, the combination of higher order abilities and skills in the is a long and complex process. In the learning process of each physical action, it is possible to single out a series of relatively completed stages, corresponding to certain stages in the formation of physical skills and abilities. The system of sports training is based on many years of preparation as a set of relatively independent and simultaneously interrelated stages as well as cyclic loads.

Training of technical reception was done in accordance with the pedagogical tasks and stages of training. At the first stage, on the basis of the creation of the visual and logical image of the movement occurs, an initial study of the technique of physical action occurs, to which the stage of the formation of the ability to reproduce the technique of action in a general form. The second stage is characterized by an in-depth detailed study. Correspondingly there was a refinement of the physical skill, which turned into ability. At the third stage, the fixation and improvement of the physical action is ensured, resulting in the formation of physical skills and higher-order skills.

At the following extracurricular lessons of physical exercises the formation of the physical skills and abilities of students is carried out by: improving the physical fitness of students; wide usage of imitation, underwater, special and competitive physical exercises; optimizing the structure of movements by using specsal techniques; increasing the accuracy and speed of the result of using technical methods; increasing the arsenal of variants for techniques and methods, the formation of the ability to freely move from one movement to another; the stable and effective implementation of techniques in time of the impact of factors that interfere with the exercise or in an active counteraction of an opponent; using of technical devices with

high efficiency against fatigue or high mental stress; the formation of individual technology in accordance with the morphofunctional and psychic peculiarities of students; the use of techniques in sports activities in accordance with gaming and tactical tasks.

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Physical Education of Different Groups

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ORGANIZATION AND METHODOLOGICAL BASIC CONCEPTS OF PHYSICAL ACTIVITY OF PRE-SCHOOLERS

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Abstract

Nowadays, we observe an inadequate state of children's health, poor physical fitness of pre-schoolers caused by low level of motor activity. The intensive search for ways to improve physical education in pre-school educational institutions has been conducted in order to solve this problem. Pre-schoolers have a biological need for movement, they enjoy the process of motor activity which is to embrace various physical exercises and games. The positive emotions, interest and pleasure, that games cause, gradually become a habit of systematically engaging in physical training. The objective of the research is to provide theoretical justification and experimental verification of the performance of pre-schoolers' motor activity when using Ukrainian folk fun and play. ***Methods.*** the analysis of scientific and methodological cited literature, the testing of pre-schoolers, the pedagogical experiment. ***Results.*** The correct organization of classes on physical education in pre-school educational institutions provides the activation of their motor activity which is necessary for improving the physical and mental fitness of a child during the day. The techniques developed in this research have included Ukrainian folk fun and play introduced at physical education classes and during walks. Games of different intensity and orientation were supposed to alternate in the structure of motor activity of children. Experiment data showed that during the experiment, in the experimental groups of 5-and 6-year-old children the quality of performing the test tasks significantly increased compared with the control ones. ***Conclusions.*** Approbation of the developed technique of motor activity of pre-schoolers with the introduction of Ukrainian folk fun and play in the practice of physical education in pre-school educational institutions has shown great effectiveness, is confirmed by an increase in the level of physical fitness of children in the experimental groups.

Key words: pre-schoolers, pre-school educational institution, motor activity, folk fun and play.

Анатолій Вольчинський, Ярослав Смаль, Олександр Малімон, Андрій Ковальчук, Ольга Рода. Організаційно-методичні основи фізичної активності дітей дошкільного віку. ***Актуальність дослідження*** зумовлена тим, що на етапі сьогодення спостерігається неналежний стан здоров'я дітей, слабку фізичну підготовленість, що зумовлені низьким рівнем рухової активності. Із метою розв'язання цієї проблеми проводиться активний пошук способів удосконалення фізичного виховання в дошкільних навчальних закладах. Діти дошкільного віку мають біологічну потребу в рухах, вони отримують насолоду від процесу рухової активності, який потрібно наповнювати різноманітними фізичними вправами й іграми. Позитивні емоції, зацікавленість і задоволення, які викликають у дітей під час рухливої гри, поступово переходять у звичку систематично займатися фізичною культурою. ***Мета статті*** полягає в теоретичному обґрунтуванні й експериментальній перевірці результативності рухової активності дітей старшого дошкільного віку з використанням українських народних ігор та забав. ***Методи*** – аналіз науково-методичної літератури, тестування дітей старшого дошкільного віку, педагогічний експеримент. ***Результати.*** Правильна організація заняття з фізичного виховання дітей у дошкільному навчальному закладі забезпечує активізацію їхньої рухової активності, необхідну для поліпшення фізичного стану дитини і її психіки протягом дня. Розроблена нами методика включала українські народні ігри та забави на заняттях фізичного виховання й прогулянках. У структурі рухової активності дітей передбачено чергування ігор різної інтенсивності та спрямованості. Дані експерименту засвідчили, що в експериментальних групах дітей 5 - і 6-ти років протягом експерименту значно зросла якість виконання тестових завдань, порівняно з контрольними. ***Висновки.*** Апробація розробленої методики рухової активності дітей старшого дошкільного віку із використанням українських народних ігор і забав у практиці фізичного виховання дошкільних навчальних закладів показала

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її ефективність, що підтверджено підвищенням рівня фізичної підготовленості дітей експериментальної групи за всіма фізичними якостями.

Ключові слова: діти старшого дошкільного віку, дошкільний навчальний заклад, рухова активність, народні ігри, забави.

Анатолий Вольчинський, Ярослав Смаль, Александр Малимон, Андрей Ковальчук, Ольга Рода. Организационно-методические основы физической активности детей дошкольного возраста. ***Актуальность исследования*** обусловлена тем, что на настоящем этапе наблюдается ненадлежащее состояние здоровья детей, слабая физическая подготовленность, обусловленные низким уровнем двигательной активности. С целью решения этой проблемы ведется активный поиск путей совершенствования физического воспитания в дошкольных учебных заведениях. Дети дошкольного возраста имеют биологическую потребность в движениях, они получают удовольствие от процесса двигательной активности, который необходимо наполнять различными физическими упражнениями и играми. Положительные эмоции, интерес и удовольствие, которые вызывают у детей во время подвижной игры, постепенно переходят в привычку систематически заниматься физической культурой. ***Цель статьи*** – теоретическое обоснование и экспериментальная проверка результативности двигательной активности детей старшего дошкольного возраста с использованием украинских народных игр и забав. ***Методы*** – анализ научно-методической литературы, тестирование детей старшего дошкольного возраста, педагогический эксперимент. ***Результаты.*** Правильная организация занятия по физическому воспитанию детей в дошкольном учебном заведении обеспечивает активизацию их двигательной активности, необходимую для улучшения физического состояния ребенка и его психики в течение дня. Разработанная нами методика включала украинские народные игры и забавы на занятиях физического воспитания и прогулках. В структуре двигательной активности детей предполагалось чередование игр различной интенсивности и направленности. Данные эксперимента показали, что в экспериментальных группах детей 5- и 6-ти лет в течение эксперимента значительно возросло качество выполнения тестовых заданий, по сравнению с контрольными. ***Выводы.*** Апробация разработанной методики двигательной активности детей старшего дошкольного возраста с использованием украинских народных игр и забав в практике физического воспитания дошкольных учебных заведений показала ее эффективность, что подтверждается повышением уровня физической подготовленности детей экспериментальной группы по всем физическим качествам.

Ключевые слова: дети старшего дошкольного возраста, дошкольное учебное заведение, двигательная активность, народные игры, забавы.

Introduction. Physical activity at a preschool age acts is a necessary condition of the formation of the basic structures and functions of the human body. With a decrease in motor activity, the muscular apparatus and respiratory system work without sufficient load, do not undergo systematic training, which, even with insignificant physical effort, may cause a substantial disorder of their functions. Physical activity of preschool children is determined not only by the biological need but also by the pedagogical influence on the children. The need of a child in motor activity can be suppressed or on the contrary, stimulated by motor activity, in particular in a preschool institution [4].

Numerous research [2; 5; 6] proves that properly organized physical education of children contributes to the formation of both bone and muscular systems and, as a result, forms the morphology and motor functions of the child, which is the content of the physical development of the body.

An important component of the development of the of childrens of the senior preschool age is the formation of the correct posture. E. S. Vilchkovskiy [1] notes that the posture of the child is formed by the growth of the body. Therefore, care should be taken beforehand to prevent the occurrence of various physical abnormalities associated with impaired posture.

The purpose of the research is to provide theoretical substantiation and experimental verification of the performance of childrens motor activity the senior preschool age with the use of Ukrainian folk games and fun activities.

Organization and methods of research. Pre-school educational institutions No. 11 and No. 18 of Lutsk City Council became the experimental base of the study. In research and development activity, 120 children of senior preschool age took part. A number of tests were used to reveal the physical qualities, running with a maximum speed of 30 m (sec); standing jump (cm); throwing a tennis ball at the target (points); hanging on bent hands (sec); slope forward from a sitting position (cm).

Research results. To determine the motor activity of children, we used the electronic step-by-step gauges OMRON CaloriScan 306 Gold .The device is attached to the belt. The number of steps and the length of the distance were fixed. The error was 10 %, which is permissible. The results of the research of motor activity of 5-6 year old children are given in table 1.

Table 1

The average indicators of motor activity of children 5-6 year olds during the day

Age, years	Gender	Indexes	
		Steps	Meters
5	boys	6873,5	3917,9
	girls	6783,2	3866,4
6	boys	6945,8	4098,0
	girls	6859,0	4046,8

The results obtained indicate that children during the day make 6783.2-6945.8 steps, which corresponds to 3866.4-4098.0 meters. Boys have a somewhat higher motor activity (at the age of 5 years - 90 steps (1.33 %), at the age of 6 years - 86 steps (1.27 %).However, this difference is negligible. Therefore, it can be argued that the total number of locomotions of boys and girls aged 5-6 years is in the same range.

No significant increase in the physical activity of children aged 5 to 6 years was detected. The boys' number of steps increases by 1.05 %, the girls' - by 1.12 %. However, the distance covered by boys is increased by 4,59 %, in girls - by 4,67 %.This tendency is caused by an increase in the length of the step of children by 2-3 cm.

For normal functioning of the human body, a certain "dose" of motor activity is required. Volumes of motor activity depend on physiological, social and cultural factors, age, gender, physical preparedness, lifestyle, climatic conditions, and other factors. Determination of rational norms of motor activity depends on individual potential of a person.

The rational standard of motor activity is understood as the volume, providing for health promotion and enhancement of physical abilities of a person. The rational level of motor activity promotes health care, improvement of mental and physical development of children only on condition of regular and systematic exercise in physical education [4].

According to T. Krutsevich [3], the hygienic norm is the quantity of motor activity that fully satisfies the biological need for movement, corresponds to the functional capabilities of the body and promote the health of children and their harmonious development.

The analysis of the functional needs of the child's body according to the season, E.S. Vilchkovskiy [1] suggests the norms of physical activity during children's studying in the pre-school educational institution: summer – 18-20, autumn – 15-19, in winter – 16,5-18 and spring – 16-17,5 thousand steps.

Comparison of the individual results with the norms of motor activity for 5-6 year old children testifies to very low rates of motion of the respondents. On the average, in the volume of locomotion, children lag behind hygiene standards by 130.4% -136.6%. This situation leads to the need to study the ways of increasing physical activity of children in preschool educational institutions. In the pedagogical experiment the Ukrainian folk games were widely used. Students of the control group were trained according to the curriculum called "The Child".

Initially, the experiment included simple games based on the simple and natural movements, with a simple organization, without a split into teams, later the experiment became more complex and required special training (jumping, throwing, climbing skills).

The high intensity games were conducted during Physical education classes. The lesson consisted of 3-4 folk games and followed such a principle: the first game – with the average mobility, providing a gradual increase in physical activity; the next games retained a high level of mobility, and ended up playing a game of low mobility. Each game was repeated 3-5 times. In the walks, we conducted games of medium intensity, with which the children had already become acquainted at the lessons of physical education.

Testing the results of children of 5-6 year old children (at the beginning of the experiment) indicated that the physical preparation of preschoolers of the experimental and the control groups did not differ.

However, at the end of the experiment, the test revealed the difference in results (Table 2). For example, the results of the run of 30 m in experimental groups of 5-year-old children increased by 0.3 sec for boys and 0.6 sec for girls. As for children of the control groups the resuts were 0.3 sec with boys and

0.4 sec with girls. With the 6-year-old boys of the experimental group, the results increased by 1.2 sec, with the girls – by 1.0 sec. In the control group 0.2 sec and 0.3 sec.

In the long jump the experimental groups for children aged 5 result increased by 13.5 cm with boys, girls - 8.6 cm, while control groups - 8.9 cm and 3.8 cm. 6 years old children of experimental groups: boys – 18.9 cm, girls - 13.4 cm; control groups - 9.8 cm and 8.9 cm.

Table 2

Level of development of speed-force qualities of children of experimental and control groups during a pedagogical experiment, $(\overline{X} \pm S_{\overline{x}})$

Age	Groups	Gender	At the beginning of the experiment	At the end of the experiment	Growth	P
Run 30 m, s						
5	E	B	7,6±0,06	7,3(0,06	0,3	<0,05
		G	8,8(0,1	8,2(0,1	0,6	<0,001
	C	B	8.5(0,07	8,2(0,12	0,3	<0,05
		G	8,7±0,11	8,3±0,1	0,4	<0,05
6	E	B	7,8±0,08	6,6±0,1	1,1	<0,001
		G	8,2±0,06	7,2±0,06	1,0	<0,001
	C	B	7,9±0,06	7,7±0,09	0,3	<0,05
		G	8,0±0,09	7,7±0,07	0,3	<0,05
Standing jump, cm						
5	E	B	75,4±1,85	88,9±1,29	13,5	<0,001
		G	73,7±1,85	82,3±1,67	8,6	<0,001
	C	B	74,7±1,65	83,6±1,70	8,9	<0,001
		G	73,6±1,53	77,4±1,43	3,8	>0,05
6	E	B	89,1±1,43	108,7±1,24	18,9	<0,001
		G	83,7±1,25	97,1±1,17	13,4	<0,001
	C	B	83,7±1,64	93,5±1,10	9,8	<0,001
		G	74,2±1,68	83,1±1,19	8,9	<0,001
Throwing the ball at the target, points						
5	E	B	4,3±0,13	4,8±0,09	0,5	<0,001
		G	4,2±0,15	4,8±02	0,6	<0,001
	C	B	3,7±0,11	3,9±0,09	0,2	>0,05
		G	3,8±0,08	4,0±0,14	0,2	>0,05
6	E	B	4,2±0,07	4,6±0,05	0,4	<0,001
		G	4,3±0,08	4,9(0,07	0,6	<0,001
	C	B	3,6(0,09	3,9(0,11	0,3	<0,05
		G	3,7(0,1	3,8(0,07	0,1	>0,05

E – experimental group, C – control group, B – boys, G – girls.

The increase in the results of the standing jumps occurred as a result of improving the techniques of jumping, as well as the growth of leg muscle strength, which can be explained by the positive influence of the method we proposed.

Testing of dexterity indicates a gradual improvement in every next group. In 5-year-old children of the experimental groups, the growth of results of boys is 0.5 points, of girls - 0.6 points; control groups of boys and girls - 0.2 points. Consequently, children of experimental groups performed throwing at a target better than the children of control group. This is due to their higher level of practice in playing popular games.

The data of 5 year old children's testing force endurance indicate an improvement of their results in experimental groups: boys – 3,6sec, girls – 3.1sec; boys improved result in control groups for 1.1sec, girls for 0.7 sec. 6 years children had these changes higher in experimental groups: boys – 5.3sec, girls – 3,2 sec. In the control groups the improvement in results was negligible: boys – 1.4, girls – 0.7 s (table 3). Therefore,

survey data of the static endurance in the process of the experiment point to the fact that the results of children in the experimental groups increased drastically.

Data analysis of 5 year old children's measurement of flexibility shows that boys have 4.0 cm in their increase and girls have 3.4 cm in the experimental groups. In the control groups the increase is as follows: boys – 1.7 cm, and girls –1,3 cm. 6 year old children's results increased by 3.4 cm (boys) and 3.7 cm (girls) in experimental groups, by 2.0 cm (boys) and 2.1 cm (girls) in control groups.

In our opinion, the top results of certain physical qualities depend on the nature of the exercises and games offered to children. If the teachers suggested exercises to develop flexibility (played outdoor games involving tilting, throwing, etc.), accordingly, the children's results of the development of this quality would be better.

Thus, the obtained results indicate that the widespread use of folk outdoor games in the system of physical education of senior preschool children (during physical training and outing) has made a positive impact on an all-round development of physical fitness of children in the experimental groups in comparison with the control ones.

Table 3

The level of development of the children's power endurance and flexibility in the experimental and control groups during the pedagogical experiment, ($\overline{x} \pm s_{\overline{x}}$)

Age, years	Groups	Gender	At the beginning of the experiment	At the end of the experiment	The increase of the results	P
Hanging on the bar with the bent arms, sec						
5	E	B	25,1±1,28	28,7±1,33	3,6	<0,05
		G	20,2±1,22	23,3±1,26	3,1	<0,05
	C	B	21,2±1,34	22,3±1,42	1,1	>0,05
		G	20,0±1,18	20,7±1,37	0,7	>0,05
6	E	B	29,4±1,27	34,7±1,16	5,3	<0,05
		G	24,2±1,21	27,4±1,18	3,2	<0,05
	C	B	27,5±1,52	28,9±1,02	1,4	>0,05
		G	20,1±1,47	21,1±1,54	1,0	>0,05
Tilt forward, cm						
5	E	B	2,7±0,17	6,7±0,17	4,0	<0,001
		G	2,1±0,26	5,5±0,16	3,4	<0,001
	C	B	1,4±0,14	3,1±0,34	1,7	<0,001
		G	2,1±0,24	3,4±0,28	1,3	<0,001
6	E	B	2,3±0,23	5,7±0,13	3,4	<0,001
		G	2,1±0,31	5,8±0,11	3,7	<0,001
	C	B	2,1±0,25	4,1±0,14	2,0	<0,001
		G	2,7±0,34	4,8±0,35	2,1	<0,001

Discussion. The scientists and experts say that children's physical activity has decreased significantly in recent years. Our researches confirm this problem. One reason for this phenomenon is the computer and mobile communication captivating not only the adults and schoolchildren, but also children of preschool age, which reduces their motion. The use of efficient means of organization and contents of pedagogical process in preschool institutions will improve the situation.

In our opinion, some of these means are popular outdoor games and fun activities. Wide use of these pedagogical tools in modern life will contribute to the effective succeeding in the tasks of spiritual and physical improvement of the child's individuality.

Conclusions and prospects for further research. Scientists and experts have concluded the inappropriate state of children's health, poor physical fitness, caused by low levels of physical activity. To solve this problem, an active search of ways of improvement of physical education in preschool educational institutions must be conducted. Teachers ensure various activities to raise the standard of the children's physical activity and to improve physical condition of the child and his or her psyche during the day. An interest in folk physical exercise is growing. Therefore, to improve the physical activity of preschool children in educational institutions, we used folk outdoor games and fun activities during the classroom physical education and outings. An approbation of the developed methodology showed its effectiveness, which is

confirmed by a significant increase in the level of physical fitness of children in the experimental group in terms of all physical indicators.

Further research will be focused on the methodology of preschool age children's motion activity using a variety of folk outdoor games in the educational process of other educational institutions in Lutsk.

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EDUCATIONAL MODEL OF PHYSICAL TRAINING OF STUDENTS OF BIO-TECHNOLOGICAL PROFILES

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Abstract

In modern socio-economic conditions professional training of students in higher educational institutions is of great importance, which most concretely represents the principle of organic connection of physical education with the practice of work. The assistance in the preparation of harmoniously, highly skilled specialists is the purpose of physical education in educational institutions. In the process of training in the course of physical education, the following tasks are to be solved: education of students of high moral, volitional and physical qualities, readiness for highly productive work; preservation and strengthening of health, assistance in the correct formation and comprehensive development of the body, support of high working capacity throughout the period of training; comprehensive physical training of students; their profile physical training taking into account the peculiarities of future labor activity; acquisition of students the necessary knowledge on the basics of theory, methodology and organization of physical education and sports training; education of students convinced of the need to regularly engage in physical education and sports. Ukraine has a wide range of activities that create the necessary working and living conditions, improve the external environment, including the production environment, the further development of health care. At the same time, human activity, physical culture and sports are important factors for improvement, health improvement, which ultimately enhances the creative activity of man and his ability to work. Physical culture is an integral part of human life. Physical exercises play a significant role in the ability of members of society, which is why knowledge and skills in physical culture should be laid out in educational institutions of different levels in stages.

Despite the scientific achievements in the physical education and sport system, most of the issues of professional training were left out of the attention of domestic and foreign physicists and sports scientists. Taking into account this, we faced the task of developing an educational model of the professional physical training of students of the specialty of production and processing of livestock products and to identify the main components of the content of major physical training. We have developed the content of the curriculum for students of the specialization of the production and processing of livestock products, which consisted of two blocks: physical education and physical training.

Key words: major physical training, content, education, experts, model, students, occupations, experiment, physical education.

Богдан Семенів, Андрій Бабич, Петро Біленький, Олександр Ковбан. Освітня модель профілюючої фізичної підготовки студентів біолого-технологічних профілів. У сучасних соціально-економічних умовах важливого значення набуває професійна підготовка студентів у ВНЗ, яка найбільш конкретно втілює принцип органічного зв'язку фізичного виховання з практикою трудової діяльності. Мета фізичного виховання в навчальних закладах – сприяння підготовці гармонійно розвинених, висококваліфікованих фахівців. У процесі навчання з курсу фізичного виховання передбачено виконання завдань: виховання в студентів високих моральних, вольових і фізичних якостей, готовності до високопродуктивної праці; збереження й зміцнення здоров'я, сприяння правильному формуванню та всебічному розвитку організму, підтримки високої працездатності впродовж усього періоду навчання; усебічна фізична підготовка студентів; їх профілююча фізична підготовка з урахуванням особливостей майбутньої трудової діяльності; придбання студентами необхідних знань з основ теорії, методики й організації фізичного виховання й спортивного тренування; виховання в студентів переконаності в необхідності регулярно займатися фізичною культурою та спортом. В Україні здійснюється широкий комплекс заходів, що створюють необхідні умови праці та побуту, оздоровлення зовнішнього, у тому числі й виробничого, середовища, подальший розвиток охорони здоров'я. Водночас активність людини, засоби фізичної культури та спорту є важливими чинниками вдосконалення, зміцнення здоров'я, що, у підсумку, підвищує творчу активність людини, її працездатність. Фізична культура – невід'ємна частина життя людини. Вона займає досить важливе місце в навчанні, роботі людей. Заняття фізичними вправами відіграють значну роль у працездатності членів суспільства, саме тому знання й уміння з фізичної культури повинні закладатися в освітніх установах різних рівнів поетапно.

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Нами розроблено зміст програми профілюючої фізичної підготовки студентів спеціальності виробництва та переробки продукції тваринництва, який складався з двох блоків: фізкультурна освіта та профілююча фізична підготовка.

Ключові слова: профілююча фізична підготовка, зміст, освіта, експерти, модель, студенти, заняття, експеримент, фізичне виховання.

Богдан Семенив, Андрей Бабич, Петр Беленький, Тарас Приставский, Александр Ковбан. Образовательная модель профилирующей физической подготовки студентов биолого-технологических профилей. В современных социально-экономических условиях важное значение приобретает профессиональная подготовка студентов в вузах, которая наиболее конкретно воплощает принцип органической связи физического воспитания с практикой трудовой деятельности. Целью физического воспитания в учебных заведениях является содействие подготовке гармонично развитых, высококвалифицированных специалистов. В процессе обучения по курсу физического воспитания предусматривается решение задач воспитания у студентов высоких моральных, волевых и физических качеств, готовности к высокопроизводительному труду; сохранение и укрепление здоровья, содействие правильному формированию и всестороннему развитию организма, поддержание высокой работоспособности на протяжении всего периода обучения; всесторонняя физическая подготовка студентов; их профилирующая физическая подготовка с учетом особенностей будущей трудовой деятельности; приобретение студентами необходимых знаний по основам теории, методики и организации физического воспитания и спортивной тренировки; воспитание у студентов убеждённости в необходимости регулярно заниматься физической культурой и спортом. В Украине осуществляется широкий комплекс мер, создающих необходимые условия труда и быта, оздоровления внешней, в том числе и производственного, среды, дальнейшее развитие здравоохранения. Вместе с тем, активность человека, средства физической культуры и спорта являются важными факторами совершенствования, укрепления здоровья, в конечном итоге повышает творческую активность человека, его работоспособность. Физическая культура – неотъемлемая часть жизни человека. Она занимает достаточно важное место в учебе, работе людей. Занятия физическими упражнениями играют значительную роль в работоспособности членов общества, именно поэтому знания и умения по физической культуре должны закладываться в образовательных учреждениях различных уровней поэтапно.

Несмотря на имеющиеся научные достижения в системе физического воспитания и спорта, большинство вопросов профилирующей физической подготовки остались без внимания отечественных и зарубежных ученых по физическому воспитанию и спорту. Учитывая это, перед нами встала задача разработать образовательную модель профилирующей физической подготовки студентов специальности производства и переработки продукции животноводства и определить основные компоненты содержания профилирующей физической подготовки. Нами разработано содержание программы профилирующей физической подготовки студентов специальности производства и переработки продукции животноводства, состоящий из двух блоков: физкультурное образование и профилирующая физическая подготовка.

Ключевые слова: профилирующая физическая подготовка, содержание, образование, эксперты, модель, студенты, занятия, эксперимент, физическое воспитание.

Introduction. Domestic and foreign scientists on physical education and physiology have determined the state of professional training of students of higher educational institutions of about one hundred specialties. The analysis of literature and practice has shown that despite the undeniable scientific achievements in the field of physical education, a considerable part of the questions of major training of students of higher educational institutions was left out of the attention of domestic and foreign scientists of physical education and physiology. Even where the specified type of physical education is carried out at a high organizational-methodical level, the effectiveness of physical training with the account of the chosen specialty is available only for the period of students studying in higher educational establishments. After graduating from the educational institution graduates quickly lose their level of physical training and, as a rule, do not use the acquired skills and abilities to increase their physical fitness, increase their special ability to work and prevent professional diseases. All this testifies to the need to improve the curriculum of the student's physical education.

In recent years, many searches have been conducted on the study of the problem of reducing motor activity of student youth in the process of learning [1; 3; 4], improvement of the contents of physical education of students [7; 8]. Several authors emphasize the need to use the latest technologies and techniques in physical education students higher educational institutions to increase motivation in classes [1; 5; 11].

Fundamentals of special physical training, taking into account the specifics of future professional activities, are laid down in the works of R. T. Rayevskyj, V. A. Maksymovych. Problems of increasing the

effectiveness of profile physical training are devoted to the work of V. A. Romanenko, G. G. Lapshyna and others.

Due to many scholars, in particular L. P. Pylypej, O. I. Podlesnyj, S. I. Prisyajnyuk, B. S. Semeniv were defined contents, forms and methods of using physical culture and sports to increase the effectiveness of young specialists training. It which made it possible to organize in many higher educational institutions of the country targeted work on the physical training of students, taking into account the profession chosen by them [1; 3; 11]. Such attention is due to the fact that profiling physical training is one of the forms of preparation of students for future work [4; 9].

However, noting the scientific and practical interest in the problem of professional training of students, it is possible to state, that this direction in the system of physical education requires further study and improvement. Examples of profound scientific substantiation of the main physical training of students in a number of specialties do not solve this important problem for all higher educational institutions, especially those trained to be future specialists in the production and processing of livestock products. However, the labor efficiency of the technologist for the production and processing of livestock products largely depends on his individual abilities in terms of productive mental labor, the degree of endurance and the restoration of the functions of his organism, that is from his ability to work. Scientists of physical education and physiology proved, that a low level of physical and mental work capacity leads to rapid fatigue and overwork, a large number of errors and failures in the technological process of production, decrease in creative activity [5; 8]. A good functional state of the organism, in the first place, the cardiovascular and central nervous system, which has a maximum load [5; 6; 9], is of great importance for the successful work of the livestock production technologist. Searches have shown that technologists who are engaged in physical education are less likely to seek medical care than their non-athletes [8].

The Purpose of the Search. Physical education gives students knowledge, skills that will allow him to independently identify factors that negatively affect his state of health, compile and implement complexes of purposeful fitness and health training regimes, aimed at health improvement, prevention of professional diseases, increase of special ability to work and maintain it at a high level in the course of all professional activities.

Research Objectives.

1. To develop an educational model for professional physical training of students of LNUVM and BT named a fter S. Z. Gzhytskyj.

2. To carry out an experimental verification of the developed educational model of professional physical training of students of LNUVM and BT named after S. Z. Gzhytskyj.

Material and Methods of Research

The object of scientific research: educational process of profile physical training of students.

Subject of research: content, forms, means, methods of formation of knowledge, skills and abilities of students of LNUVM and BT named after S.Z. Gzhytskyj from the profile physical training in the process of physical education.

Research Methods:

1. Theoretical: analysis of educational normative documentation, psychological, pedagogical and methodical literature with the purpose of determining the state and perspectives of research problem; comparison of different views of scientists on the problem under investigation to determine the research directions and conceptual-categorical apparatus.

2. Empirical: pedagogical observation of the educational process, questioning and pedagogical testing for diagnosing the level of physical preparedness of student youth; pedagogical experiment (stated, forming) for the purpose of obtaining the information necessary for the development of an educational model of professional physical training of students in the process of learning, formation of knowledge, skills and motor abilities in the system of physical training of students, as well as to check its efficiency and improve the students health.

3. Mathematical methods of information processing.

Research Results. Discussion. The research was conducted on the basis of the Lviv National University of Veterinary Medicine and Biotechnologies named after S. Z. Gzhytskyj.

In with of experts of the department of physical education, sports and health of LNUVM and BT named after S. Z. Gzhytskyj (11teachers) and professorial departments (27 teachers of LNUWM and BT named

after S. Z. Gzhytskyj), an educational model was proposed in the course of students' profiling physical training.

87,5 % of the experts actively supported our thesis on changing the priorities in the work on the physical education of students: it is much more important to give the student the necessary physical education than to solve the issues of their own physical training. The experts were motivated by their decision that any achievements in the physical training of students at the educational institution will quickly disappear after its completion, if the graduate is not able to continue such work on their own. It should be noted that the issue of proper profiling of fitness during training in the educational institution, experts also considered important, however put it in second place.

According to the results of the expert evaluation, we proposed two basic blocks in the educational model of students' profiling physical training: educational (theoretical) and practical PPT.

The experts were asked to fill in a questionnaire developed by us, which contained an author's version of the system of means for theoretical and practical training of students from the PPT.

The results of the experts evaluation of the author's version of the educational model of student's physical training are shown in table 1, from which it is evident that the greatest support of experts was given to positions 1.2 and 1.6 of the first section and position 2,3 of the second section. The discussion on this issue has shown that experts considered the most important thing so that the graduates are well aware of the theory and methods of physical training in the light of their future profession and able to implement them independently, and, to create the proper conditions for the student for classes in physical education and sports, taking into account professional activity (2.3).

Three positions (1,7, 1,8, and 1,9) did not receive support from most experts, therefore, they were excluded from the final version. After the discussion it became known that the development of the methods of prediction of resistance to fatigue (1,8) did not receive more than 50 % of the vote just because it concerned not all specialties, but methods for assessing the effectiveness of the PPT in the discussion the discussion sounded like a necessary knowledge to a graduate, but only 47,6 % of the votes received the questionnaires.

The experts noted during the discussion, that measures for the physical training of students, offered in the educational model with the aim of increasing the educational and special ability to work (2,1) and for the purpose of prophylactics and prevention of professional diseases (2,2), can and should be realized on regulated physical education lessons, as well as in independent classes outside the schedule.

Table 1

Results of Expert Evaluation of the System of Means of Physical Education of Students LNUVM and BT Named After S. Z. Gzhytskyj

No	Topics Section	% of Experts	Serial number for Significance
1	**2**	**3**	**4**
1	Physical education		
1.1	Theoretical training from the sections of the program on physical education	85,7	5
1.2	Methodology of using physical culture and sports from the sections of the program of physical education	100,0	1–2
1.3	Learning of basic requirements for professional physical training	48,9	7
1.4	Learning basic occupational diseases	95,2	3–4
1.5	Methods of prophylaxis of occupational diseases by means of physical culture and sports of students	95,2	3–4
1.6	Mastering the methods of organizing independent exercises in physical culture and sports with elements of professional physical training	100,0	1–2
1.7	Assimilation of the basic forms and methods of planning of profile physical training	23,8	9
1.8	Development of forecasting methods of resistance to fatigue	42,8	8
1.9	Learning methods for assessing the effectiveness of profile physical training	47,6	6

End of table 1

1	2	3	4
	Practical training		
2	Physical training is aimed at the training and educational process	76,5	4
2.1	Physical training is aimed at increasing the special ability to work	78,1	3
2.2	Physical training is aimed at the prophylactics and prevention of occupational diseases	85,7	2
2.3	Carrying out independent physical training sessions taking into account the peculiarities of future professional activities	100,0	1

In total, of the 13 sections that were proposed in the working version, the experts left 8 sections, and did not add any. The final version of the system for training students in the PPT program counted 8 measures: four of the theoretical physical education and four of the practical profile physical training.

On the basis of preliminary expert evaluation data, a variant of the educational model of student training was compiled to the use of physical culture and sports in future professional activities (educational model of physical training is shown in fig. 1).

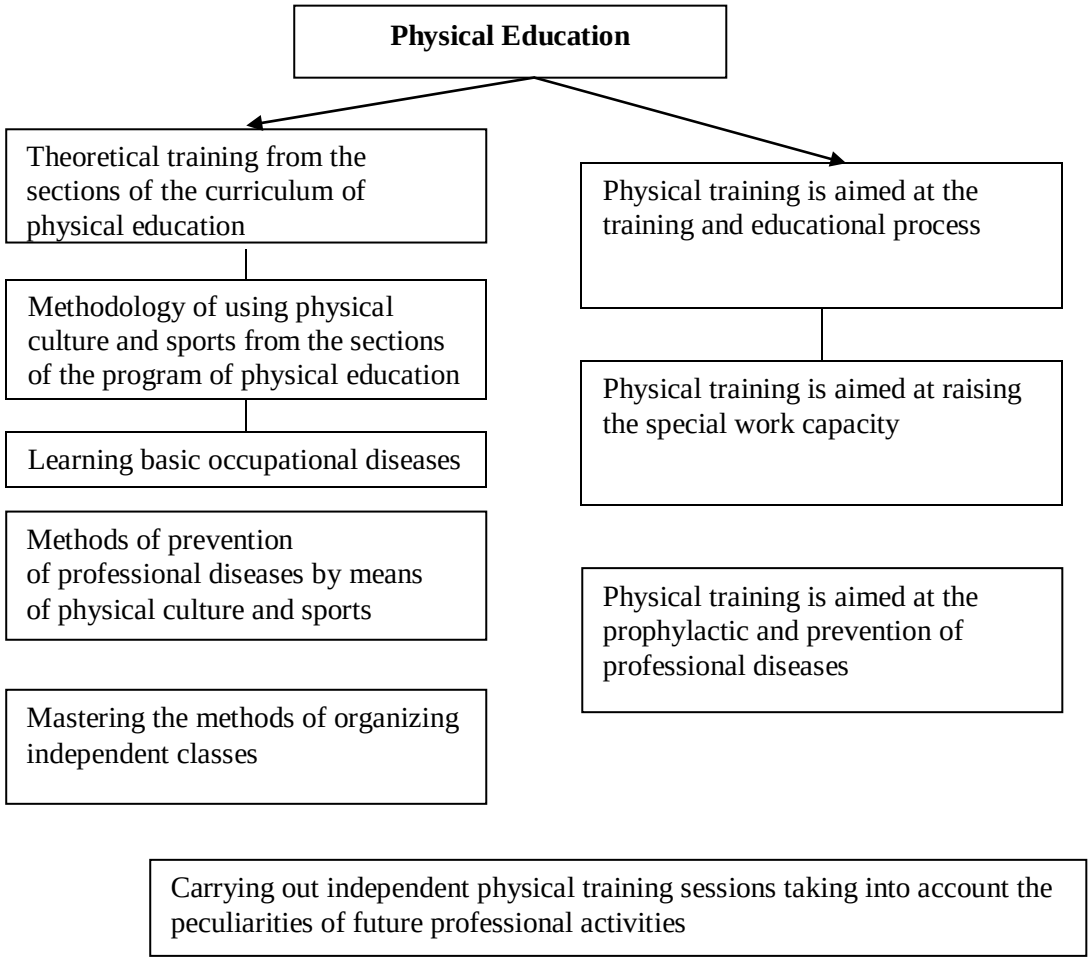

Fig. 1. *Educational Model of Professional Physical Training of Students*

The curriculum developed by us, the program and the contents of profiling physical training have undergone an experimental substantiation in the conditions of real educational and pedagogical activity. For this purpose from September, 2016 from the students of the fourth year studying in the specialty of technology of production and processing of livestock products, two groups were formed: one is experimental, for which the educational process of profile physical training was constructed on the basis of worked out and reflected in the sections of the working curriculum and the schedule of the educational

process; the second one is the control, where professional physical training was carried out with the help of traditional principles and methods of teaching without a definite educational theoretical section, mainly due to practical physical training.

The interview, which was conducted before the beginning of the experiment with the students of both groups, showed that the students of the experimental group (20 persons), and the students of the control group (20 persons) were equally illiterate in the educational and theoretical issues of professional physical training.

During the first semester of 2016, the educational and theoretical material from the PPT was submitted to the students of the experimental group, and were conducted methodological exercises on the organization of PPT. After that, a student assessment of the speciality of physical training was carried out, the results of which are shown in table 2.

Table 2

Success of Students of Experimental and Control Groups From the Educational, Theoretical Course of Professional Physical Training

No	Themes of the Program	Average score		
		Experimental-Mental Group	Control Group	Differences Between Groups
1	Theoretical training in the sections of the curriculum of physical education	4,3	2,2	2,1
2	Methodology of using physical culture and sports in the sections of the program of physical education	3,9	2,5	1,4
3	Learning basic professional diseases	4,25	2,11	2,04
4	Methods of prevention of professional diseases by means of physical culture and sports	4,5	2,1	2,4
5	Mastering the methods of organizing independent exercises in physical culture and sports with elements of professional physical training	3,8	2,3	1,5
6	Physical training is aimed at the training and educational process	4,6	2,00	2,6
7	Physical training is aimed at increasing a special ability to work	4,7	2,2	2,5
8	Physical training is aimed at the prevention of occupational diseases	4,4	2,4	2,0
9	Carrying out independent physical training sessions taking into account the peculiarities of future professional activities	4,8	2,7	2,1
Total		4,34	2,27	2,07

As can be seen from the above data, the students of the experimental group basically mastered the knowledge necessary for the organization of their professional activities. Their success in all the themes of the program ranged from 3.8 to 4.8 points. There were some cases of unsatisfactory marks on certain topics in the experimental group: on themes 2 and 5, respectively, one, two marks.

Students who did not pass such training (control group) could not give correct answers to most questions. According to table 2, their success was basically unsatisfactory – 2,27 points (from 2,02 to 2,5).

During the 2nd semester 2016 to 2017 students from the experimental (20 people) and the control group (20 people) were independently used the means of physical culture and sports during the educational process, and having the industrial practice.

As can be seen from table 3, the professional ability of students of the experimental group after conducting a pedagogical experiment was higher than of the students of the control group.

Table 3

Comparative Characteristic of Special ability of Graduate Students

No	Indicator	Experiment. Group		Control Group		Differences	
		X±Mx	*σ*	*X±Mx*	*σ*	*t*	*p*
1	Number of viewed signs, units	220,4±12,1	26,3	123,8±8,3	18,6	6,64	≤0,05
2	Number of made mistakes, units	2,8±0,4	1,1	6,9±0,8	2,3	4,6	≤0,001
3	Number of signs per line, units.	68,0±2,5	5,8	30,4±2,3	5,1	11,09	≤0,001

All this testifies, however, is that a student possesses the knowledge and skills necessary to strengthen his health, to improve his physical fitness to, increase his professional ability to work - motivation for physical education classes in him is as good twice as compared with the control group.

This is evidence of the effectiveness of using the educational model of student's physical education.

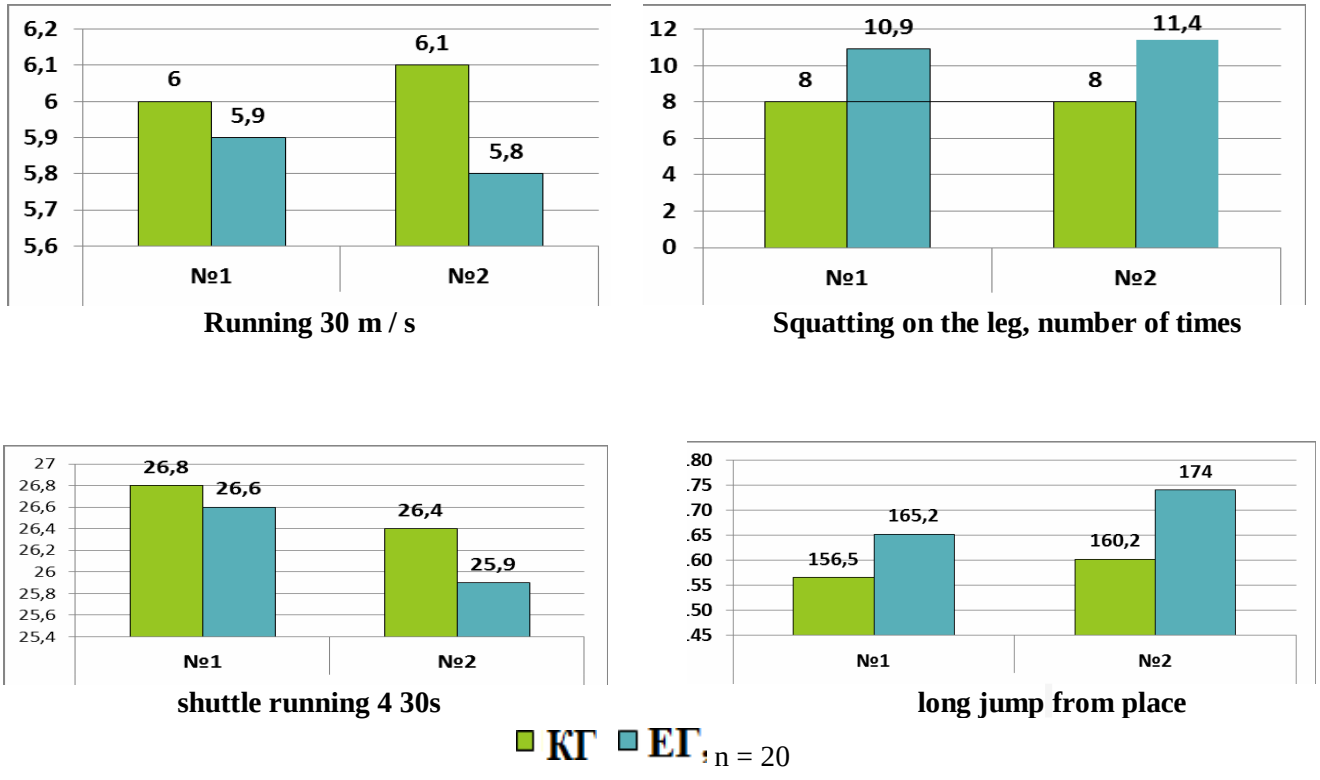

Fig. 2. *Influence of Molding Experiment on Physical Capacity, Where*: *№ 1 – at the Beginning; № 2 – at the end of the Experiment*

The special physical students capacityof the experimental group after the pedagogical experiment as can be seen from Figure 2 was higher than the control group students by 15–20 %.

As we can see from table 4, the activity of students of the experimental group after the end of the study according to the SAT method increased by 46.4%, of the control group by 26,9 %. This is evidence of the effectiveness of using the educational model of student's physical education.

Table 4

Change in Activity (units) of Students of LNUVM and BT Named After S. Z. Gzhytskyj According to the HAM test Data During a Pedagogical Experiment

Group	Num. of Pers.	Beginning of the Experiment		End of Experiment		The Magnitude of the Increase in %
		$X \pm Mx$	σ	$X \pm Mx$	σ	
Control Group	20	2,6±0,2	0,07	2,3±0,4	0,1	26,9
Experimental Group	20	2,8±0,4	0,1	4,1±0,6	0,3	46,4

Conclusions and Perspectives of Further Research

1. Taking into account the expert assessment of the system of training for students professional physical training, we had a variant of the educational model with the PPT, which consisted of two blocks: educational (theoretical) and practical.

2. The educational model of preparation of students for the use of means of physical culture and sports in our future professional activity, was developed and experimentally substantiated by us, which provides the necessary theoretical training of students. This model provides the necessary knowledge, skills and abilities for the independent use of physical education and sports facilities with the purpose of increasing professional performance, prevention of professional diseases, improvement of the psycho-emotional state of a person.

Prospects for further research – to develop a method for forecasting the tiredness of future specialists in the production and processing of livestock products. To develop fitness and health complexes of exercises, which would reduce the level of fatigue in the process of training and professional activity.

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TRAINING ATHLETES WITH DISABILITIES AT THE STAGE OF SPORT AND REHABILITATION

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Abstract

Topicality. The analysis of scientific and methodological literature shows the lack of a unified approach to compiling training system and peculiarities of compiling training programs for athletes of different nosological groups at different stages of long-term training. ***The Purpose of the Study*** is to identify the characteristics of training athletes with disabilities at the stage of sports and rehabilitation training in strength sports. ***Methods and Methodology of the Study.*** To solve this task, analysis and summary of scientific and methodological literature was carried out; sociological methods (questionnaire) was used; methods of mathematical statistics. The research was carried out on the basis of 15 Regional Centers of Physical Culture and Sports for the Disabled «Invasport», 54 coaches in strength sports participated in our research. ***Results.*** Based on the analysis of obtained results, we have found out to what extent the declared tasks of sports and rehabilitation stage in the practice of adaptive sports were realized; as well as recommended types of sports to be included in the training program at the stage of sports and rehabilitation training for athletes with visual impairment and injuries to locomotor system in strength sports. Specialists in the field of adaptive sports consider the stage of sports and rehabilitation training solely within the framework of solving the problems of recreation and rehabilitation of people with disabilities. This determines the need to ensure sporting orientation of athletes with disabilities, preparation and creation of prerequisites for further sports training in future at the stage of sports and rehabilitation training. ***Conclusions.*** Having determined the significance of sports for athletes with disabilities, it has been established that the most appropriate for athletes with visual impairment and locomotors injuries is to include swimming, powerlifting, athletics, and armwrestling in training program. The necessity of scientific and methodological substantiation of training programs for athletes of different nosological groups in strength sports at the stage of sports and rehabilitation training has been confirmed.

Key words: athletes, long-term training, rehabilitation, sports, disability.

Марія Розторгуй, Аліна Передерій. Підготовка спортсменів з інвалідністю на етапі спортивно-реабілітаційної підготовки в силових видах спорту. Актуальність. Аналіз науково-методичної літератури свідчить про відсутність єдиного уніфікованого підходу до побудови багаторічної підготовки та особливостей побудови програм підготовки для спортсменів різних нозологічних груп на різних етапах багаторічної підготовки. ***Мета дослідження*** – виявлення особливостей підготовки спортсменів з інвалідністю на етапі спортивно-реабілітаційної підготовки в силових видах спорту. ***Метод та методологія проведення роботи.*** Для розв'язання поставленої мети використано аналіз та узагальнення науково-методичної літератури; соціологічні методи (анкетування); методи математичної статистики. Дослідження проводили на базі п'ятнадцяти регіональних центрів фізичної культури і спорту інвалідів «Інваспорт» з залученням п'ятдесяти чотирьох тренерів із силових видів спорту. ***Результати роботи.*** На основі аналізу отриманих результатів виявлено ступінь реалізації задекларованих завдань етапу спортивно-реабілітаційної підготовки в практиці адаптивного спорту, визначено рекомендовані види спорту для включення в програму підготовки на етапі спортивно-реабілітаційної підготовки для спортсменів із вадами зору й пошкодженнями опорно-рухового апарату в силових видах спорту. Фахівцями галузі адаптивного спорту етап спортивно-реабілітаційної підготовки розглянуто виключно в межах виконання завдань рекреації та реабілітації осіб з інвалідністю, що визначає необхідність забезпечення реалізації спортивної орієнтації спортсменів з інвалідністю підготовки та

створення передумов для поглибленої спортивної підготовки в майбутньому на етапі спортивно-реабілітаційної підготовки. ***Висновки.*** У результаті визначення значущості включення видів спорту встановлено, що в програму підготовки для спортсменів із вадами зору та пошкодженнями опорно-рухового апарату найбільш доцільно включати плавання, пауерліфтинг, легку атлетику й армспорт. Підтверджено необхідність науково-методичного обґрунтування програм підготовки для спортсменів різних нозологічних груп у силових видах спорту на етапі спортивно-реабілітаційної підготовки.

Ключові слова: спортсмени, багаторічна підготовка, реабілітація, види спорту, інвалідність.

Мария Розторгуй, Алина Передерий. Подготовка спортсменов-инвалидов на этапе спортивно-реабилитационной подготовки в силовых видах спорта. **Актуальность.** Анализ научно-методической литературы свидетельствует об отсутствии единого унифицированного подхода к построению многолетней подготовки и особенностей построения программ подготовки для спортсменов различных нозологических групп на различных этапах многолетней подготовки. ***Целью*** исследования является выявление особенностей подготовки спортсменов с инвалидностью на этапе спортивно-реабилитационной подготовки в силовых видах спорта. ***Метод и методология проведения работы.*** Для решения поставленной цели использованы анализ и обобщение научно-методической литературы; социологические методы (анкетирование), методы математической статистики. Исследование проводили на базе пятнадцати региональных центров физической культуры и спорта инвалидов «Инваспорт» с привлечением пятидесяти четырех тренеров по силовым видам спорта. ***Результаты работы.*** На основе анализа полученных результатов выявлена степень реализации задекларированных задач этапа спортивно-реабилитационной подготовки в практике адаптивного спорта, определены рекомендованные виды спорта для включения в программу подготовки на этапе спортивно-реабилитационной подготовки для спортсменов с нарушениями зрения и повреждениями опорно-двигательного аппарата в силовых видах спорта. Специалистами отрасли адаптивного спорта этап спортивно-реабилитационной подготовки рассматривается исключительно в рамках решения задач рекреации и реабилитации лиц с инвалидностью, что определяет необходимость в обеспечении реализации спортивной ориентации спортсменов с инвалидностью подготовки и создания предпосылок для углубленной спортивной подготовки в будущем на этапе спортивно-реабилитационной подготовки. ***Выводы.*** В результате определения значимости включения видов спорта установлено, что в программу подготовки для спортсменов с нарушениями зрения и повреждениями опорно-двигательного аппарата наиболее целесообразно включать плавание, пауэрлифтинг, легкую атлетику и армспорт. Подтверждается необходимость научно-методического обоснования программ подготовки для спортсменов различных нозологических групп в силовых видах спорта на этапе спортивно-реабилитационной подготовки.

Ключевые слова: спортсмены, многолетняя подготовка, реабилитация, виды спорта, инвалидность.

Introduction. The efficiency of training athletes with disabilities directly depends on the degree of implementation of a rational combination of the foundations of the general theory of athletes training and the nosological peculiarities of athletes in adaptive sport during the long-term training [2; 6; 7; 9; 12]. Scientific knowledge concerning structure, contents, purpose and tasks of stages in training athletes with disabilities has polystructural character [3; 5; 8; 11; 13].

The traditional approach to building long-term training presupposes the use of theoretico-methodological aspects of the general theory of training healthy athletes in adaptive sport. V. M. Derkach and G. A. Yedynak assume that the general theory of training should form the basis for periodization of sports training of athletes with lesions of the musculoskeletal system as a long-term training process taking into account mental peculiarities of athletes with disabilities and providing the inclusive education (mutual training sessions of healthy athletes and disabled) [4].

A specific approach to building the long-term training of athletes in adaptive sports is based on fundamental researches of S. P Yevseyev, Yu. A. Briskin, A. V. Perederiii, L. V. Biankina,
A. V. Khotymchenko and others. [1; 2; 3; 5; 14]. The basis of this approach is the reflection of the periodization from the perspective of a specific component of the system of training the athletes with disabilities, which should be based not only on objectively existing regularities of the formation of sports mastery, which are reflected in specific kinds of sport, but also on general concept of adaptive sport [1; 2; 3; 10].

It should be noted that there is no unified approach to scientific and methodological support of the long-term training of athletes with disabilities as to quantity, structure and content of long-term development stages. However, the regulatory documents of youth sports schools for persons with disabilities state the possibility of creating rehabilitation training groups which presupposes prior acquitance of athletes with different sports. In scientific papers written by Yu. A. Briskin the necessity of singling out the first stage of

long-term training of athletes with disabilities is proved. It should provide the execution of correctional-rehabilitation program [1]. This statement is reflected in scientific and methodical works of S. P. Yevseyev, but the author categorizes this stage as sports and recreative and proves the necessity of developing programs for training athletes of different nosological groups [2].

Despite the attempts of scientists to prove the necessity of singling out in the structure of long-term athletes training a particular stage, the focus of which is determined by the necessity of solving rehabilitation and sports tasks, the need to determine the structure and content of this stage, peculiarities of building the training programs for athletes of different nosological groups still remains.

The purpose of the research is to find out the peculiarities of training the athletes with disabilities at the stage of sports and rehabilitation training in strength sports.

Material and methods of research. To solve this task, we used the following research methods: the analysis and reviewing of scientific and methodological literature; sociological methods (questionnaire); methods of mathematical statistics. The survey was conducted on the basis of 15 Regional Centers of Physical Culture and Sports for the Disabled "Invasport". 54 coaches in strength sports participated in our research. Among them were the Honored coaches of Ukraine (n = 13), top-level coaches (n = 10), coaches of the first category (n = 16), coaches of the second category (n = 10), coaches without category (n = 5). The average experience of work with athletes with disabilities was 9.44 years. For mathematic-statistical processing of the obtained data the average arithmetic value (X), the mean square deviation (σ), and the coefficient of concordance were calculated using the method of Kendall (W).

Research results and discussion. To find out the effectiveness of the implementation of the tasks of the stage of the sports rehabilitation training that are declared in the writings of Yu. A. Briskin [1], the respondents were asked to identify the degree of their completion in training the athletes with disabilities. According to the experts in the process of training persons with disabilities the following tasks of the stage of sports rehabilitation training are performed in full (100,00%): reducing the duration and improving the effectiveness of primary training, extension of the range of movement habits and skills; the implementation of positive effects on health promotion, improving physical development and physical fitness, formation of adaptive-compensatory mechanisms in the bodies of athletes with disabilities; normalization of motor activity, recovery of muscle strength, prevention of muscle atrophy, prevention and treatment of contractures, development of skills in independent movement.

As can be seen from the data, the statistical majority of the respondents believes that in the process of training the athletes with disabilities in strength sports at this stage of development, the problems of sports orientation of athletes with disabilities and creation preconditions for profound sports training in the future are not solved (18.52% respondents) or partially solved (35.18% respondents). Among the interviewed coaches 46,30 % state that the training of athletes at the stage of sports rehabilitation training provides for the implementation of sports orientation and creation preconditions for profound sports training. 81,48% of respondents believe that the problem of reducing the negative impact of sports activities on the body of highly qualified athletes with disabilities in the process of training is not solved.

The obtained results allow to assume that in the practice of sport the stage of sports rehabilitation training in the structure of long-term training of athletes with disabilities in strength sports is viewed by specialists within the tasks related to recreation and rehabilitation of persons with disabilities. However, besides rehabilitation tasks, this stage of training must have a sports focus that will allow for the implementation of sports orientation of athletes with disabilities and creation the preconditions for profound sports training in the future. The survey suggests that each stage of the long-term training of athletes in strength types of adaptive sports must contain a rehabilitation component that must be implemented depending on the objectives and the focus of the stage.

To identify sports, the inclusion of which in the training program at the stage of sports rehabilitation training, according to experts, will facilitate the sports orientation for athletes with disabilities, the respondents were asked to distribute sports according to their importance for each nosological group. In this case, the list included such sports that do not require significant financial investments, and the technique of sports is characterized by relative technical simplicity.

Determining the feasibility of incorporating sports into the program at the stage of sports rehabilitation training by specialists with the goal of promoting sports orientation of athletes with lesions of musculoskeletal system has allowed to find out that the most important sports are powerlifting – 660 points

(SD = 0,60); swimming – 642 points (SD = 0,90); arm-wrestling – 560 points (SD = 0,71) (table. 1). To sports, the inclusion of which in the program at the stage of sports rehabilitation for training athletes with lesions of musculoskeletal system has a medium level of significance belong wheelchair basketball – 471 points (SD = 0,46); sitting volleyball – 432 points (SD = 0,40); bocce – 329 points (SD = 0,76); table tennis – 328 points (SD = 0,98); wheelchair dancing– 284 points (SD = 0,93). The least significant sports, according to experts is badminton – 216 points (SD = 0,63); football – 133 points (SD = 0,54); orienteering – 114 points (SD = 1,22); Futsal – 81 points (SD = 0,53).

Table 1

The relevance of including sports in the program of preparation of the stage of sports rehabilitation for training the athletes with lesions of musculoskeletal system (according to the survey results, n=54)

№	Sports	Average rank	Total score	Standard deviation (SD)
1.	Powerlifting	12,22	660	0,60
2.	Swimming	11,89	642	0,90
3.	Armsport	10,61	573	0,95
4.	Athletics	10,37	560	0,71
5.	Wheelchair basketball	8,72	471	0,46
6.	Sitting volleyball	8,00	432	0,40
7.	Bocce	6,09	329	0,76
8.	Table tennis	6,07	328	0,98
9.	Wheelchair dancing	5,89	284	0,93
10.	Badminton	4,00	216	0,63
11.	Football	2,76	133	0,54
12.	Orienteering	2,11	114	1,22
13.	Futsal	1,50	81	0,53

To assess the consistency of respondents' answers, Kendell's coefficient of concordance, equal to 0.747, was determined, which suggests satisfactory consistency between respondents.

As a result of the analysis of the ranking for the athletes with visual impairment, according to the respondents, the recommended sports to be included in the training program at the stage of sports and rehabilitation training for visually impaired persons are swimming, which scored 557 points (SD = 0.63); powerlifting – 513 points (SD = 0.67); athletics – 473 points (SD = 1.45) and armsport – 465 (SD = 0.79) (table 2). According to the ranked assessments, the medium level of significance was pointed out for the following sports: goalball – 367 points (SD = 0.60); football – 303 points (SD = 0.70); futsal – 274 points (SD = 0.66); judo – 207 points (SD = 0.99). According to the respondents, sports tourism is the least expedient sport for athletes with visual impairment – 176 points (SD = 0.66), chess – 92 points (SD = 0.52) and checkers – 71 points (SD = 0.47). At the same time, the level of consistency between respondents was satisfactory (coefficient of concordance W = 0.732).

Table 2

The relevance of including sports in the program of preparation of the stage of sports rehabilitation for training the athletes with visual impairment (according to the survey results, n=54)

№	Sports	Average rank	Total score	Standard deviation (SD)
1	**2**	**3**	**4**	**5**
1.	Swimming	10.31	557	0.63
2.	Powerlifting	9.50	513	0.67
3.	Athletics	8.76	473	1.45
4.	Armsport	13.29	465	0.79
5.	Goalball	6.80	367	0.60
6.	Football	5.61	303	0.70

End of table 2

1	2	3	4	5
7.	Futsal	5.07	274	0.66
8.	Judo	3.83	207	0.99
9.	Sports tourism	3.26	176	0.66
10.	Chess	1.70	92	0.52
11.	Checkers	1.31	71	0.47

Based on the analysis of the results, the expediency of inclusion of sports in the training program at the stage of sports and rehabilitation training for athletes of different nosological groups was determined. In this case, the results of the study can be used only to justify the program of training athletes with disabilities at the stage of sports and rehabilitation training exclusively for further sports orientation in strength sports. Leading positions in assessing the significance of sports for both nosological groups, represented in strength sports, were taken by swimming, powerlifting, athletics and armsport. The rehabilitation effect of swimming and athletics on the body of athletes with disabilities is commonly recognized by specialists in the field of adaptive sport. Great amount of points for powerlifting and armsport in evaluating the significance of the inclusion of sports in the training program at the stage of sports and rehabilitation training for athletes of different nosological groups can be justified on two sides. Since the survey was conducted among specialists in strength sports, a subjective factor in determining the significance of sports can be present. The feasibility of incorporating powerlifting and armsport into the program of preparation at the stage of sports and rehabilitation training for athletes with disabilities with the aim of athletic orientation and the creation preconditions for profound sports training in the future in strength sports is unquestionable.

Conclusions. It has been established that in the practice of sport there is a need to ensure the implementation of the sports orientation of athletes with disabilities and the creation of preconditions for profound sports training in the future, which should take place at the stage of sports and rehabilitation training as a structural element of the long-term training of athletes with disabilities in strength sports.

Having determined the significance of sports to be included in the training program at the stage of sports and rehabilitation training for athletes of different nosological groups in strength sports, it has been established that swimming, powerlifting, athletics, and armsport are the most appropriate sports to be included.

The results of the research prove the need for a scientific and methodological justification of the training program at the stage of sports and rehabilitation training for athletes of different nosological groups in strength sports.

Further research is suggested to develop the training programs at various stages of long-term training for athletes of various nosological groups in strength sports.

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CHARACTERISTICS OF ANTHROPOLOGICAL AND FORCE INDICATORS OF SPORTSWOMEN OF VARIOUS QUALIFICATION KAYAK ROWING

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Abstract

Topicality. Morphological features of the man is one of the genetically predetermined factors, which most fully and clearly determines the individual specificity, allowing to assess a person's capabilities in a particular sport. Record achievements are demonstrated by those who have the most optimal morphofunctional data. ***The aim of work*** was to investigate the anthropological and power indexes of sportswomen of different qualification in rowing on kayaks. ***Material and Methods of Research.*** A total of 136 sportswomen were surveyed. Of these, athletes of high qualification – 57 people. Age of subjects is ranging between 13 to 26. The comprehensive examination included anthropometric measurements of total, longitudinal, transverse body dimensions, diameters, girths, partial body dimensions, and analysis of components of body composition. ***Results.*** When comparing the indicators of the anthropological survey, it was revealed that the greatest length and weight of the body, the circumference of the chest and the absolute surface of the body were noted by athletes of the elite, and the least indicators were noted at the athletes of the second grade. With age and advanced training, total dimensions and indicators of absolute and relative muscle mass increase, which is due to age-related changes and the influence of rowing classes on the athletes. Analysis of the components of the weight composition of athletes showed that with increasing age and athletes' qualifications, the fat mass declines. There is also an increase in the circumferential dimensions of the body, the kayak strength indicators. ***Conclusions.*** Morpho-functional indices of athletes of different qualification groups engaged in kayaking rocks were studied. It is revealed that with the increase of qualification there is an increase in muscle and a decrease in fat mass. It is noted that the greatest morphofunctional indicators are with athletes of the elite group: Honored masters of sports and masters of sports of international class. The model characteristics of kayak-athlets elaborated developed by us, differing in qualifications from the honored masters of sports to the second level, can be used for selection and sport orientation in the rowing at various stages of preparation and control of the dynamics of the morphofunctional state in the annual training cycle.

Key words: rowing, kayak, morphofunctional indices.

Володимир Давидов, Володимир Шантарович, Дмитро Пригодич. Характеристика антропологічних та силовых показників спортсменок різної кваліфікації в гребелі на байдарках. Актуальність. Морфологічні особливості людини – одна з генетично заздалегідь визначених факторів, що найбільш повно та наочно визначає індивідуальну специфічність дає змогу цінити можливості людини в тому чи іншому виді спорту. Рекордні досягнення демонстрируются саме тими, хто володіє найбільш оптимальними морфофункціональними даними. ***Мета роботи*** – дослідити антропологічні й силові показники спортсменок різної кваліфікації в гребелі на байдарках. ***Матеріал і методи дослідження.*** Усього обстежено 136 спорт-сменок, із них високої кваліфікації – 57. Вік досліджуваних – 13–26 років. Комплексне обстеження включало антропометричні вимірювання тотальних, повздовжніх, поперечних розмірів тіла, діаметрів, обхватів, часткових розмірів тіла та аналізу компонентів маси тіла. ***Результати.*** За зіставлення показників антропологічного обстеження виявлено, що найбільша довжина та маса тіла, обхват грудної клітини й абсолютна поверхня тіла відзначаються в спортсменок еліти, найменші показники – у досліджуваних II розряду. Із віком і підвищенням кваліфікації тотальні розміри та показники абсолютної та відносної м'язової маси збільшуються, що пов'язано з віковими змінами та впливом заняття греблею в спортсменок. Аналіз компонентів складу маси тіла досліджуваних засвідчив, що зі збільшенням віку та кваліфікації спортсменок

показники жирової маси зменшуються. Також відзначається збільшення обвідних та силовых показників спортсменок. ***Висновки.*** Вивчені морфофункціональні показники досліджуваних різних кваліфікаційних груп, які займаються гребенями на каяках. Виявлено, що з підвищенням кваліфікації відбувається збільшення м'язової й зменшення жирної маси тіла. Відзначено, що найбільшими морфофункціональними показниками володіють спортсмени елітної групи: заслужені майстри спорту та майстри спорту міжнародного класу. Розроблені нами модельні характеристики для спортсменок-байдарочниць, різної кваліфікації від заслужених майстрів спорту до II-го розряду можна використовувати для відбору й спортивної орієнтації в гребі на різних етапах підготовки та контролю динаміки морфофункціонального стану в річному циклі підготовки.

Ключові слова: гребля, байдарка, морфофункціональніпоказники.

Владимир Давыдов, Владимир Шантарович, Дмитрий Пригодич. Характеристика антропологических и силовых показателей спортсменок различной квалификации в гребле на байдарках. ***Актуальность.*** Морфологические особенности человека – один из генетически предопределенных факторов, наиболее полно и наглядно определяющий индивидуальнуюспецифичность, позволяющий оценить возможности человека в том или ином виде спорта. Рекордные достижения демонстрируются именно теми, кто обладает наиболее оптимальными морфофункциональными данными. ***Цель работы*** – исследовать антропологические и силовые показатели спортсменок различной квалификации в гребле на байдарках. ***Материал и методы исследования.*** Всего обследовано 136 спортсменок. Из них высокой квалификации – 57 человек. Возраст испытуемых – от 13 до 26 лет. Комплексное обследование включало антропометрические измерения тотальных, продольных, поперечных размеров тела, диаметров, обхватов, частичных размеров тела и анализ компонентов состава массы тела. ***Результаты.*** При сопоставлении показателей антропологического обследования выявлено, что наибольшая длина и масса тела, обхват грудной клетки и абсолютная поверхность тела отмечается в спортсменок элиты, наименьшие показатели отмечаются у спортсменок II разряда. С возрастом и повышением квалификации тотальные размеры и показатели абсолютной и относительной мышечной массы увеличиваются, что связано с возрастными изменениями и влиянием занятий греблей у спортсменок. Анализ компонентов состава массы тела спортсменок показал, что с повышением возраста и квалификации спортсменок показатели жировой массы уменьшаются. Такжеотмечается увеличение обхватных размеров тела, силовых показателей байдарочниц. ***Выводы.*** Изучаются морфофункциональные показатели спортсменок разных квалификационных групп, занимающихся греблей на байдарках. Выявлено, что с повышением квалификации происходит увеличение мышечной и уменьшение жировой массы. Отмечается, что наибольшими морфофункциональными показателями обладают спортсменки элитной группы: заслуженные мастера спорта и мастера спорта международного класса. Разработанные нами модельные характеристики спортсменок-байдарочниц разной квалификации от заслуженных мастеров спорта до II-го разряда можно использовать для отбора и спортивной ориентации в греблю на различных этапах подготовки и контроля динамики морфофункционального состояния в годичном цикле подготовки.

Ключевые слова: гребля, байдарка, морфофункциональные показатели.

Introduction. Currently, the trainers in selection of perspective rowers mainly rely on pedagogical criteria. They are guided by the rapidity of mastering the technique of rowing, take into account the intensity of the progress of sports results and the levels of the formation of specific physical abilities [2]. These qualities, characteristics and abilities are temporary and cannot significantly affect the prospects of oarsmen in their further sports activities. [1]. The constitution is one of the most important factors, which largely determines success in rowing. The discrepancy between the rates of morphological development and the proper characteristics makes the athletes compensate this shortcoming by forcing the work of other systems of the body [4]. In conditions of competitive activity, when the athlete's body is in the state of maximum stress of all functional systems, such compensation causes additional expenditure of energy, which, in turn, leads to a reduction in its reserve capabilities [3].

Indicators of the morphofunctional status of athletes of various specializations and qualifications are the least studied in sports practice. According to E.G. Martirosov [5], it is not known what requirements the strongest athletes of different specializations should meet; whether there are differences in the selection of criteria and factors that influence the achievement of the same specializations concerning men and women.

Purpose of work was to investigate the anthropological and strength indicators of sportswomen of various skills in rowing kayaks.

Methods and objects of research. 136 athletes were examined. High-qualified athletes (HMS – Honoured Sport Master , MSIG – Master of Sports of International Grade , MS – Master of Sport) were 57 people, CMS were 28 people, I class – 26 people, II class – 25 people. The age of the probationers is 13 to 26.

The complex examination included anthropometric measurements of total, longitudinal, transverse body dimensions, diameters, girths, partial body sizes (Popescu tests), and analysis of the components of the body mass composition (J. Matieka, 1921).

Measurement of longitudinal body sizes was conducted by Martin's anthropometer according to the common method (V. V. Bunak, 1941). Diameters measurement was carried out by big spreading calipers. Straps measurement was led by centimetric tape with accuracy of measurement up to 1 cm. Mass of the body was defined with the help of medical balance with price of division 50 gr. Popesku's Tests include measurement of the hands scope (cm), length of the body sitting with the hands upwards (cm) and length of the body sitting up to 7-cervical vertebra (cm). Handgrip and deadlift dynamometry of both hands was also measured with the help of dynamometer (kg).

According to the results of measurements average sizes of morphofunctional ratings, coefficient of variation were determined. The Student's method was used to determine the difference between the average arithmetic anthropometric characteristics of athletes of different qualifications.

Results and discussion. The analysis of total body sizes of sportswomen-kayakers of different qualification is presented in Table 1.

While comparing the ratings of anthropological test, it was revealed that the largest length and mass of the body, the strap of chest and absolute body surface is noted with the sportswomen of the elite (HMS and MSIC), least ratings are noted concerning sportswomen of the II class.

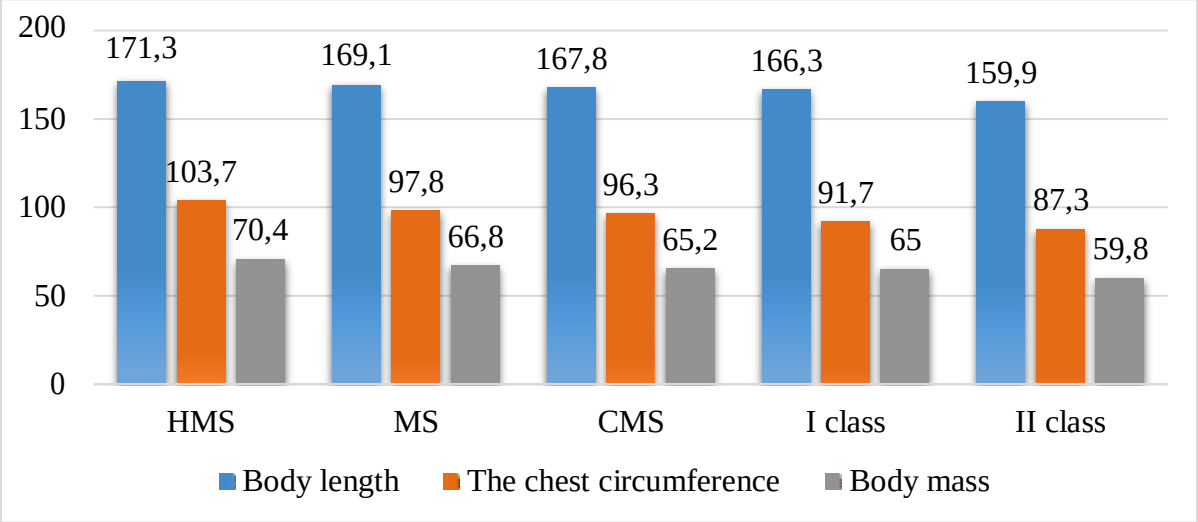
Table 1

Total body size of sportwomen-kayakers, with different qualifications (M±σ)

№	Qualification	n	Length bodies, cm	Mass bodies, kg	Chest circumference, cm	Absolute body surface, m2
1.	HMS, MSIC	27	171,3±5,18*	70,4±6,03*	103,7±3,8*	1,81±0,09*
2.	MS	30	169,1±5,20	66,8±5,11*	97,8±3,42*	1,72±0,08*
3.	CMS	28	167,8±6,03	65,2±5,38	96,3±4,01	1,70±0,09*
4.	I class	26	166,3±5,37*	65,0±6,40	91,7±3,82	1,69±0,07*
5.	II class	25	159,9±5,11*	59,8±6,18*	87,3±2,34*	1,62±0,06

*Notes: t-the Student criterion, * - p<0,05, * - p<0,01.*

The differences are significant in body length between HMS and MSIC and the I – II class (p<0.05), in body weight and chest circumference between the same groups (p<0.05), in absolute body surface between HMS-MSIC and MS, CMS, the I class (p<0.05), HMS and MSIC and the I class (p<0.01) (pic.1).



Pic. 1. *Body length, chest circumference and body mass of sportswomen-kayakers of different qualifications.*

Total sizes are increased with the age and the improvement of professional skills which is connected with the age changes and the influence of rowing practice on sportswomen.

In Table 2 partial sizes of the body (Popesku's tests) are presented and body proportions of sportswomen-kayakers of various qualification.

Table 2

Partial sizes of the body (Popesku's tests) and body proportions of sportswomen-kayakers with different qualifications (M±σ)

Indicators	HMS, MSIC	MS	CMS	I category	II category
n	**27**	**30**	**28**	**26**	**25**
Body length, cm	54,1±3,13*	52,8±2,82	48,9±2,41	46,1±3,01*	44,1±2,34*
Arm length, cm	76,3±2,11	75,0±2,43	73,8±1,36	72,6±2,12	72,0±2,34
Scope of hands, cm	182,3±2,34*	177,1±3,6*	173,4±3,18*	166,4±3,8*	164,3±2,42*
The length of the body sitting with outstretched hands, cm	143,1±3,16*	139,3±2,1*	136,4±2,22	131,4±1,99*	130,1±2,17*
«The operating position of the kayaker»	113,0±3,00*	108,9±3,3*	105,1±3,12	103,0±4,2*	100,1±4,52*

*Notes: t-Student test, * - p<0.05, * - p<0.001.*

The analysis showed that all the presented indicators of partial body size and Popescu tests have a linear relationship, i.e., with the improvement of qualification, these indicators increase, which is due to the natural growth of morphological indicators.

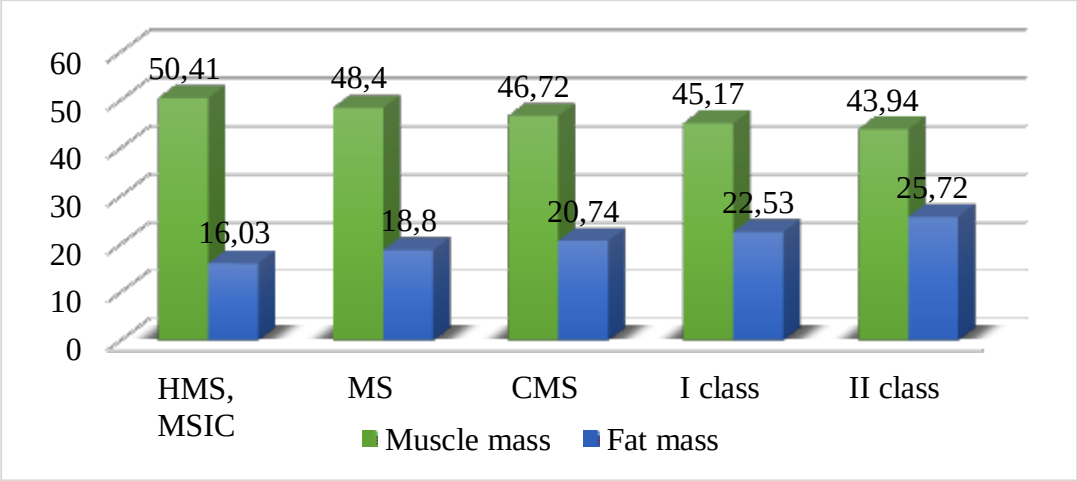
The athletes of elite (HMS and MSIC) have the highest rates of part-body measurements (tests Popescu) and some body proportions, athletes of the II class have the lowest rates.

According to body length differences are authentic between the HMS–MSIC and female athletes of the I and the II class (p<0.05). As for the length of the hands the differences are statistically not authentic, the arm span reliably significantly differs between the HMS–MSIC and CMS (p<0,05), HMS and MSIC – athletes of I and II class (p<0,001) between MS – sportswomen of the I and II class (p<0,05), between CMS and athletes of the II class (p<0,05).

As for the length of the body sitting with outstretched hands the difference is statistically significant between the HMS–MSIC and female athletes of the I and II class (p<0,05), and MS athletes of the II class (p<0,05).

In «working position of the kayaker» the difference is statistically significant between the HMS–MSIC and female athletes of the I and II class (p<0,001), and MS athletes of the II class (p<0,05).

The composition of the components of the weight of athletes in rowing kayaks of various qualifications are presented in pic. 2.

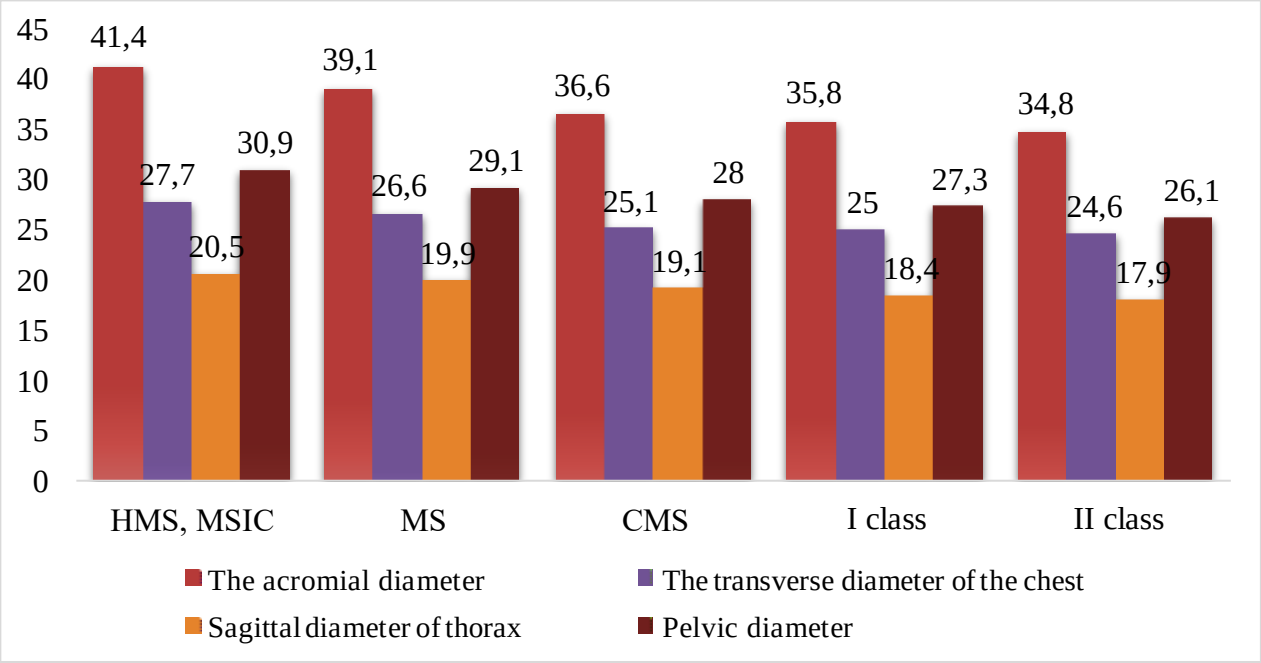


Pic.2 Relative *muscle and fat mass (%) of female athletes of various skill levels who specialize in kayaking*

The analysis of the components of the body weight of athletes involved in rowing kayaks of various qualifications showed that elite athletes have the lowest values of absolute and relative fat mass, athletes of the II class have the largest values of absolute and relative fat mass. Fat mass (kg and %) is reduced with increasing age and qualification of athletes, indicating the impact of rowing on these indicators. Distinctions are in relative fatty mass between HMS sportswomen - MSIC and sportswomen of the I class ($p<0,05$), HMS - MSIC and sportswomen of the II class ($p<0,01$), on absolute HMS - MSIC and the sportswomen of the II class ($p<0,05$).

Female athletes of the elite (HMS and MSIC) have the greatest absolute and relative muscle mass, female athletes of the II class have the lowest rates. The rates of absolute and relative muscle mass increase with the improvement of qualification, which is connected with rowing. Differences are significant in absolute muscle mass between HMS-MSIC and athletes of the II class ($p <0.05$), relative muscular mass between HMS-MSIC and athletes of the I and II class ($p <0,05$) .

Fig. 3 shows the transverse dimensions of the body of athletes of various qualifications involved in kayaking.



Pic.3 *Cross-sectional dimensions of the body (cm) of athletes of various qualifications specializing in rowing kayaks*

Analysis of the transverse dimensions of the body of canoeists of various qualifications showed that the athletes of the elite (HMS and MSIC) have the largest indicators of transverse body dimensions (width of shoulders and pelvis, transverse and sagittal diameter of the chest), and athletes of the II class have the least indicators of transverse body dimensions.

Differences are significant only in terms of the acromial diameter (shoulder width) between HMS and MSIC and female athletes of the II class ($p <0.05$).

The analysis of the body dimensions of canoeists presented in Table 3 showed that elite athletes (HMS and MSIC) have the largest indicators of body size, the lowest rates were registered in athletes of the II class.

The greatest excursion of the chest was noted in masters of sports, the smallest in athletes of the II class.

With the increase in qualification, an increase in body circumference is noted, which is associated with age-related changes and the influence of rowing.

In chest circumference on inspiration, differences are significant between HMS-MSIC and MMR ($p <0,05$), between HMS-MSIC and athletes of the I and II class ($p <0,01$), between MS and athletes of the II class ($p <0,05$).

As for chest circumference as a result of exhalation, differences are significant between HMS-MSIC and athletes of the I and II class ($p <0.01$).

The differences between athletes in a chest excursion are unreliable. The differences in the arm circumference in a strained state are only noticeable between HMS-MSIC and athletes of the II class ($p < 0.05$).

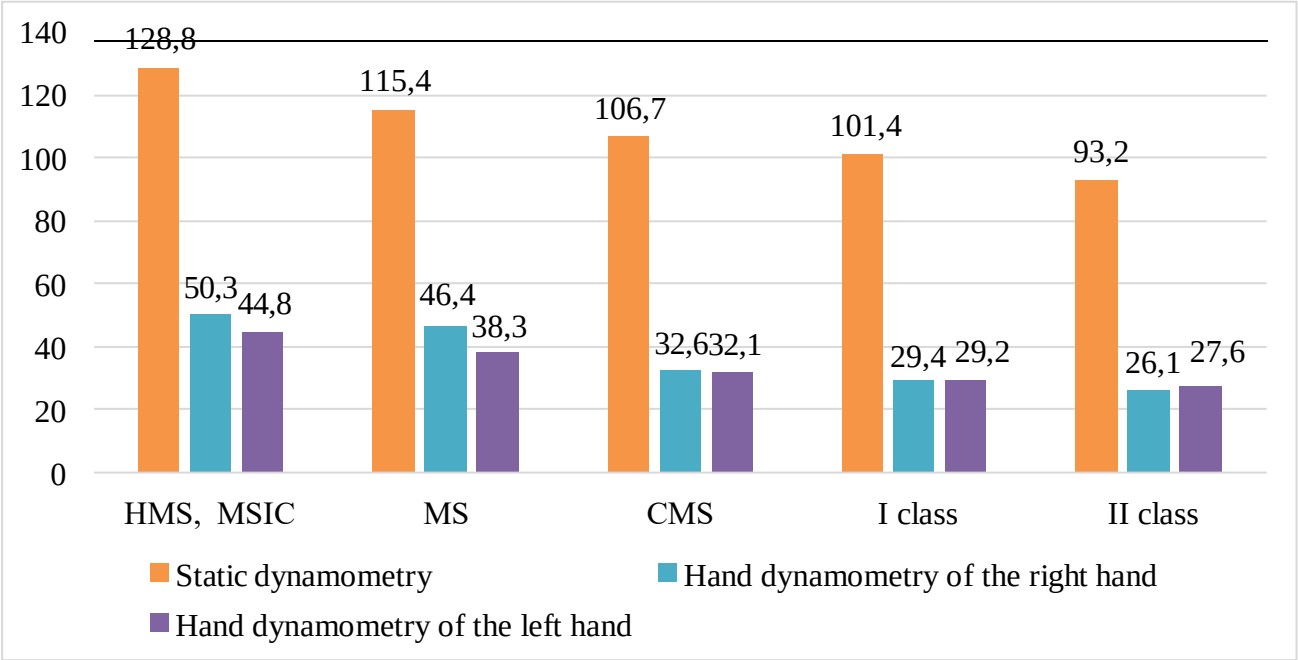
Table 3

The body dimensions of athletes, kayakers of various qualifications (M±σ)

Indicators	HMS, MSIC	MS	CMS	I class	II class
n	**27**	**30**	**28**	**26**	**25**
Chest circumference (inhalation) cm	106,7± 2,72**	98,0±3,23*	96,3±28,0*	94,5±3,07*	90,3±5,51**
Chest circumference (exhalation), cm	99,3±2,90*	88,7±2,80	88,1±2,92	86,6±2,05*	82,9±4,72*
Chest excursion, см	7,4±1,54	9,3±1,46	8,2±1,71	7,9±1,32	65,0±2,34
Girth of the shoulder (tensely), cm	32,6±2,43*	30,4±2,01	29,9±2,17	28,1±2,46	26,8±2,18*
Shoulder circumference (relaxed), cm	30,6±1,18	28,5±2,16	27,9±1,38	25,6±1,73	24,9±2,01
Girth of forearm, cm	28,3±2,46	25,4±3,33	25,2±1,66	23,4±1,90	23,2±1,42
Hip circumference, cm	58,6±2,72*	58,6±3,36	55,2±2,76	51,4±3,17	49,7±3,34*
Chest circumference, cm	36,4±1,76	34,1±1,44	33,5±1,34	32,8±2,17	32,0±1,68

*Notes: t-Student test, * - p<0,05, * - p<0,001.*

As for the forearm, the differences are unreliable. In terms of the hip circumference, the differences are significant between HMS - MSIC and athletes of the I and II class ($p < 0.05$). On the shin circumference the differences are not noticeable ($p > 0.05$). Analysis of the strength indicators of canoeists of various qualifications is presented in Fig. 4.



Pic.4 *Static and carpal dynamometry (kg) of athletes of various qualifications specializing in rowing kayaks*

Analysis of power indicators of kayakers of various qualifications has shown that the greatest indicators of machine and hand dynamometry (right and left) are the hands of athletes of HMS and MSIC, the smallest athletes of the II class.

According to the carina dynamometry (right hand), differences are significant between HMS and MSIC and the athletes of the CMS and of the I and II class (from $p < 0,05$ to $p < 0,001$), between MS and athletes of the I and II class ($p < 0.05$).

By carpal dynamometry (left hand), differences are significant between athletes HMS-MSIC and athletes of the I and II class ($p < 0.05$).

Conclusions. Morfofunctional indicators of athletes of different skill groups engaged in canoeing have been studied.

It was revealed that with an increase in skill there is an increase in muscle and a decrease in fat mass.

It is noted that athletes of elite group HMS and MSIC possess the greatest morfofunctional indicators.

The model characteristics of sportswomen-kayakers, different qualifications from HMS to the II class, developed by us, can be used for selection and sports orientation in rowing at various stages of preparation and control of the dynamics of the morphofunctional state in one year training cycle.

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TECHNOLOGY OF MODELLING THE MOTION KINEMATIC STRUCTURE DURING TECHNICAL PREPARATION OF SKILLED JAVELIN THROWERS

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Abstract

The Urgency of the Research Problem. The development and usage of models are connected with modelling – the process of designing, studying and using models for determination and specification of characteristics and optimization of the process of athletic preparation and participation in competitions. Therefore, elaboration of the technology for modelling the motion kinematic structure within the process of skilled javelin throwers' preparation is inactual scientific topic requiring detailed studying and substantiating. ***Objective and Methods of Study.*** To develop the technology of modelling the motion kinematic structure in the process of technical preparation of skilled javelin throwers. The following methods of study were used in attaining the objective: analysis of scientific and methodical literature and Internet information; video recording; video computer analysis; modelling; methods of mathematical statistics. ***Results.*** Average-group models of biomechanical structure of javelin thrower motor actions, regression models of javelin throwing techniques, prognostic model characteristics of javelin throwing techniques have been developed. And on this basis, the technology of modelling the motion kinematic structure in the process of technical preparation of skilled javelin throwers has been elaborated. ***Conclusions.*** The technology of modelling kinematic and dynamic motion structure in the process of technical preparation of skilled javelin throwers has been elaborated and substantiated. It is focused on the achievement of target sports results on the basis of the developed average-group, regression models and prognostic model characteristics being the foundation for selecting special preparation means maximally close to the competitive activity in form and structure, which contributes to the improvement of technical skills of athletes specialized in javelin throwing.

Key words: average-group models, regression models, prognostic model characteristics.

Олександр Клімашевський, Олена Козлова. Технологія моделювання кінематичної структури рухів у процесі технічної підготовки кваліфікованих метальників списа. ***Актуальність.*** Розробка й використання моделей пов'язані з моделюванням – процесом побудови, вивчення та використання моделей для визначення й уточнення характеристик та оптимізації процесу спортивної підготовки й участі в змаганнях. Тому розробка технології моделювання кінематичної структури рухів у процесі технічної підготовки кваліфікованих метальників списа є актуальним науковим напрямом, що потребує детального вивчення й обґрунтування. ***Мета та методи дослідження.*** Розробити технологію моделювання кінематичної структури рухів у процесі технічної підготовки кваліфікованих метальників списа. Для досягнення мети використовували такі ***методи дослідження:*** аналіз науково-методичної літератури та інформації світової мережі Інтернет; відеозйомка; відеокомп'ютерний аналіз; моделювання; методи математичної статистики. ***Результати роботи.*** Розроблено середньогрупові моделі біомеханічної структури рухових дій метальників списа, регресійні моделі техніки метання списа, прогностичні модельні характеристики техніки метання списа й на цій основі обґрунтовано технологію моделювання кінематичної структури рухів у процесі технічної підготовки кваліфікованих метальників списа. ***Висновки.*** Розроблено й обґрунтовано технологію моделювання кінематичної та динамічної структури рухів у процесі технічної підготовки кваліфікованих метальників списа. Технологія спрямована на досягнення заданих спортивних результатів на основі розроблених середньогрупових, регресійних моделей і прогностичних модельних характеристик, які є основою для вибору засобів спеціальної підготовки, максимально наближених за формою й структурою до змагальної діяльності, що сприяє вдосконаленню технічної майстерності спортсменів, котрі спеціалізуються в метанні списа.

Ключові слова: середньогрупові моделі, регресійні моделі, прогностичні модельні характеристики.

Александр Климашевский, Елена Козлова. Технология моделирования кинематической структуры движений в процессе технической подготовки квалифицированных метателей копья. ***Актуальность темы исследования***. Разработка и использование моделей связанны с моделированием – процессом построения, изучения и использования моделей для определения и уточнения характеристик и оптимизации процесса спортивной подготовки и участия в соревнованиях. Поэтому разработка технологии моделирования кинематической структуры движений в процессе технической подготовки квалифицированных метателей копья

является актуальным научным направлением и требует детального изучения и обоснования. ***Цель и методы исследования*** – разработать технологию моделирования кинематической структуры движений в процессе технической подготовки квалифицированных метателей копья. Для достижения цели использовали следующие ***методы исследования:*** анализ научно-методической литературы и информации мировой сети Интернет; видеосъемка; видеокомпьютерный анализ; моделирование; методы математической статистики. ***Результаты работы***. Разработаны среднегрупповые модели биомеханической структуры двигательных действий метателей копья, регрессионные модели техники метания копья, прогностические модельные характеристики техники метания копья, и на этой основе обоснована технология моделирования кинематической структуры движений в процессе технической подготовки квалифицированных метателей копья. ***Выводы***. Разработана и обоснована технология моделирования кинематической и динамической структуры движений в процессе технической подготовки квалифицированных метателей копья. Технология направлена на достижение заданных спортивных результатов на основе разработанных среднегрупповых, регрессионных моделей и прогностических модельных характеристик, которые являются основанием для выбора средств специальной подготовки, максимально приближенных по форме и структуре к соревновательной деятельности, что способствует совершенствованию технического мастерства спортсменов, специализирующихся в метании копья.

Ключевые слова: среднегрупповые модели, регрессионные модели, прогностические модельные характеристики.

Introduction. Effective management of the training process involves the usage of different models. The model is understood as the pattern (sample, standard) in the broader sense it is any pattern (imaginary or conditional) of a particular object, of the process or phenomenon [4]. The development and the usage of models are related to modeling - the process of constructing, studying and using the models to determine and specify the characteristics and to optimize the process of athletic performance and taking part in competitions [4]. The rates of growth of sportsmanship and sport results are mainly increasing, where the search of simulation techniques is conducted on an objective quantitative basis [6].

Javelin is a speed-force, acyclic exercise, the main purpose of which is to achieve maximum results within established rules. Specific technical requirements that were formed in the process of scientific research, determine performing certain motor actions in the javelin [1]. Nowadays, active work on biomechanical analysis of the javelin technique is performed by federations of countries in association with sports organizations [3, 7-9], but the sports experience shows that improving Ukrainian athletes' technical skills is based on the coach's knowledge, vision and the athlete's feeling about himself, which does not always coincide and complicates the process of sports training sessions. Therefore, in order to improve their work, the technology for modeling the kinematic structure of movements is required; it allows us to rely on quantitative criteria in the process of technical preparation of javelin throwers and represents a system of knowledge about methods (set and sequence of operations, their regimes), the assuring athletes' training session needs through the usage of the technical means. That determines the problem statement of the research.

It is fair to assume that the improvement of qualified athletes' technical skills can be successfully accomplished using widely the theoretical foundations and means of biomechanical modeling of motions taking into consideration the already developed models of different types (intergroup and regression) and predictive model characteristics of the javelin technique which makes it possible to aim at the achievement of the planned sports results.

The research was conducted in accordance with the Consolidated Plan for Research and Development in the field of Physical Culture and Sports for 2016-2020 of the Ministry of Education and Science of Ukraine on the topic "Theoretical and Methodological Basis for Increasing the Technical Skill of Qualified Athletes in Competitive Exercises (for example, track and field athletics, winter sports and cycling); and in accordance with the Consolidated Plan of Research in the Field of Physical Culture and Sports for 2016-2020 of the Ministry of Education and Science of Ukraine on the theme 2.26 «Improvement of the system of sports training and competitive action the number of skilled athletes in the modern conditions of intensification of competitive activities».

The strategic aim of the research is to develop a technology of modeling the kinematic structure of movements in the process of technical training session of qualified javelin throwers.

Data for study and research methods. The following methods of study were used in the obtaining of the objective: analysis of scientific and methodical literature and Internet information; video recording; video analysis; modelling; methods of mathematical statistics.

Study management. At the first stage of the study, the analysis of scientific and methodological literature, analysis and generalization of the experience of practical training in the technical training of athletes was carried out. We studied the kinematics and dynamics criteria of the javelin technique what influence high sport results achievement.

At the second stage, a search experiment was conducted. The kinematics (temporal, spatial and spatio-temporal) characteristics were investigated and the dynamic characteristics of the javelin technique were calculated to obtain complete information on the biomechanical structure of the javelin technique. During the process of the training exercises some videos were taken, using the SONY Digital 8 video camera, which was fixed and the optical axis of the lens remained perpendicular to the vector of the athlete's movement. It was done in order to obtain biomechanical characteristics. All metrological requirements were taken into consideration, that allows minimizing the systematic and chance mistakes which arise due to the specific properties of optics. We calculated the correct scaling of the shooting area to further determination of the real coordinates of points that are required; the correct orientation of the camera in space according to the motion plane. The cameras were cabled at the 20m distance from the subjects. The shooting frequency was 50 shots per second. The probability of error in the video shooting was 5%, so the level of significance is $\alpha = 0.05$.

60 attempts by 20 qualified athletes who are Candidate Masters of Sports title were analyzed. Each athlete has performed 15-20 attempts, but we selected three best attempts of each. The having results of the tests average were 64.2 m, S = 1.2 m, maximum was 66.4 m, and minimum - 59.8 m. Analyzed the results, we can draw the conclusion that the group is indiscrete, it is evidenced by the low value of the coefficient of variation (V = 1.8%), and close to each other average value, mod and median (x = 64,2; Mo = 64,2; Me = 63,8).

The spear flight range was used by us as a basic and systematic indicator that organizes other elements of javelin technology into a single system.

To reveal standard indicators of the javelin technique, we analyzed 20 attempts of 4 highly qualified athletes who have the sports rank of the international master of sport. We recorded all the athletes' attempts at the training sessions, but the five best attempts of each athlete were selected.

The results of javelin attempts made by athletes of high qualification averaged 73.8 m, S = 2.4 m, a maximum value is 76.8 m, and a minimum – 72.4 m. Having analyzed the obtained results, we can state that the group is indiscrete, the low value of the coefficient of variation indicates this (V = 3.2%), as well as close to one another average values of mod and median (x = 73.8; Mo = 73.4; Me = 73.6).

We have received an informed consent from all the participants to take part in the experiment.

The video-computer analysis of the biomechanical structure of motor actions was carried out using the software "BioVideo" developed by I.V. Khmelnitska [5] at the Department of Kinesiology of the National University of Physical Education and Sports of Ukraine, which allows to obtain the kinematic and energy characteristics of human motor actions using visible record. The developed technology of computer monitoring of human motility includes the application programme packages "BioVideo". The source data for the "BioVideo" program are files of shots of one-dimensional video-recording of human motion action in BMP, .DIB, .WMF, .EMF, .GIF, .JPG, .JPEG formats. The Windows XP operating system allows you to obtain these files directly from your local computer's memory device or hardware peripheral or by remote access, using a computer network or an Internet e-mail. "BioVideo" allows to receive biomechanical characteristics of individual biolink, and of the entire body of a person in each frame and in separate stages of motor action. Application software (ASW) "BioVideo" includes four sections:

- construction of models of the human musculoskeletal system (MS): (a 14-segment MS model was used, whose link coordinates according to the geometric characteristics and corresponds to the coordinates of position in the space of human body biolinks, and the starting point - to the coordinates of the centers of the major joints); the section allows to create the iterative models of the human MS;
- determination of the coordinates of points concerning the somatic reference system;
- computation of biomechanical characteristics of motor actions according to the coordinates of the human MS model; the software section capabilities allow to determine the localization of the centers of mass (CM) of biolinks and the general center of mass (GCM) of the human body;
- module of constructing of a biokinematic scheme (BKS) of a human body based on a videogram of motor action with the specification of trajectories of the centers of joints, biolink CM and GCM of the human body.

Statistical analysis. To study the significance of individual indicators of the javelin technique produced by athletes of different qualifications, we conducted a correlation analysis, based on which the close

relationship between the studied indicators was established and the most informative ones were found. Informativeness of indicators of technical readiness was determined by means of averaging of absolute values of coefficients of pair correlation in both groups of athletes. Seven most informative indicators of technical readiness, which had the greatest correlation with the flight range of the spear, were determined.

These indicators were used by us to construct a statistic meangroup model of the kinematic structure of the javelin technique. The built graphical meangroup models allow to identify the main directions of technical training improvement, to establish optimal levels of development of its various parts, as well as the connections and bonds between them among athletes of different qualifications.

The regression models of the javelin technique were developed, which include: dependent explanatory variable (Y) - spear flight distance, independent explanatory variables (xn): the speed, the length of the distance of final speed-up of the missile, the position of the body at the time of gab, the angle of the spear gab, the speed of the athlete's body GCM at the time of the tailend of the final run, the speed of the GCM of the athlete's body at the time of the previous tailend of the run, the duration of the phase reference of the first hurl step in the tailend, the force gradient in the phase reference of the first throw step in the run's tailend.

At the third stage of the research, the construction of the javelin modeling technology in the process of athletes' technical training on the basis of developed model types was developed.

Research results. As a result of the research, a javelin modeling technology was developed (Fig. 1), which allows:

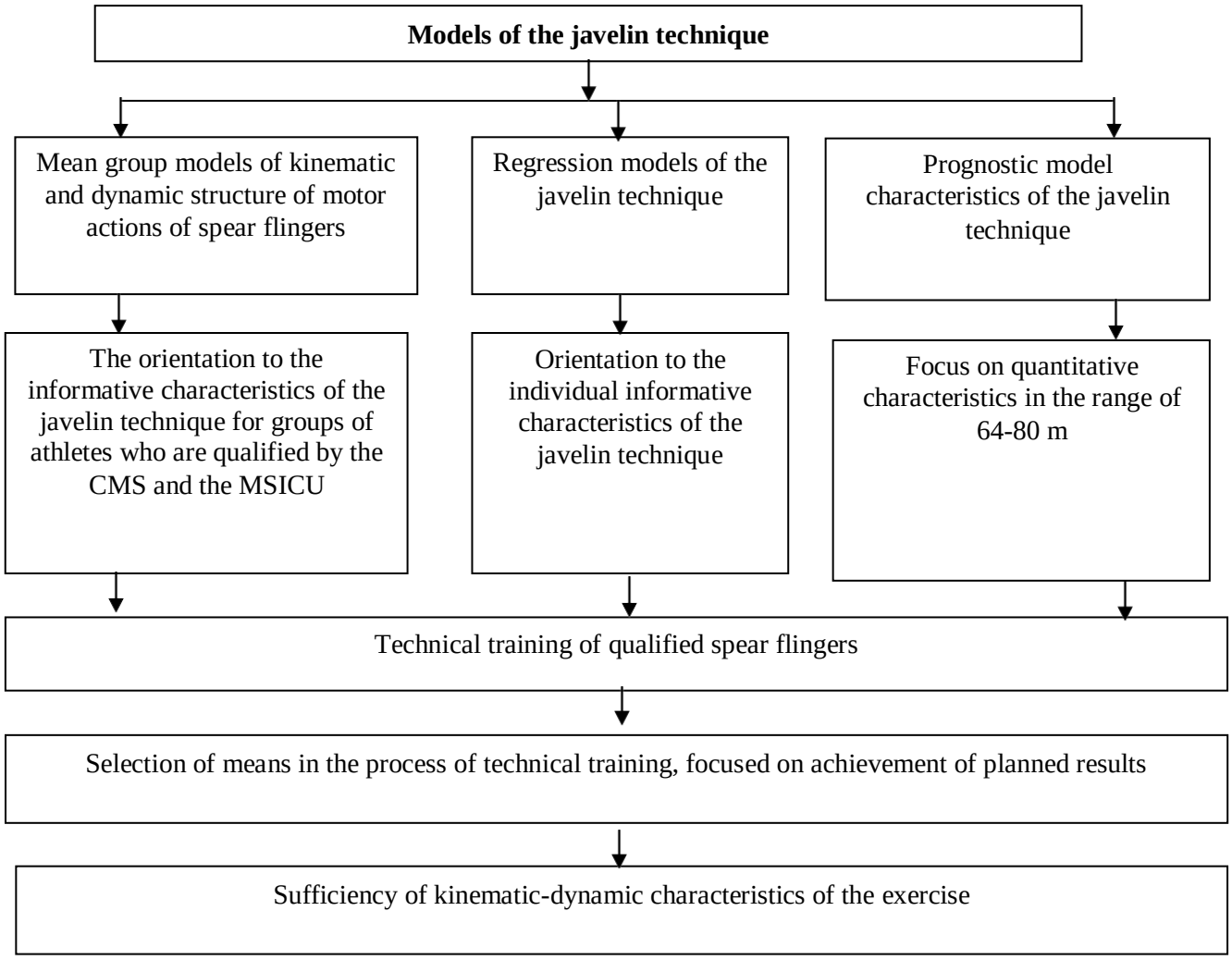

Fig. 1. *Javelin modeling technology in the process of athletes' technical training*

- to predict sport results required for success at various stages of preparation with regard to objective criteria of javelin throwing techniques, obtained in the course of the study; to create a database of competitive activity and special training of athletes;
- to analyze and simulate the characteristics of the technical training of javelin masters influencing the achievement of high sport results;
- to plan training programs based on identified patterns of rational building movements in the javelin, aimed at the achievement of high sport results, qualifications and level of special training;
- to individualize technical training of javelin thrower.

In each of these sections work should include the control of technical preparedness of sportsmen on the basis of the automated processing results.

Graphical mean group models of javelin throwing technique. Orientation to them allows to determine the main directions of the improvement of technical training, to establish the optimal levels of development of its different sides of the athletes, as well as links and correlations between the sportsmen of different qualifications. A model of this type is shown in figure 2.

The regression models of javelin throwing technique. In the course of the study we developed regression models of javelin, shown in table 1.

Developed regression models aimed at predicting a given flying range of the javelin and guide the coach and athlete on individual technical training. The use of these models by coach greatly facilitates the process of the current and operative control, and allows to assess differentially the technical preparedness of athletes specializing in throwing javelin.

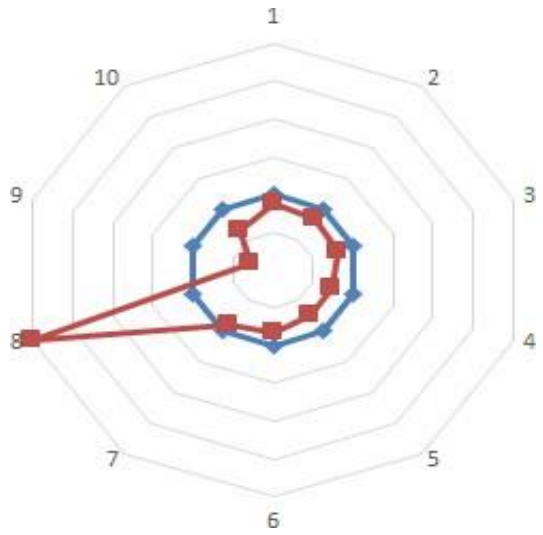

Fig. 2. *A model of the most important biomechanical characteristics of the technique of javelin throwing by athletes of different qualification*

highly qualified athletes
qualified athletes

1 – flying range of a javelin, m;
2 - launching speed of a javelin, $m \cdot s^{-1}$;
3 - the path length of the final acceleration of a javelin, m;
4 - the angle between the torso and the vertical at the launching moment, degrees;
5 - the angle of launching of a javelin, degrees;
6 - speed of general center of mass of the athlete's body at the end of the final part of the run , $m \cdot s^{-1}$;
7 - speed of general center of mass of the athlete's body at the time of the prior final part of the run, $m \cdot s^{-1}$;
8 - duration of the support phase of the first throwing step at the end of the run, s;
9 - gradient force in the support phase of the first throwing step at the end of the run $N \cdot s^{-1}$;
10 - angle of stability at the moment of javelin launching, degrees.

Table 1

Regression models of estimation of qualified javelin throwers' technique

№	Multiple regression equation	Coefficient of multiple regression	Measure of inaccuracy of a model
1	$Y= 1,96+1,141x_1+3,172x_2+0,029x_3+ 0,079x_4+0,0028x_5+ +0,2979x_6+7,23x_7+0,00016x_8$	0,846	1,52
2	$Y=4,12+1,023x_1+4,141x_2+0,298x_3+0,135x_4$	0,809	1, 07

Notes:

Y – flying range of a javelin, m;

x1 – launching speed of a javelin, m•s-1;

x2 – the path length of the final acceleration of a javelin, m;

x3 – the angle between the torso and vertical at the launching moment, degrees; x4 – the angle of launching of a javelin, degrees;

x5 – speed of general center of mass of the athlete's body at the end of the final part of the run, m•s-1;

x6 – speed of general center of mass of the athlete's body at the time of the prior final part of the run, m•s-1;

x7 – duration of the reference phase of the first kekovole step at the end of the run, with−1;

x8 – duration of the support phase of the first throwing step at the end of the run, s;

1 – an expanded regression equation;

2 – regression equation for operational control

Predictive model characteristics of javelin throwing technique. To facilitate practical activities of the trainers, evaluation tables are worked out, including a range of prognostic model characteristics of throwing technique of the javelin to reach the given sport results in the range of 64-80 m in 10 sm. Predictive model characteristics of the technique of javelin throwing for the achievement of given sports results are shown in table 2, where the selected data is provided through 50 sm.

Discussion. Biomechanical researches of the javelin were mainly aimed at studying the biomechanical characteristics of the delivery whip, including the initial speed of its departure, the departure angle, the angle of attack and the height of the release [1; 3]. We have expanded the concept of the technique of throwing the spear based on the identification of informative biomechanical characteristics that affect the performance of competitive activities namely - it is defined that the flying range of the missile depends on its flight speed, the length of the path of final acceleration; angle trunk-vertical at the time of departure; the angle of the lance's departure, the speed of the athlete's common center of mass at the end of the final part of the take-off; the speed of the athlete's common center of mass at the time of the previous final part of the take-off; duration of the supporting phase of the first throw step in the final part of the takeoff; the force gradient in the supporting phase of the first throw step in the final part of the running approach; Angle of stability at the time of projectile launch, which determines the dynamic equilibrium and is an important indicator for improving the technical skill of skilled javelin throwers [2]. These characteristics formed the basis for constructing various types of models, and they became the basis for the development of modeling technology in the process of technical training of qualified athletes.

Conclusions and prospects for further research.

1. Regression models of javelin throwing technique are developed.

In solving the problems of theory and training procedure regression biomechanical models of motor actions are a system-forming factor, which determines the structure and content of the process of improving the technical skill of qualified athletes. They allow to forecast individual variants of technology, focused on achieving the planned performance, significantly facilitate the process of carrying out step-by-step, current and operational control, allow to differentially assess the technical preparedness of qualified javelin throwers.

Table 2

Prognostic models of biomechanical characteristics of throwing spear technique to achieve the given sports results

Spear Range	Speed of departure of a spear	The path length of the final accelera- tion of the projectile	Corner torso vertical at the time of depar- ture	The angle of departure of the spear	The speed of the general body weight center of the athlete at the final end-time part of the running approach	The speed of the general body weight center body of the athlete at the time-end of the preceding running approach	The duration of the supporting phase of the first throw step in the final part of the running approach	The force gradient in the supporting phase of the first throw step in the final part of the running approach	Angle of stability at the time of projectile launch
64	22,7	1,513	25,813	26,813	7,429	6,844	0,060	25512,9	15,631
64,5	22,95	1,531	26,281	27,281	7,507	7,334	0,059	29063,2	16,057
65	23,2	1,550	26,750	27,750	7,585	7,823	0,058	32613,6	16,484
65,5	23,45	1,569	27,219	28,219	7,663	8,313	0,057	36163,9	16,912
66	23,7	1,588	27,688	28,688	7,741	8,803	0,056	39714,3	17,339
66,5	23,95	1,606	28,156	29,156	7,819	9,292	0,055	43264,6	17,767
67	24,2	1,625	28,625	29,625	7,898	9,782	0,054	46815,0	18,194
67,5	24,45	1,644	29,094	30,094	7,976	10,271	0,053	50365,3	18,622
68	24,7	1,663	29,563	30,563	8,054	10,761	0,052	53915,7	19,049
68,5	24,95	1,681	30,031	31,031	8,132	11,251	0,051	57466,0	19,477
69	25,2	1,700	30,500	31,500	8,210	11,740	0,049	61016,4	19,904
69,5	25,45	1,719	30,969	31,969	8,288	12,230	0,048	64566,7	20,332
70	25,7	1,738	31,438	32,438	8,366	12,719	0,047	68117,1	20,759
70,5	25,95	1,756	31,906	32,906	8,444	13,209	0,046	71667,4	21,187
71	26,2	1,775	32,375	33,375	8,523	13,699	0,045	75217,8	21,614
71,5	26,45	1,794	32,844	33,844	8,601	14,188	0,044	78768,1	22,042
72	26,7	1,812	33,313	34,313	8,679	14,678	0,043	82318,5	22,469
72,5	26,95	1,831	33,781	34,781	8,757	15,167	0,042	85868,8	22,897
73	27,2	1,850	34,250	35,250	8,835	15,657	0,041	89419,2	23,324

2. The prognostic model characteristics of the throwing technique of the spear were developed, orienting the athletes' output to the level of given sports results in the range of 64-80m and determine the main vector of the technical skills formation in the system of sports training, allow us to develop ways of practical tasks implementation of pedagogical management of the athlete's technical characteristics, to predict the growth of

sports results, to estimate individual achievement reserves of planned biomechanical indicators of qualified athletes' equipment.

3. The technology of modeling the kinematic and dynamic structure of movements in the process of technical training of qualified javelin throwers has been developed and justified. The technology is aimed at achieving the given sports results on the basis of developed intergroup, regression models and forecasting model characteristics, which are the basis for the selection of special training tools, as close as possible to the form and structure to a competitive intensity exercise that stimulates the perfection of technical skill.

Prospects for further research should be linked to the development of a methodology for the use of training aids in combination with the use of developed technology.

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CONSTRUCTION OF THE TRAINING PROCESS OF ATHLETES IN PREPARATION FOR THE CROSS-SEASON, TAKING INTO ACCOUNT THE CYCLICITY OF CHANGES IN THE FEMALE BODY

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Abstract

Topicality. An important issue of sports training of long – distance runners is the construction of a program of training sessions, micro cycles and mesocycles on the basis of the ovarian-menstrual cycle. ***Objectives of the Work*** – to build the training process of long – distance runners in preparation for the cross-season (at the stage of specialized basic training), taking into account the cyclicity of changes in the female body. ***Methodology of the Work*** – analysis of scientific and methodological literature, content analysis (study of official documents – protocols of competitions, diaries), pedagogical testing for the training process. ***Results of the Work*** – the autumn-winter macro cycle training of long – distance runners for the Ukrainian athletics cross-country championship is presented. Its structure is revealed on the basis of periods, stages and mesocycles. The structure and content of the individual program of racing work of athletes in the basic developing mesocycle based on the phases of the ovarian-menstrual cycle are determined. ***Conclusions.*** It is determined that during the construction of the training process of long – distance runners in preparation for the cross season, it is necessary to consider not only sports specialization, physical and functional preparedness, but also the cyclic changes of the female body.

Key words: long distances running, cross, running work, ovarian-menstrual cycle.

Тетяна Маленюк, Наталія Собко. Побудова тренувального процесу легкоатлеток під час підготовки до кросового сезону з урахуванням циклічності змін жіночого організму. ***Актуальність.*** Важливим питанням спортивної підготовки легкоатлеток-стаєрів є побудова програми тренувальних занять, мікроциклів і мезоциклів на основі фаз овaріально-менструального циклу. ***Завдання роботи*** – побудувати тренувальний процес легкоатлеток-стаєрів під час підготовки до кросового сезону (на етапі спеціалізованої базової підготовки) з урахуванням циклічності змін жіночого організму. ***Методологія проведення роботи*** – аналіз науково-методичної літератури, контент-аналіз (вивчення офіційних документів – протоколів змагань, щоденників), педагогічне тестування за тренувальним процесом. ***Результати роботи.*** Представлено осінньо-зимовий макроцикл підготовки легкоатлеток-стаєрів до чемпіонату України з легкоатлетичного кросу. Розкрито його структуру на основі періодів, етапів і мезоциклів. Проаналізовано структуру й зміст індивідуальної програми бігової роботи легкоатлетки в базовому розвивальному мезоциклі на основі фаз овaріально-менструального циклу (ОМЦ). Виявлено, що спортсменка належить до високого рівня «жіночності» із тривалістю ОМЦ 28 днів. Узгоджено обсяг та інтенсивність тренувального навантаження легкоатлетки з фазами ОМЦ, що пов'язано з високим ступенем їх впливу на показники функціонального стану. Визначено особливості бігової роботи спортсменки відповідно до фаз ОМЦ: у менструальній, овуляторній і передменструальній фазах – відновні мікроцикли з біговим навантаженням аеробного й анаеробно-аеробного характеру, у постменструальній і постовуляторній – ударні мікроцикли з навантаженням анаеробного, анаеробно-аеробного та швидкісно-силового характеру. ***Висновки.*** Визначено, що під час побудови тренувального процесу легкоатлеток-стаєрів під час підготовки до кросового сезону потрібно враховувати не лише спортивну спеціалізацію, фізичну й функціональну підготовленість, але й циклічності змін жіночого організму.

Ключові слова: біг на довгі дистанції, крос, бігова робота, овaріально-менструальний цикл.

Татьяна Маленюк, Наталия Собко. Построение тренировочного процесса легкоатлеток при подготовке к кроссовому сезону с учетом цикличности изменений женского организма. Актуальность. Важным вопросом спортивной подготовки легкоатлеток-стайеров является построение программы тренировочных занятий, микроциклов и мезоциклов на основе овариально-менструального цикла. ***Задание работы*** – построить тренировочный процесс легкоатлеток-стайеров при подготовке к кроссовому сезону (на этапе специализированной базовой подготовки) с учетом изменений женского организма. ***Методология***

проведения работы – анализ научно-методической литературы; контент-анализ (изучение протоколов соревнований, дневников), педагогическое тестирование за ходом тренировочного процесса. ***Результаты работы.*** Представлен осенне-зимний макроцикл подготовки легкоатлеток-стайеров к чемпионату Украины по легкоатлетическому кроссу. Раскрыта его структура на основе периодов, этапов и мезоциклов. Проанализирована структура и содержание индивидуальной программы беговой работы легкоатлетки в базовом развивающем мезоцикле на основе фаз овариально-менструального цикла (ОМЦ). Определяется, что спортсменка принадлежит к высокому уровню «женственности» с длительностью ОМЦ 28 дней. Согласованы объем и интенсивность тренировочной нагрузки легкоатлетки с фазами ОМЦ, что связано с высокой степенью их влияния на показатели функционального состояния. Определены особенности беговой работы спортсменки в соответствии с фазами ОМЦ: в менструальной, овуляторной и постовуляторной фазах – восстановительные микроциклы с беговой нагрузкой аэробного и анаэробно-аэробного характера; в постменструальной и постовуляторной – ударные микроциклы с нагрузкой анаэробного, анаэробно-аэробного и скоростно-силового характера. ***Выводы.*** Установили, что при построении тренировочного процесса легкоатлеток-стайеров во время подготовки к кроссовому сезону необходимо учитывать не только спортивную специализацию, физическую и функциональную подготовленность, но и цикличность изменений женского организма.

Ключевые слова: бег на длинные дистанции, кросс, беговая работа, овариально-менструальный цикл.

Introduction. The main task of long-distance runners training process is to increase the energy capacity of the human body, the ability to maintain a high level of oxygen consumption without the progressive lactate accumulation in the blood [9].

In special literature, the dependence between the achievement of the maximum result in long distance running and the degree of oxygen consumption is proved. As to highly skilled long-distance runners, the sports results are significantly influenced by the cost-effectiveness of running (more effective runner has lower oxygen consumption than less effective one). The achievement of the maximum result in long distance runners is due to the high level of the development of cardiorespiratory endurance, which is associated with the aerobic capabilities of athletes [18].

Therefore V. D. Polishchuk [13] suggests observing the following correlation of work types in the training process of long-distance runners: aerobic − 60%; anaerobic (glycolytic) − 20%; high-speed, speed-strength − 10%; development of flexibility and coordination abilities − 10%.

Scientists [1] claim that in order to increase the scope of long-distance runners' aerobic and anaerobic systems of energy supply, it is necessary to use running exercises of various duration in the training process: from 12 − 20 km to short-term exercises of high intensity from 5 − 25 to 30 − 60 s. The development of special high-speed and speed-strength endurance is carried out with the help of various jogging exercises, their combination, running uphill. For the development of special endurance the exercises which are as close as possible to the competitive activities by their structure and influence on functional systems of the human body are used.

In order to increase the sports results in long-distance running, it is necessary to use basic training means with high intensity (at least 80% of the maximum personal result) in the training process. This approach allows to develop the ability to quickly run the finish line being tired. The best means to improve the ability to runners' quickly finish is the use of Fartlek and pace running [17].

In training long-distance runners, the percentage of means of strength and speed-strength training increases significantly. Therefore, experts [2] have developed and offered to use at work-out sessions of qualified long-distance runners to use the means that contribute to their development.

Scientists [1; 2; 8] unanimously claim that the formation of special preparedness of long-distance runners is carried out with the use of different predominant orientation means, but with the emphasis on running aerobic and anaerobic aerobic means.

One of the important issues in training female long-distance runners is building-up a training sessions program, microcycles and mesocycles on the basis of the ovarian-menstrual cycle (OMC) [4; 6; 10; 15]. Significant contribution to the study of the female athlets training process on the basis of cyclic changes in their hormonal status was made by L. G. Shakhlina [19].

The impact of the biological cycle on the results of female athletes specializing in endurance sports is larger, as compared with female sprinters. Biological rhythms in the female body are closely related to their ability to work [20]. The proper use of the OMC phases, rational selection of means and methods

according to individual characteristics, taking into account the sports specialization of female athletes, are important factors to effectively design training sessions [10].

In their academic papers experts [2; 15; 16] reveal the main issues of building-up the middle- and long-distance runners training sessions at the stage of maximal realization of individual possibilities. Specialists assume that long-distance runners quite often take part in cross-country running competitions. At the same time, the analysis of special literature showed a small number of studies [12] concerning the training process of female long-distance runners in preparation for the cross-country season at the stage of specialized basic training. A preliminary study on the design of the individual training program of running activity of female long-distance runners in preparation for the cross-country season at the basic training stage [11] can be improved by taking into account the cyclicity of changes in the female body. This factor has contributed to the topicality of our research.

Connection of the research with scientific programs, plans, themes. This research is undertaken in accordance with the plan of research work of the Department of Theory and Methodology of Olympic and Professional Sport of the Volodymyr Vynnychenko Central Ukrainian State Pedagogical University (Kropyvnytskyi).

The purpose of the research is to build up a training session for female long-distance runners in preparation for the cross-country season (at the stage of specialized basic training) with relation to the cyclicity of changes in the female body.

Objectives of the research:

1. To analyze the academic and methodological literature on the subject of the research.
2. To build up the autumn-winter macrocycle of female athletes specializing in long-distance running in the process of preparation for the Ukrainian Track-and-Field Cross-Country Championship at the stage of specialized basic training.
3. To reveal the structure and content of individual running activity of female athletes (on the example of the base developing mesocycle) with relation to the cyclicity of changes in the female body.

Material and methods of research. The research was conducted at the Faculty of Physical Education of Volodymyr Vynnychenko Central Ukrainian State Pedagogical University during the 2016−2017 academic year. 4 First-Class female long-distance runners, 19− 20 years old, who are the members of the regional track-and-field team, took part in the research.

The individual program of female athlete's running activity (age - 20, sports qualification – First Class for cross-country running, First Class for long-distance running - 3000 m) in the process of preparation for the autumn-winter cross-country season is presented in this research.

According to the methodological approach, the following methods have been used in the research: **:** the analysis of scientific and methodological literature, content analysis (study of official documents – result cards, diaries), pedagogical testing for the training process.

Research results. Discussion. During the research, we built the autumn-winter macrocycle of long-distance runners training for the Ukrainian Track-and-Field Cross-Country Championship. The following mesocycles have been singled out in the structure of this macrocycle,: 1– retracting (35 days), 2 – basic developing (28 days), 3 – basic stabilizing (28 days), 4 –control-preparatory (14 days), 5 – competitive (35 days) and 6 – transitional (14 days) (Table 1).

When planning the individual program of the athlete's running activity in each mesocycle, we took into consideration her sports specialization, physical and functional preparedness, cyclic changes in the female body, as well as the planned result at the Ukrainian Cross-Country Championship.

The female athlete belongs to a high level of "femininity" with the 28 days of OMC duration. When building up the program for running activity in mesocycles, recommendations of S. H. Vasin were taken into account [4]. The scientist emphasizes the advisability of strict concordance of the volumes of training load with the phases of the OMC, especially for the female athletes with high level of "femininity", which is related to a high degree of OMC influence on the changes in their subjective assessment of the functional status.

In this research, we suggest the structure and content of individual running activity in the basic developing mesocycle of the female athlete's training for the cross-country season during the OMC containing five microcycles corresponding to the phases of the OMC (Table 2).

Table 1

The Structure of the Autumn-Winter Macrocycle of Long-Distance Runners Training for the Ukrainian Track-and-Field Cross-Country Championship

Cycle	Preparatory			Competitive	Transitional
Stages	General preparation	Specific preparation	Pre-competitive	Competitive	Recovery
Mesocycles	Retracting	Basic developing / Basic stabilizing	Control-preparatory	Competitive	Recovery

The results of our research supplement the data of V. D. Yeroshchev [7], who claims that in the 1st, 3rd and 5th phases of the OMC, recovery microcycles with running load of aerobic and anaerobic-aerobic character should be planned, while in the 2nd and 4th – impact microcycles with a running load of anaerobic and speed-strength character.

Table 2

The Structure and Content of Running Activity in the Basic Developing Mesocycle

Days	**Content of training sessions**
1	**2**
Retracting microcycle (Phase I – menstrual)	
1st	Cross – 20 min (HB 140 bpm^{-1})
2nd	Run 4x200 after 4 min rest (80 %)
3rd	Run 5-6 km slowly
4th	Run 150x200x300x200 x150 (80 %)
5th	Fartlek 5-6 km (acceleration is in general 1 km)
Impact microcycle (Phase II – postmenstrual)	
6th	Cross – 20 min (HB 150 bpm^{-1})
7th	Run 4x400 m after 7 min rest (90 %)
8th	Cross – 20 min (HB 150 bpm^{-1})
9th	Run 4x300 m after 5 min rest (85 %)
10th	Run 5-6 km slowly
11th	Run 2 series 4x100 m after 3-2-1 min rest (90 %)
12th	Cross – 30 min (HB 150 bmp^{-1})
Retracting microcycle (Phase III – ovulatory)	
13th	Run 8x100 m after 3 min rest (80 %)
14th	Cross – 20 min (HB 140 bpm^{-1})

End of table 2

1	2
15th	Run 3x800 m after 7 min rest (75 %)
Impact microcycle (Phase IV – luteal)	
16th	Cross-country race 20 min (HB 160 bpm^{-1})
17th	Run 4x400 m after 5 min rest (85 %)
18th	Cross – 30 min (HB 150-160 bpm^{-1})
19th	Run 2x1000 m after 9 min rest (85 %)
20th	Run 5-6 km slowly
21st	Run 2 series 4x100 m after 3-2-1 min rest (90 %)
22nd	Cross – 30 min (HB 150-160 bpm^{-1})
23rd	Run 2 series 4x100 m after 1-2-3 min rest (85 %)
24th	Long run 7-8 km (to 150 bpm^{-1})
Retracting microcycle (Phase V – premenstrual)	
25th	Run 4-5 km at a medium pace
26th	Cross 10-12 km (140-160 bpm^{-1})
27th	Run 5-6 km slowly
28th	Day-off

When planning the workload during the mesocycle we followed the recommendations of V. R. Budzyn [3], Y. P. Vrublovskyi [5], O. B. Rody [14] and T. V. Samolenko [15], who emphasize that the maximum workload should be performed in the luteal and postmenstrual phases, and in the premenstrual and menstrual phases the workload must be reduced.

The analysis of specialized literature and trainers' experience has not allowed us to reach a unanimous decision on the necessity and appropriateness of training sessions for female athletes in the menstrual phase. However, we were planning training sessions for the female athlete in the first phase of OMC according to the results of Y. V. Hornostaieva research [6], who asserts that 81.6% of female athletes training in the menstrual phase have improved their sports results. Y. P. Vrublovskyi [5] also points out that 78.5% of trainers consider training sessions in the 1st phase of OMC mandatory.

According to the undertaken researches [10], luteal and postmenstrual phases are chosen for the development of speed-strength, speed, coordination abilities and special endurance. It is appropriate to use a supportive exercise mode in the premenstrual phase, which is also reflected in the mesocycle complied by us.

Conclusions

1. The analysis of special literature proves the necessity of taking into consideration sports specialization, physical and functional preparedness and cyclicity of changes in the female body while building up the training process of female long-distance runners, preparing for a cross-country season at the stage of specialized basic training.

2. The autumn-winter macrocycle of training female long-distance runners for the Ukrainian Track-and-Field Cross-Country Championship is presented, taking into account the basic theoretical and methodological principles of building the training process. The structure of macrocycle contains periods, stages, and mesocycles.

3. The structure and content of individual running work are revealed through the example of a basic developing mesocycle of the female athlete training for the cross-country season. The peculiarities of running activity with relation to the phases of the OMC are defined: in the menstrual, ovulatory and

premenstrual phases − recovery microcycles with loading of aerobic and anaerobic-aerobic character, while in postmenstrual and luteal – impact microcycles with a load of anaerobic, anaerobic-aerobic and speed-strength character.

Further research is suggested to find out individual characteristics of the reaction of female athletes' body throughout all phases of the OMC and to determine, according to this, the volume and nature of the performed workload.

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PERFORMANCE RESULTS OF QUALIFIED FEMALE ATHLETES OF UKRAINE AT MAJOR INTERNATIONAL COMPETITIONS IN BOXING

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Abstract

Significant contribution of Ukrainian athletes to the establishment of the authority of Ukraine is recognized by numerous physical culture and sports experts. Considerable segment of training and competitive activity of the athletes with lower qualification practicing various kinds of sport remains out of scholars' attention. Most mass media and other information sources place special emphasis on the achievements gained at Summer and Winter Olympics mainly. At the same time, the performance effectiveness of Ukrainian qualified female athletes of different age categories at major boxing international competitions has not been investigated. ***Objective.*** To generalize the results of Ukrainian athletes performance at the international competitions in boxing during the period from 2010 till 2017. ***Methods of the Research.*** Theoretical analysis and generalization of the scientific and methodological publications, documentary analysis, content analysis. ***The Research Management*** included the study of the competitions records, the information content of the sites of official organization of Ukraine and the world, which enhance the development of boxing and highlight major sports events; submission of an official request to the Boxing Federation of Ukraine concerning the latest issues of the sport in question development. It was found out that the participation of Ukrainian qualified female boxers in major boxing contests started in 2010. Throughout this period the "female juniors" and "youth" competitions have been held jointly. Ukrainian qualified female athletes became the participants of 2010−2017 World and European Championships. The competitive practice of Ukrainian female athletes indicated their systematic participation 1 to 2 times per year. Better performance effectiveness was observed at the European Championships (9 to 18 awards of various rates). Somewhat poorer achievements were gained by Ukrainian qualified female boxers at the World Championships (1 to 8 awards of various rates). The dynamics of performance effectiveness of qualified female athletes at major international competitions pointed to greater achievements in 2011−2012 and 2015−2016, indicating the wave-like trend in the development of female boxing in Ukraine.

Key words: female athletes, boxing, achievements, major competitions.

Артур Палатний. Результати кваліфікованих спортсменок України на провіднихміжнародних змаганнях із боксу. Вагомий внесок українських спортсменів у становлення авторитету України визнаний багатьма фахівцями сфери фізичної культури та спорту. Поза увагою науковців залишається значний сегмент підготовки й змагальної практики спортсменів у різних видах спорту на нижчих кваліфікаційних рівнях. Основні акценти в більшості інформаційних джерелах зроблені на досягненнях на Іграх Олімпіад із зимових Олімпійських іграх.

Разом із тим вивчення питань результативності виступів кваліфікованих спортсменок України різних вікових категорій на провідних міжнародних змаганнях із боксу фахівцями не проводилося. ***Мета статті*** – узагальнити результати виступів спортсменок України на провідних міжнародних змаганнях із боксу впродовж 2010−2017 рр. Використано такі ***методи:*** теоретичний аналіз й узагальнення даних наукової та методичної літератури, аналіз документальних матеріалів, контент-аналіз. ***Організація дослідження*** передбачала вивчення протоколів змагань, інформаційного наповнення сайтів офіційних організацій України та світу, які забезпечують розвиток боксу й висвітлюють основні події; підготовку офіційного запиту на Федерацію боксу України щодо основних моментів розвитку виду спорту за останній відтинок часу. Установлено, що участь кваліфікованих спортсменок України в провідних змаганнях із боксу розпочата з 2010 р. Упродовж усього періоду змагання в категоріях «юніорки» й «молодь» проводилися спільно. Кваліфіковані спортсменки України долучалися до змагань рівня чемпіонату світу і Європи упродовж 2010−2017 рр. Організація змагальної практики для українських спортсменок вказала на систематичну участь 1−2 рази на рік. Більшу результативність відзначено на змаганнях чемпіонату Європи (9−18 нагород різного ґатунку). Дещо менші досягнення кваліфікованих спортсменок на чемпіонатах світу (1−8 нагород різного ґатунку). Динаміка результативності участі кваліфікованих спортсменок на провідних міжнародних змаганнях із боксу вказала на більші досягнення у 2011−2012 і 2015−2016 рр., що свідчить про хвилеподібність тенденцій із розвитку жіночого боксу в Україні.

Ключові слова: спортсменки, бокс, результати, провідні, змагання.

Артур Палатный. Результаты квалифицированных спортсменок Украины на ведущих международных соревнованиях по боксу. Большой вклад украинских спортсменов в становление авторитета Украины признан многими специалистами сферы физической культуры и спорта. Без внимания ученых остается значительный сегмент подготовки и соревновательной практики спортсменов в различных видах спорта на низших квалификационных уровнях. Основные акценты в большинстве информационных источников сделаны на достижениях на Играх Олимпиад и зимних Олимпийских играх. Вместе с тем изучение вопросов результативности выступлений квалифицированных спортсменок Украины разных возрастных категорий на ведущих международных соревнованиях по боксу специалистами не проводилось. ***Цель статьи*** – обобщить результаты выступлений спортсменок Украины на ведущих международных соревнованиях по боксу в течение 2010–2017 гг. Использованы такие ***методы:*** теоретический анализ и обобщение данных научной и методической литературы, анализ документальных материалов, контент анализ. ***Организация исследования*** предусматривала изучение протоколов соревнований, информационного наполнения сайтов официальных организаций Украины и мира, обеспечивающих развитие бокса и освещают основные события; подготовку официального запроса на Федерацию бокса Украины по основным моментам развития вида спорта за последний отрезок времени. Установлено, что участие квалифицированных спортсменок Украины в ведущих соревнованиях по боксу началось с 2010 г. В течение всего периода соревнования в категориях «юниорки» и «молодежь» проводились совместно. Квалифицированные спортсменки Украины приобщались к соревнованиям уровня чемпионата мира и Европы в течение 2010–2017 гг. Организация соревновательной практики для украинских спортсменок указала на систематическую участие 1–2 раза в год. Большая результативность отмечается на соревнованиях чемпионата Европы (9–18 наград различного достоинства). Несколько меньшие достижения квалифицированных спортсменок на Чемпионатах мира (1–8 наград различного достоинства). Динамика результативности участия квалифицированных спортсменок на ведущих международных соревнованиях по боксу указала на лучшие достижения в 2011–2012 и 2015–2016 годах, что свидетельствует о волнообразность тенденций по развитию женского бокса в Украине.

Ключевые слова: спортсменки, бокс, результаты, ведущие соревнования.

Introduction. The social significance of sport is indisputable. Significant contribution of Ukrainian athletes to the establishment of the prestige of Ukraine is recognized by numerous physical culture and sports experts [1; 3; 6; 9].

However, the considerable segment of training and competitive activity of athletes in various sports has received little scholars attention, since most mass media place special emphasis on the achievements made at the Olympiads and Winter Olympic Games [4; 7; 8; 10; 12].

One of the most significant in representing individual sports is a group of Olympic martial arts. Today, it consists of seven sports. Each of them has a certain number of weight classes and types of competitions [1; 2; 6; 9; 11]. Focusing our attention on the problem of the formation and development of martial arts in Ukraine, in this part of the research we would like to determine dynamics of the participation and achievements of Ukrainian qualified female athletes at major international boxing competitions.

The scientific achievements of domestic and foreign specialists in generalizing information on the development of certain combat sports are essentially limited. This scientific and scientific popular information on the achievements of Ukrainian boxers at the Olympic Games is partly highlighted [2; 3; 4; 6; 8]. However, no research has been undertaken to study the problem of performance effectiveness of Ukrainian qualified female athletes of different age categories at major international boxing competitions [1; 6; 9]. The reasons for the low achievements of Ukrainian women's boxing team alongside with the overall history of women's boxing and some aspects related to the peculiarities of the competitive activity of female boxers are defined by Hasanova S. [2] and Lisitsyn V. [4]. However, there is no opportunity to analyze general approaches to the development of boxing in Ukraine due to the lack of objective data on the participation and results of our qualified athletes in the leading competitions. That is why these scientific tasks are relevant.

The purpose of the research: to summarize the results of Ukrainian female athletes performance at the international boxing competitions in the period from 2010 till 2017.

The material and methods of the research. The following methods are used: theoretical analysis of the scientific and methodological publications, documentary analysis, content analysis. The research procedure included the study of the competitions records, the sites of official Ukrainian and World organizations, which enhance the development of boxing and highlight major sports events; submission of the official request to the Boxing Federation of Ukraine concerning the latest issues of the sport in question development.

Research results. Discussion. The system of children and youth sport is going through a bad stretch. Many experts point to an extremely wide range of problems that reduce the effectiveness of solving issues at this level [6, 7, 10, 12]. However, the achievements of Ukrainian athletes maintain the interest of society, including children and youth in some of the most prominent sports. One of them is boxing. While performing a number of scientific tasks, we considered it necessary to analyze the achievements of Ukrainian female boxers at the qualification levels preceding national teams.

The performance results of Ukrainian female athletes at the major official international boxing competitions should be analyzed from 2010. According to the information received, this period (2010-2017) is the most accessible in official sources. This provides the basis for qualitative systematization and generalization of data (table) [5, 11].

Table 1

The performance results of qualified Ukrainian female athletes at major International Boxing Competitions in the period from 2010 till 2017

№	The competition	Year	Category	I	II	III	awards in category	Total number of awards
1.	European Championship	2010	juniors	1	3	4	8	10
2.			youth	–	1	1	2	
3.	World Championship	2011	juniors	–	–	–	–	6
4.			youth	1	1	4	6	
5.	European Championship	2011	juniors	3	4	4	11	18
6.			youth	1	1	5	7	
7.	European Championship	2012	juniors	2	–	3	5	12
8.			youth	–	3	4	7	
9.	World Championship	2013	juniors	1	–	3	4	8
10.			youth	–	2	2	4	
11.	World Championship	2015	juniors	–	2	2	4	6
12.			youth	–	1	1	2	
13.	European Championship	2015	juniors	1	3	2	6	8
14.			youth	–	2	–	2	
15.	European Championship	2016	juniors	1	2	2	5	10
16.			youth	–	3	2	5	
17.	European Championship	2017	juniors	1	1	2	4	9
18.			youth	–	2	3	5	
19.	World Championship	2017	juniors	–	–	–	–	1
20.			youth	–	–	1	1	

As can be seen from the data, in 2010, our country's representatives were first represented at the European Championships among women-juniors and women-youth (Calais, France). The first boxing match should be considered successful enough. In general, the team took, the fourth place under the guidance of the chief coach Hajioglo M. Among women-youth, Yakovleva Diana took second place (Odessa Oblast, weight category (w. c.) 54 kg) and Vinnik Oksana took third place (Ivano-Frankivsk Oblast, w. c. 69 kg). In other age groups ("women-juniors") the results were much higher. One female athlete managed to win a gold medal (Malovana Marina, Cherkassy Oblast, w. c. 57 kg). Three other athletes took second places in their categories (Mikhalchuk Oksana, Khmelnytsky Oblast, w. c. 48kg; Naidich Marina, Kiev, w. c. 52kg; Virt Victoria, Lviv Oblast, w. c. 54kg). The third places at this tournament were won by Pesteruk Victoria (Khmelnytsky Oblast, w. c. 46 kg), Voroblevska Galina (Lviv Oblast, w. c. 60 kg), Gapyak Inna (Ivano-Frankivsk Oblast, w. c. 66 kg) and Nazarova Victoria (Odessa Oblast, w. c. 70 kg).

The 2011 competitive season was successful for women-youth and women-juniors. That year, the main starts for them were the World Championship (Antalya, Turkey) and the European Championship (Orenburg,

Russia). The chief team coach Daniliv S. defined a significant number of athletes for these competitions. At the more competitive and higher in rank World Championship our female athletes showed quite high results in the category "women-youth". Fourth team place was taken among 22 participating countries (103 female athletes). The most successful those competitions were for Virt Victoria (Lviv Oblast, w. c. 54 kg) − first place; Vinnik Iryna (Ivano-Frankivsk Oblast, w. c. + 80 kg) − second place; Ohota Anna (Poltava Oblast, w. c. 50 kg), Malovana Marina (Cherkassy Oblast, w. c. 57 kg), Us Olesia (Cherkassy Oblast, w. c. 63 kg), Sayushkina Yelizaveta (Kiev, w. c. 80 kg) − third places.

Unfortunately, in the group "women-juniors" our representatives failed to win any prize among 37 countries (135 participants) which, on the one hand, points to the growing popularity of boxing among women in the world already in the early age categories, and on the other hand − to the existence of significant problems in the preparation and involvement of young female athletes in Ukraine.

At the same time, Ukrainian representatives managed to take the second team place at the European Championship, with enough competition (17 countries and 82 athletes). Successful performances of our female athletes provided a significant amount of the medals. The first place: among women-juniors − Virt Victoria (Lviv Oblast, w. c. 54 kg), Voroblevska Galina (Mykolaiv Oblast, w. c. 57 kg), Vinnik Iryna (Ivano-Frankivsk Oblast, w. c. 80 kg); among women-youth − Felonenko Ilona (Zaporizhya Oblast, w. c. 54 kg). The second place: among women-juniors − Ohota Anna (Cherkassy Oblast, w. c. 50 kg), Malovana Marina (Cherkassy Oblast, w. c. 57 kg), Nazarova Victoria (Odessa Oblast, w. c. 70 kg), Sayushkina Elizabeth (Kiev, w. c. 80 kg); among women-youth − Maximiv Mariana (Ivano-Frankivsk region, w. c. 48 kg). The third place: among women-junior - Kovalchuk Elena (Khmelnytsky Oblast, w. c. 51 kg), Tertichna Asya (Zaporizhya Oblast, w. c. 60 kg), Raga Oksana (Khmelnytskyi Oblast, w. c. 64 kg), Tarasyuk Natalia (Volyn Oblast, w. c. 75 kg); among women-youth − Plotnytska Inna (Nikolaev Oblast, w. c. 46 kg), Naidich Marina (Kiev, w. c. 52kg), Lobanova Veronika (Mykolaiv Oblast, w. c. 60kg), Gapeshyna Olena (Crimea, w. c. 63 kg), Lutchak Ivanna (Ivano-Frankivsk Oblast, w. c. 75 kg).

In 2012 the competitions among female athletes in categories "youth" and "juniors" were held in Vladislavovo (Poland), European Championship. With very successful performances, fourth and fifth places among "youth" and third place among "juniors", our athletes competed with 17 countries (81 participants) and 16 countries (80 participants) under the guidance of the chief coach Daniliv S. I.

The achievement of female athletes' team among "youth" was provided by the performances of Vasilevska Svetlana (Kharkiv Oblast, w. c. 48kg), Malovana Marina (Cherkassy Oblast, w. c. 57 kg), Borutsa Mariia (Khmelnytsky Oblast, w. c. 75kg), who took second places and Naidich Marina (Kiev, w. c. 51 kg), Sokolovska Anastasia (Rivne Oblast, w. c. 69 kg), Lutchak Ivanna (Ivano-Frankivsk Oblast, w. c. 81 kg), Kapsha Olena (Cherkassy Oblast, w. c. + 81 kg), who took third places in their weight categories, respectively.

The national team of Ukraine earned a number of medals due to the performances of women-juniors: Ohota Ganna (Poltava Oblast, w. c. 48 kg) and Vinnik Iryna (Ivano-Frankivsk Oblast, w. c. + 80 kg) – first places; Plosnitska Inna (Mykolaiv Oblast, w. c. 50 kg), Manchak Valeria (Kharkiv Oblast, w. c. 66 kg), Sayushkina Yelizaveta (Kiev, w. c. 80kg) − third places.

In 2013 the representatives of Ukraine participated at the World Championship in categories "women-juniors" and "women-youth" (Albena, Bulgaria). In the first age group, 30 countries (150 participants) were represented, and the second − 29 countries (149 participants). The achievements of our female athletes made it possible to take the sixth and eighth places respectively. Under the guidance of the chief coach Daniliv S. I. our female athletes showed high results in the category "women-juniors": Bondarenko Angelina (Kiev, w. c. 54 kg) – first place, and Shakshui Veronika (Kharkiv Oblast, w. c. 46 kg), Rus`kih Irina (Donetsk Oblast, w. c. 52 kg), Yevgrafova Yuliia (Kharkiv Oblast, w. c. 75 kg) – third places. In the category "women-youth" our female athletes also showed high results: Ohotna Ganna (Poltava Oblast, w. c. 48 kg), Vinnik Iryna (Ivano-Frankivsk Oblast, w. c. + 81 kg) − second places and Virt Victoria (Lviv Oblast, w. c. 54 kg), Lutchak Ivanna (Ivano-Frankivsk Oblast, w. c. 81 kg) – third places.

In 2015 we observe, on the one hand, the stability of the performance results of the female junior boxers and, on the other hand, a certain decrease in the performance of the female athletes in the category "youth". First, let's have a look at the results of female junior boxers. That year Ukrainian female boxers took part in the World Championship (Tai Bay, Taiwan). Among 29 countries represented by 133 participants our female athletes took the sixth team place under the guidance of the chief coach Daniliv S. I. These were Rogova Katerina (Chernihiv Oblast, w. c. 50 kg) and Mahno Karolina (Chernihiv Oblast, w. c. 75 kg), who took second places; Shpaniuk Anastasia (Chernigov Oblast, w. c. 63 kg) and Dyaduk

Yuliia (Volyn Oblast, w. c. + 80 kg) − third places. Participation in the European Championship (Kesthey, Hungary) was planned for this age category. In these competitions the representatives of Ukraine also won a number of awards: Rogova Katerina (Chernihiv Oblast, w. c. 50 kg), who took the first place; Voznyak Olga (Volyn Oblast, w. c. 48 kg), Mahno Karolina (Chernihiv Oblast, w. c. 75 kg), Dyaduk Yuliia (Volyn Oblast, w. c. + 80 kg) − second places; Nedilko Sofia (Volyn Oblast, w. c. 52 kg), Kharitonyuk Oleksandra (Kharkiv Oblast, w. c. 60 kg) − third places .

Among the representatives of Ukraine in the age group "youth" that year's achievements are lower. Under the guidance of the chief coach Daniliv S. I. Ukrainian female athletes of the "youth" category became the seventh among 36 countries (164 participants) at the World Championship (Tai Bay, Taiwan). Only two female boxers managed to show high results. Second place in her weight category was taken by Bondarenko Angelina (Kiev, w. c. 57kg) and the third − by Stoyko Juliia (Kiev, w. c. 69 kg). The same number of medals was earned at the European Championship. Two Ukrainian female athletes took second place in their weight categories, namely Demyanenko Yuliia (Chernihiv Oblast, w. c. 48 kg) and Manchak Valeriya (Kiev, w. c. 54 kg).

In 2016 performance results of Ukrainian female boxers were high enough in both categories. At the European Championship (Ordu, Turkey) the representatives of Ukraine took the third and fourth team places in these categories respectively. The analysis of the personal composition of athletes who received awards under the guidance of the chief coach Daniliv S. I. indicated the groups of athletes who took second places (Voronina Karina, Dnipropetrovsk Oblast, w. c. 54 kg; Cherednichenko Mariia, Kharkiv Oblast, w. c. 57 kg; Rogova Katerina, Chernihiv Oblast, w. c. 51 kg ; Kozinska Victoria, Dnipropetrovsk Oblast, w. c. 66 kg; Mahno Karolina, Chernihiv Oblast, w. c. 75 kg), and third places (Pasichna Mariia, Ivano-Frankivsk Oblast, w. c. 60 kg; Shpaniuk Anastasiia,Cherkassy Oblast, w. c. 75 kg, Stoiko Yuliia, Kyiv, w. c. 69kg; Lovchynska Mariia, Kyiv Oblast, w. c. + 80kg; Korets Veronika, Chernihiv Oblast, w. c. 63 kg; Lisinska Anastasiia, Khmelnytsky Oblast, w. c. 52 kg; Novosad Sabina, Khmelnytsky Oblast, w. c. 50 kg) in their weight categories. In addition there is one more victory won by Glushchenko Aliona (Kharkiv Oblast, w. c. 80 kg).

In 2017 the female boxers from Ukraine completed the European Championship in categories "youth" and "juniors" (c. Sofia, Bulgaria) at one level, taking sixth team places. All in all 24 countries took part in the competition. Under the guidance of the chief coach Daniliv S. I. following Ukrainian junior female boxers showed high performance results: Kozinska Victoria (Dnipropetrovsk Oblast, first place, w. c. 70 kg), Krivonis Mariia (Ivano-Frankivsk Oblast, second place, w. c. + 80 kg), Korets Veronika (Chernihiv Oblast, third place, w. c. 53 kg), Selitrennikova Tetyana (Volyn Oblast, third place, w. c. 80 kg). Besides them, the following Ukrainian athletes won in the category "youth": Lisinska Anastasiia (Khmelnytsky Oblast, second place, w. c. 51kg), Mahno Karolina (Chernihiv Oblast, second place, w. c. 75kg), Rogova Katerina (Chernihiv Oblast, third place, w. c. 54 kg), Sliusar Elizaveta (Poltava Oblast, third place, w. c. 81kg), Lovchynska Mariia (Kyiv Oblast, third place, w. c. +81 kg). However, at the World Championship among women-youth (Guwahati, India), out of 31 countries, 160 participants, only Sliusar Elizaveta took sixteenth place (Poltava Oblast, third place, w. c. 81kg).

Conclusions and perspectives of further research. The qualified female athletes of Ukraine has been taking part at the major boxing competitions since 2010. Throughout this period the female "juniors" and "youth" competitions have been held jointly. Ukrainian qualified female athletes became the participants of 2010−2017 World and European Championships. The competitive practice of Ukrainian female athletes indicated their systematic participation 1 to 2 times per year.

Better performance effectiveness was observed at the European Championships (9 to 18 awards of various rates). Somewhat poorer achievements were gained by Ukrainian qualified female boxers at the World Championships (1 to 8 awards of various rates).

The dynamics of performance effectiveness of qualified female athletes at major international competitions pointed to greater achievements in 2011−2012 and 2015−2016, indicating the wave-like trends in the development of female boxing in Ukraine.

Further research is needed to elucidate the basic factors of the wave-like performance results of Ukrainian female athletes at boxing competitions and to take them into consideration in the training process.

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PROGRAM OF FORMATION OF RHYTHM PERCEPTION IN RHYTHMIC GYMNASTICS AT THE STAGE OF INITIAL TRAINING.

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Abstract

The article describes the features of the program of formation the rhythm perception at athletes who are engaged in rhythmic gymnastics at the stage of initial training. In the article we showed the content and gradualiti of the complication, exercises that contribute to the formation of a sense of rhythm, as well as the features of the combination of the study of elements based on the similarity of the rhythm of their execution. The application of means and methods of forming a rhythm perception (in particular, the use of a ball, applause, etc.), and the complexity of the implementation of exercises in each stage of training according to the developed program are described. The features of exercises to different musical sizes and at different stages of the program are distributed and painted. ***The goal is*** development of the program of formation the rhythm perception for athletes engaged in rhythmic gymnastics at the stage of initial training. ***Material and methods.*** Analysis of specialized literature and scientific publications, pedagogical observation, questionnaires. ***Results.*** As a result of analysis of literature and modern scientific publications, we have developed a program for forming a rhythm sensation for athletes who are engaged in artistic gymnastics at the stage of initial training, which involves studying jumps and dance tracks with the assimilation of the rhythm of their performance. ***Conclusions.*** Allexercises have a certain rhythmic structure, and athletes need to have a certain level of development of a sense of rhythm, to absorb and reproduce these rhythmic structures, and to perform qualitatively the exercises that they study. Based on the analysis of scientific sources and the questionnaire of trainers we have developed a program for forming rhythm sensation in athletes who are engaged in artistic gymnastics at the stage of initial training which includes the study of jumps and dance tracks, which in turn are divided into groups according to the rhythm and musical size of their performance.

Key words: program, rhythm, formation, gymnastics, artistic, training, elementary.

Оксана Сосновська, Роман Петрина. Програма формування відчуття ритму в художній гімнастиці на етапі початкової підготовки. У статті описано особливості програми формування відчуття ритму в спортсменок, які займаються художньою гімнастикою на етапі початкової підготовки. Показано зміст та поступовість ускладнення вправ, що сприяють формуванню відчуття ритму,а також особливості об'єднання вивчення елементів за схожістю ритму їх виконання. Описано застосування засобів і методів формування відчуття ритму(зокрема застосування м'яча, оплесків та ін.), і складність виконання вправ у кожному етапі занять за розробленою програмою.Розподілено та розписано особливості виконання вправ під різні музичні розміри. ***Мета.*** Розробка програми формування відчуття ритму в спортсменок, котрі займаються художньою гімнастикою на етапі початкової підготовки. ***Матеріал і методи*** – аналіз спеціалізованої літератури та наукових публікацій, педагогічне спостереження, анкетування. ***Результати.*** У результаті аналізу літератури та сучасних наукових публікацій ми розробили програму формування відчуття ритму для спортсменок, які займаються художньою гімнастикою на етапі початкової підготовки, у котрій передбачено вивчення стрибків і танцювальних доріжок із засвоєнням ритму їх виконання. ***Висновки.*** Усі вправи мають певну ритмічну структуру. Спортсменкам потрібно володіти певним рівнем розвитку відчуття ритму, щоб засвоювати та відтворювати ці ритмічні структури, якісно виконувати вправи, які вони вивчають. На основі аналізу наукових джерел й анкетування тренерів ми розробили програму формування відчуття ритму в спортсменок, які займаються художньою гімнастикою на етапі початкової підготовки у яку включено вивчення стрибків і танцювальних доріжок, які поділено на групи за ритмом та музичним розміром їх виконання.

Ключові слова: програма, ритм, формування,гімнастика, художня, підготовка, початкова.

Оксана Сосновская, Роман Петрина. Программа формирования чувства ритма в художественной гимнастике на этапе начальной подготовке. В статье описываются особенности программы формирования чувства ритма в спортсменок, занимающихся художественной гимнастикой на этапе начальной подготовки. Показывается содержание и постепенность усложнения выполнения упражнений, которые способствуют формированию чувства ритма, а также особенности объединения изучения элементов по сходству ритма их исполнения. Описываются применение средств и методов формирования чувства ритма (в частности применения мяча, хлопков и др..), и сложность исполнения упражнений на каждом этапе занятий по

разработанной программе. Распределяются и расписываются особенности выполнения упражнений под различные музыкальные размеры и на разных этапах разработаной программы. ***Цель*** – разработка программы формирования чувства ритма у спортсменок, занимающихся художественной гимнастикой на этапе начальной подготовки. ***Материал и методы*** – анализ специализированной литературы и научных публикаций, педагогическое наблюдение, анкетирование. ***Результаты.*** В результате анализа литературы и современных научных публикаций мы разработали программу формирования чувства ритма для спортсменок, занимающихся художественной гимнастикой на этапе начальной подготовки, в которой предусмотрено изучение прыжков и танцевальных дорожек с усвоением ритма их исполнения. ***Выводы.*** Все упражнения имеют определенную ритмическую структуру, и спортсменкам необходимо обладать определенным уровнем развития чувства ритма, чтобы усваивать и воспроизводить эти ритмические структуры, и качественно выполнять упражнения, которые они изучают. На основе анализа научных источников и анкетирования тренеров мы разработали программу формирования чувства ритма у спортсменок, занимающихся художественной гимнастикой на этапе начальной подготовки в которую включено изучение прыжков и танцевальных дорожек, которые, в свою очередь, разделены на группы по ритму и музыкальным размерам их выполнения.

Ключевые слова. программа, ритм, формирования, гимнастика, художественная, подготовка, начальная.

Analysis of scientific research and publications. The innovation in the competition rules from 2013 is the mandatory implementation of dance tracks in competitive exercises which still has no clear methodological justification for their study and improvement in the literature on rhythmic gymnastics. In order to be able to express music through movements, gymnasts need to possess a highly developed sense of rhythm [5]. According to the authors who have learned the rhythm of exercise it is easier for an athlete to master the technique of its execution [2, 5].

This necessitates a scientific search for improving the training of athletes using means of forming rhythm perception.

Each element has its own rhythmic structure which can be formed in the context of purposeful education of a sense of rhythm [2, 10]. Having determined the rhythmic structure of each element that is studied at the initial stage of training it is possible to significantly improve and accelerate the learning process of sports equipment and therefore the acquisition of basic technical training [2, 5-8].

In this regard we have developed a program for forming the rhythm perception of sportwomen who are engaged in rhythmic gymnastics at the stage of initial training which includes the study of dance tracks and jumps by applying certain methodological techniques that simplifies the study of these exercises and positively affects the training of sportwomen who are engaged in rhythmic gymnastics.

Material and methods of research. To achieve the purpose of the study, we used the analysis of specialized literature and scientific publications, pedagogical observation, questionnaires, checking the accuracy of the rhythm of control exercises, which reflected the rhythm of dance tracks and jumps, expert evaluation, mathematical treatment of the results.

In the pedagogical experiment participated 40 gymnasts at the stage of initial training (aged 6-8). The pedagogical experiment lasted 3 months.

Results. After studying the peculiarities of forming the rhythm perception in sports with difficult coordination we have developed a program for forming the rhythm perception in sportwomen who are engaged in rhythmic gymnastics at the stage of initial training.

As a result of the analysis of scientific and methodological literature we have identified the means and methods of developing of rhythm perception that we included into the program [1, 6-7].

Specialists in musical literature always begin to develop the rhythm perception by studying musical sizes, peculiarities of their reproduction. In rhythmic gymnastics, music has a leading role and the ability to express it through movements has always been of little importance, and the current rules of the competition emphasize this particular attention [4].

We conducted research on the peculiarities of the rhythm of performing basic jumps which gymnasts study at the stage of initial training, as well as distributed dances, which teach gymnasts to musical size. Summing up the investigated features of the rhythm of jumping and dancing tracks and by conducting a questionnaire of trainers we distributed jumps on the similarity of the rhythm of their performance to musical sizes. We simplified the task of studying jumps and dance tracks by combining them with the similarity of the rhythm and the musical size of their execution.

The program was divided into 3 stages. Tasks which aimed at forming a sense of rhythm were complicated at each stage. Each training session and each stage were selected with appropriate musical support taking into account the tasks of the training.

So, at the first stage of training on the developed program in one training session gymnasts learned only one type of musical size as well as the type of jumps that are as close as possible to this size.

At the second stage in each training session gymnasts are encouraged to absorb and reproduce all musical sizes, however, differentiating each musical size and variety of rhythm.

In the third stage of training for the developed program gymnasts are recommended to perform exercises with a change in musical size (for example 2 series of one exercise to execute in the amount of 2/4, two more - in the amount of ¾), and perform various jumps of all kinds and dance tracks in all musical sizes).

The program of forming the rhythm perception for sportwomen who are engaged in rhythmic gymnastics at the stage of initial training has the following structure (Table 1):

Table 1

Distribution of exercises in the program of forming a sense of rhythm for athletes who are engaged in artistic gymnastics at the stage of initial training

<table>
<tr><th>Stage of the program</th><th colspan="2">Stage I</th><th colspan="2">Stage II</th><th colspan="2">Stage III</th></tr>
<tr><th>No lesson</th><th>Musical size under which warm-up exercises are performed and dance tracks are studied</th><th>The method of studying jumps</th><th>Musical size under which warm-up exercises are performed and dance tracks are studied</th><th>The method of studying jumps</th><th>Musical size under which warm-up exercises are performed and dance tracks are studie</th><th>The method of studying jumps</th></tr>
<tr><td>1-4</td><td>2/4</td><td>from the place</td><td rowspan="3">2/4, 3/4, 4/4</td><td>from the place, from step</td><td rowspan="3">2/4 – 3/4 – 4/4</td><td rowspan="3">All ways to jump</td></tr>
<tr><td>5-8</td><td>3/4</td><td>from step</td><td>from step, з наскоку</td></tr>
<tr><td>9-12</td><td>4/4</td><td>with bounce, from takeoff</td><td>with bounce, from takeoff</td></tr>
<tr><td>Number of series, repetitions of exercises</td><td>In 2 - 4 series of exercises in one music. Size, 5 to 8 repetitions of each dance track.</td><td>Each jump - 10 to 15 times.</td><td>In 2 - 4 series of exercises in one mus. Size, 5 - 8 repetitions of each dance track</td><td>Each leap is 4 to 8 times</td><td>Each leap - 8-10 times 2-4 series of exercises in one musical size, 5 to 8 repetitions of each dance track</td><td>Each leap is 4 to 8 times</td></tr>
</table>

Here is the content of the training session at the first stage of the program isdescribed:

Lesson № 1

Preparation part

1. Explanation of the notion of musical size, listening to musical works in different sizes, performing applauses, dancing in this size;

2. Performing warm-up exercises with a musical size of 2/4.

Main part

3. Repeating the rhythm of jumping from place to place, and studying the main positions of their execution;

4. Perform simple dance steps of 2/4, with pauses filled with applause in the size of 2/4.

Final part

5. Listening to music that has a music size of 2/4, exercises to restore to this music (for example breathing exhale, the trainer counts once or twice).

At the next training session under the same scheme, gymnasts study the musical size of 3/4, jump from step, and perform dances in the size of ¾. And just in the third lesson, gymnastics study size 4/4, jumping from the attack.

That is, at the first stage of training for the first two weeks, the program developed has the following structure:

Table 2

Features of the first stage of the program of forming a sense of rhythm in artistic gymnastics at the initial stage of preparation

Musical size / **Part of lesson**	**2/4**	**3/4**	**4/4**
Preparation	Exercise for a 2/4 warm-up.	Exercise for 3/4 size workout.	Exercise for 4/4 size workout.
Basic	Repeating the rhythm of jumping from place to place, and studying the main positions of their execution, performing underwater exercises; Performing simple dance steps of 2/4, with pauses filled with applause in the size of 2/4. Repeating the rhythm of jumps from a step, and studying the main poses for their performance, performing preparatory exercises;	Performing simple 3/4 dance steps, with pauses filled with applause of 3/4. Repeating the rhythm of jumps from the onslaught, or from the run-up and studying the main poses for their performance, performing preparatory exercises;	Performing simple 4/4 dance steps, with pauses filled with applause in the size of 4/4. Repeating the rhythm of jumps from the onslaught, or from the run-up and studying the main poses for their performance, performing preparatory exercises.
Final	Listening to music that has a music size of 2/4, varieties of ball reflections in this size, recovery exercises at the expense corresponding to the size of 2/4	Listening to music that has a musical size of 3/4, the types of ball reflections in this size, recovery exercises at the expense corresponding to the size of 3/4	Listening to music that has a musical size of 4/4, varieties of ball reflections in this size, recovery exercises at the expense corresponding to the size of 4/4

As a result of the application of the first stage of the program, there is a significant difference between the rhythm of control exercises that reflect the rhythm of the dance tracks. In the experimental group of gymnasts the error of reproduction of the rhythm was from 128.15 to 67.92 ms. less than in control group of gymnasts ($p < 0.05$). However, the results of reproduction the rhythm of jumps do not have a significant difference between the gymnasts of the control and experimental groups which is explained by the complexity of the rhythm of jumps ($p > 0.05$) (fig.1).

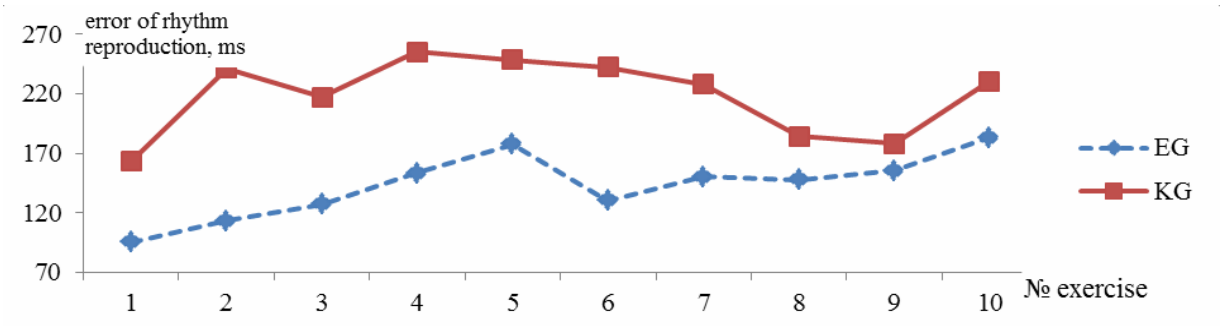

Fig.1. *Error of reproducing the rhythm of control exercises after the first stage of the experiment*

At the next stage of studying the developed program at in one lesson gymnasts performed a warm-up to different musical sizes, played a rhythm performing jumps different ways of preparation and performed dances for different musical sizes (table 3).

Table 3

Features of the second stage of the program of forming a sense of rhythm in artistic gymnastics at the stage of initial training

	Monday	**wednesday**	**Friday**
Musical size / **Part classes**	**2/4, 3/4, 4/4**		
Preparation	Exercise in musical size 2/4, 3/4, 4/4.		
Basic	Repeating the rhythm of jumping from place - performing jumps from place, similar to playing the rhythm of jumps from the pitch and their execution, then from the onslaught and from the run; Perform dance steps in size 2/4, then ¾, 4/4 with pauses, filled with applause in appropriate sizes.		
Final	Competitive tasks for the best performance of the dance track in a given trainer musical size, on guessing musical size, musical-rhythmic games, variations of ball reflections in various sizes. Restoration exercises for an account that matches different musical sizes.		

As a result of the application of the second stage of the program in the experimental group of sportwomen, the indicators of the rhythm error of all control exercises are significantly lower than in the control group of gymnasts ($p < 0.01$). Also, significant changes occurred between rhythm performance and experiment. And as a result of the application of the first and second stages of the program there was a significant improvement in the rhythm reproduction rates of control exercises ($p < 0.01$). With the gymnasts of the control group there were no significant changes in the rhythm reproduction rates ($p > 0.05$), (fig.2).

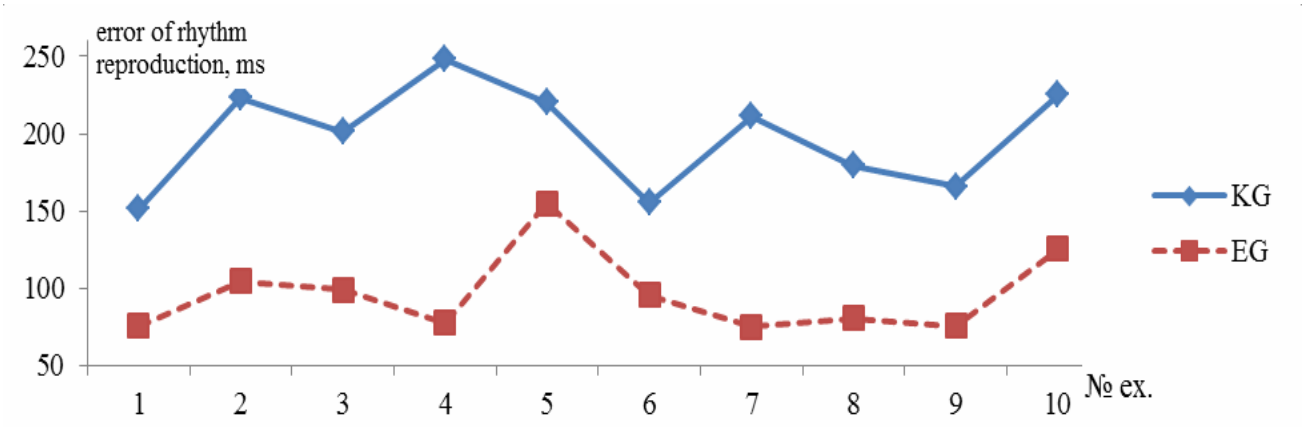

Fig.2. *Error of reproducing the rhythm of control exercises after the second stage of the experiment*

In the 3rd stage of the developed program gymnasts performed during the warm-up, performed each exercise changing of the musical size, performed a variety of jumps, and dance with a changing its size (table 4).

As a result of the application of three stages of the program for forming the rhythm sensation in the gymnasiums of the experimental group, there has been a significant improvement in the parameters of the rhythm reproduction of control exercises, both with the indices within the group up to the experiment, and in comparison with the performance of the gymnasts of the control group (Fig.3).

Table 4

Features of the third stage of the program of forming a sense of rhythm in artistic gymnastics at the initial stage of preparation

	Monday	Wednesday	Friday
Musical size / **Part occupation**	**2/4 - 3/4 - 4/4**		
Preparatory	Exercise during a warm-up with a change in musical size once (eg 2 series in 2/4, two in ¾, etc.)		
Basic	Repeating the rhythm of jumping from place - performing 2 types of jumps from the place, then recreating jumps from the onslaught - performing 2-3x kinds of jumps from the onslaught, playing the rhythm of jumps from the pitch - performing jumps from the pitch, etc .; Performing applause and other exercises, changing musical size, and performing dance steps with the same size change. Execution of applause in one musical size with the use of triples, and trio dancing.		
Final	Competitive tasks for the best performance of the dance track in a given trainer musical size, on guessing musical size, musical-rhythmic games, variations of ball reflections in various sizes. Restoration exercises for an account that matches different musical sizes.		

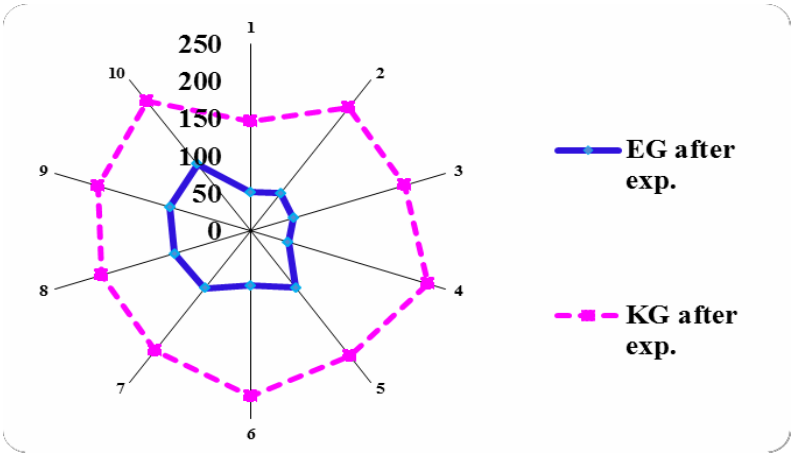

Fig. 3. *Error of reproducing the rhythm of control exercises after the experiment*

Also, in the experimental group, there are the highest estimates for the technique of performing jumps, (Fig. 4) and dance tracks (Fig. 5) are higher than in the gymnasts of the control group.

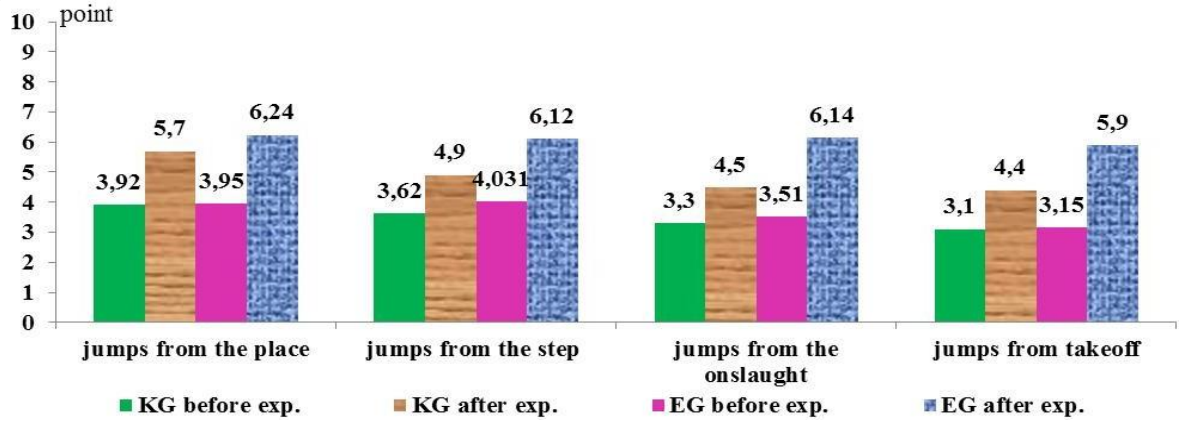

Fig. 4. *Expert evaluation for performing jumps by gymnasts of the experimental group and the control group before and after the experiment*

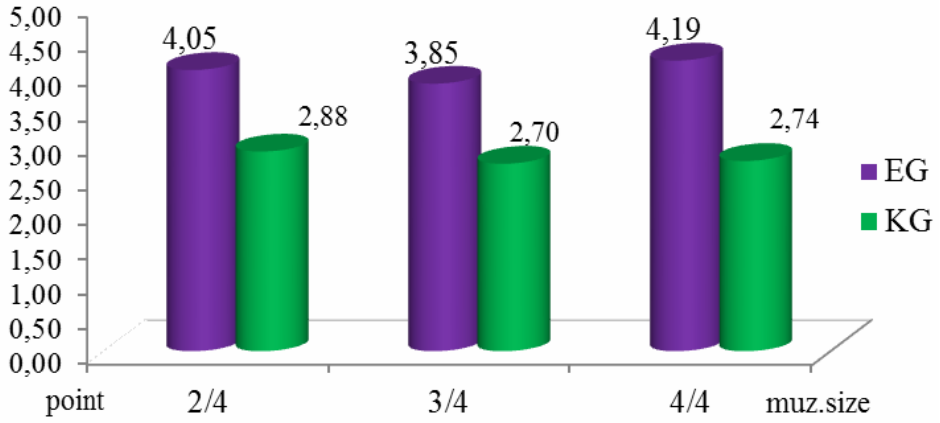

Fig. 5. *Estimation for the performance of dance tracks in one musical rhythm by the gymnasts of the control and experimental group after the experiment*

Conclusions. In order to improve the quality of the technigue of the sportwomen who are engaged in rhythmic gymnastics at the initial stage of training, we have developed the program of formation the rhythm perception in which the study of exercises is distributed according to the musical size and rhythm in which they are convenient to perform. This approach simplifies the task of trainer coaching for jumping techniques and dance tracks.

Prospects for further research. It is planned to develop methodical materials for trainers in rhythmic gymnastics to determine the musical size of music "aurally", the search for computer programs that will allow you to determine the musical size of the composition, under which it is planned to formulate competitive exercises, its parts, which facilitate the setting of competitive exercises, and their performance by gymnasts at different stages of preparation.

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THE INFLUENCE OF NON-PHARMACOLOGICAL AIDS ON TRAINING ACTIVITIES OF STUDENTS OF HIGHER EDUCATIONAL INSTITUTIONS

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Abstract

The actuality of the study is determined by the introduction of non-pharmacological aids, that include aroma oils and their compositions, into the training process of students in sports mastery groups, to enhance the body's functional reserves and the effectiveness of training activities. ***The purpose*** of the study is to detect the effects of aroma compositions (compositions of vegetable essential oils) on the functional, psycho-emotional state and physical capacity of students of higher educational institutions in terms of training activities. ***Research results.*** The results of the study indicate that the experimental group has a tendency to improve the psycho-emotional state, that is evident from the results of the SUN test, which indicates that the activity increased from 3,6 ± 0,5 points to 4,2 ± 0,6 points. The mood increased by 14 %, the desire to work compared with the background indicators increased from 3,6 ± 0,5 point to 4,2 ± 0,6 points. The feeling has improved by 9 %. With the accumulation of aroma compositions, a decrease in heart rate at rest is observed at 72,9 ± 1,59 (75,9 ± 1,56 at the beginning). The pulse pressure index at the beginning of the study was 45,6 ± 0,87 points, after – 44,18 ± 0,96 points. The Robinson index after the application of aroma sessions was 84,7 ± 2,06 points, the Ruffle index – 6,50 ± 1,1 points, the EGC changed from 7,11 ± 0,27 cm to 8,35 ± 0,23 cm The results of technical actions grew from 5 % to 44,1 % on average, indicators of gaming actions in the innings grew from 37,54 % to 41,62 %; gaming activities in the defense grew from 43,16 % to 46,20 %; gaming attacks in the attack from 46,13 % to 50,08 %; gaming activities in the reception rose from 42,38 % to 48,47 %. Thus, all indicators of action games increased from 9 % to 19 % after the pedagogical experiment.

Key words: students, aroma oils, teraceti, training activity, functional state.

Роман Черкашин, Олександр Валькевич, Микола Білера, Вікторія Матійчук. Вплив нефармакологічних засобів на тренувальну діяльність студентів вищих навчальних закладів. Актуальність дослідження зумовлена впровадженням у навчально–тренувальний процес студентів, котрі займаються в групах підвищення спортивної майстерності, нефармакологічних засобів, до яких належать аромамасла та їх композиції, для підвищення функціональних резервів організму й ефективності тренувальної діяльності. ***Мета дослідження*** – виявлення ефектів спрямованого впливу аромакомпозицій (композицій рослинних ефірних масел) на функціональний, психоемоційний стан і фізичну працездатність студенток вищих навчальних закладів в умовах тренувальної діяльності. ***Результати дослідження.*** Результати дослідження свідчать, що в досліджуваній групі спостерігається тенденція до поліпшення психоемоційного стану, що видно з результатів тесту САН, який свідчить що активність підвищилась із 3,6±0,5 бала до 4,2±0,6 бала. На 14 % підвищився настрій, бажання працювати, порівняно з фоновими показниками, зросли з 3,6±0,5 до 4,2±0,6 бала. Самопочуття покращилося на 9 %. При накопиченні аромакомпозицій спостерігається зниження ЧСС у спокої 72,9±1,59 (75,9±1,56 на початку). Показник пульсового тиску на початку дослідження становив 45,6±0,87 од., після – 44,18±0,96 од. Індекс Робінсона після застосування аромасеансів становив 84,7±2,06 од., Індекс Руф'є – 6,50±1,1 бала, ЕГК змінилась з 7,11±0,27 см до 8,35±0,23 см. Результати технічних дій зросли в середньому від 5 % до 44,1 %, показники ефективності ігрових дій при подачі підвищилися із 37,54 до 41,62 %; ігрових дій при захисті зросли з 43,16 до 46,20 %; ігрових дій у нападі з 46,13 % до 50,08 %; ігрових дій у прийомі зросли з 42,38 до 48,47 %. Тобто всі показники ігрових дій збільшились від 9 до 19 % після педагогічного експерименту.

Ключові слова: студенти, аромамасла, терасети, тренувальна діяльність, функціональний стан.

Роман Черкашин, Александр Валькевич, Николай Билера, Виктория Матийчук. Влияние нефармакологических средств на тренировочную деятельность студентов высших учебных заведений. Актуальность исследования обусловлена внедрением в учебно-тренировочный процесс студентов, занимающихся в группах повышения спортивного мастерства, нефармакологических средств, к которым относятся аромамасла и их композиции, для повышения функциональных резервов организма и эффективности тренировочной деятельности. ***Цель исследования*** – выявление эффектов направленного воздействия аромакомпозиций (композиций растительных эфирных масел) на функциональное, психоэмоциональное

состояние и физическую работоспособность студенток высших учебных заведений в условиях тренировочной деятельности. ***Результаты исследования.*** Результаты исследования свидетельствуют, что в исследуемой группе наблюдается тенденция к улучшению психоэмоционального состояния, что видно из результатов теста САН, который свидетельствует, что активность повысилась с 3,6 ±0,5 бала до 4,2 ± 0,6 балла. На 14 % повысилось настроение, желание работать, по сравнению с фоновыми показателями, выросли с 3,6 ± 0,5 до 4,2 ± 0,6 балла. Самочувствие улучшилось на 9 %. При накоплении аромакомпозиций наблюдается снижение ЧСС в покое 72,9 ± 1,59 (75,9 ± 1,56 в начале). Показатель пульсового давления в начале исследования составил 45,6 ± 0,87 ед., После – 44,18 ± 0,96 ед. Индекс Робинсона после применения аромасеансив составил 84,7 ± 2,06 ед., Индекс Руфье – 6,50 ± 1,1 балла, ЭГК изменилась с 7,11 ±0,27 см до 8,35 ± 0,23 см. Результаты технических действий выросли в среднем от 5 до 44,1 %, показатели эффективности игровых действий при подаче выросли с 37,54 до 41,62 %; игровых действий при защите – выросли с 43,16 до 46,20 %; игровых действий в нападении – с 46,13 до 50,08 %; игровых действий в приеме –выросли с 42,38 до 48,47 %. То есть все показатели игровых действий увеличились от 9 до 19 % после педагогического эксперимента.

Ключевые слова: студенты, аромамасла, терасеты, тренировочная деятельность, функциональное состояние.

Introduction. The constant growth of training and competitive loads and associated with it increased interest in the pharmacological correction of the athlete's body, as well as rigid anti-doping control, determine the need for the systematic approach and the search for new technologies that increase the functionality and fitness of athletes. Result-oriented effects of essential oils integrated into the training process can be the essential element of such technologies.

Aromatherapy − is a perfectly clean, completely natural method for eliminating many of the negative factors, including overtraining and anxiety before competitions. It is also an effective way to prepare the athlete's body for future physical activity. All procedures are based on the human use of high-quality, clean, not containing chemical carriers or admixtures, essential oils obtained without the use of harmful technical, electrical and radiation equipment [6].

Information about the influence of essential oils on the functional state has been very contradictory up to the present time. Many recent studies have focused on the mechanisms of the influence of essential oils [7; 10].

It is known that in order to optimize the functional state and physical efficiency it is more favourable to use comfortable, pleasant multipurpose products, which combine efficiency with simplicity and accessibility. It is aromatherapy that integrates all of the above mentioned criteria. In addition, the procedures for the use of essential oils do not require additional efforts from the athlete, which is very important for his interest in these non-pharmacological products [1; 2].

Under extreme conditions, essential oils can be used to improve efficiency and memory, to increase attention and accuracy of performance [3; 4; 5].

Essential oils have not been widely used in sports yet, although it is recognized that they are useful for correction and optimization of athletes training. Some studies provide evidence of the effectiveness of the use of essential oils and their use perspectiveness during physical activity, while other authors, on the contrary, try to show the complete lack of real results [6; 8; 9].

Therefore, this research has been devoted to the study of the effectiveness of the use of aroma oils in the training activity of female students of higher educational institutions, who are engaged in sports mastery volleyball groups, to improve the training process and increase the effectiveness of training activities.

The purpose of the research is to find out the result-oriented effects of aroma compositions (compositions of herbal essential oils) on functional, psycho-emotional state and physical capacity of students of higher educational institutions during training activities.

The material and methods of the research include theoretical analysis and review of scientific and methodological literature, interviews with specialists, pedagogical observation, pedagogical experiment, medical and biological methods, methods of mathematical statistics.

In accordance with the aim and tasks of the study, the treatment group (TG, n = 23) was formed. It included first- and second-year female students, who were engaged in sports mastery volleyball group. We obtained written consents of all participants to participate in our research. The research was conducted on the basis of Kyiv National Economic University of Economic named after Vadym Getman

Research results and discussion. A recent review of the literature on this problem has found out that in practice, specialists often use not one essential oil but mixtures of various essential oils, that is, aroma

compositions. Therefore, we used the aroma composition "The Clear Mind" of the national brand "Aromatica", which consisted of:

- natural grapefruit essential oil − acts as a tonic, relieves depression, anxiety and stress, lightens one's mood, stimulates the brain, improves work capacity, helps to overcome mental fatigue and lethargy.
- natural orange essential oil − helps to cope with aggression and anger.
- natural cinnamon essential oil − helps to cope with aggression and anger. Lightens one's mood, helps to relieve depression, stimulates the brain. Inspires, awakens intuition, returns a zest for life.
- natural ginger essential oil − calms the nervous system, increases brain and vision acuity, improves memory and concentration of attention. It acts as a tonic, and helps to overcome mental, emotional and physical fatigue.

In the preparatory part of the training session, 4 times a week, for 35 days, while doing physical exercises the treatment group inhaled a composition of herbal essential oils "The Clear Mind" of the national brand "Aromatica", in a concentration of 0.1−0.15 mg / m3 for 25 minutes.

In addition to the combined developing exercises, a set of physical exercises with terasets, where a special latex tape was used as a shock absorber, was included in the preparatory part. This tape has different degrees of resistance and is fixed on wrists and ankles. The set of physical exercises included 15 dynamic shoulder, back, chest, legs and arms exercises, which were performed in aerobic mode. Rhythmic musical accompaniment was used to create a more favourable atmosphere for performing experimental task.

The results of the research showed that changes in the main indicators influencing the adaptation to the proposed loads took place due to the prolonged impact of aroma compositions.

To estimate the psycho-emotional state of the female students, we used the SAM questionnaire (state of health, activity, mood) [11], which is aimed at quick assessment of the psycho-emotional state of a person at a given moment. All three indicators, which are defined by the above stated method, are closely interrelated. The results obtained are presented in Table 1.

Table 1

The Results Obtained on the Basis of Accumulation of Aroma Compositions

Methods	Indicators	After using aroma compositions				Increase %	
		Before the experiment	After 10 train. sessions	After 20 train. sessions	In 10 days after the exp.	*1*	*2*
Test SAM (point)	State of Health	3.9±09	4.4±08	4.3±07	4.1±06	9	5
	Activity	3.6±05	3.8±08	4.2±06	3.9±08	14	7
	Mood	3.8±07	4.2±06	4.4±09	4.2±07	14	10
	Desire to work	3.6±05	3.9±07	4.2±06	4.1±09	14	10
Estimation of the functional state of the cardiovascular system (mmHg, U. / min)	SBP	119.2±2.5	118.3±2.7	116.8±1.9	117.5±2,1	2	1
	DBP	73.8±1.12	73.1±1.19	72.0±1.16	73.4±1,17	2	1
	Heart rate	75.9±1.56	74.8±1.46	72.3±1.51	72.9±1,59	5	4
	PP (pulse, pressure)	45.6±0.87	45.2±0.91	44.8±0.81	44.18±0.96	2	3
Ruffier Index		7.09±1.3	6.86±1.5	6.50±1.1	6.64±1.0	9	7
Robinson index		9.,7±2.56	87.5±2.37	84.7±2.06	85.6±1.75	7	6
Chest excursion		7.11±0.27	7.53±0.32	8.35±0.23	8.33±0.41	15	15

Note: 1 -% increset after 20 training sessions; 2% increase in 10 days after the completion.

As can be seen from the results of the SAM test in the treatment group there is a tendency to improve the psycho-emotional state. The activity increased from 3.6 ± 0.5 points to 4.2 ± 0.6 points. The mood has also increased by 14%, which suggests the positive influence of aroma oils on the psycho-emotional state.

The desire to work compared with the background indicators, which were 3.6±0.5 points, after 10 training sessions reached 3.9± 0.7 points and in 20 days −4.2±0.6 points. They also improved the state of health, which they rated in 4.3± 0.7 points compared with the background index − 3.9±0.9 points.

When analyzing the results in the treatment group it was found that with the accumulation of aroma compositions the decrease in heart rate at rest is 72.9±1.59 (75.9±1.56 in the beginning). We interpret this as a factor in expanding the adaptive capacity of the body. The pulse pressure index at the beginning of the research was 45.6±0.87, and after the research, this index was 44.18±0.96.

Index of the functional capacity of the heart was calculated according to Robinson index. This is a key indicator of the functional state of cardiovascular system. The smaller it is at rest, the higher are the spare capacities of cardiovascular system, the higher is its fitness. The research has shown that the overall rate index was at around 90.7±2.56, indicating the lack of functional capacity of cardiovascular system of female volleyball players. After a long-term use of aroma sessions this figure decreased to 84.7±2.06, which, according to the table of index calculation, indicates that the functional reserves of cardiovascular system are normal.

The functional capacity of cardiovascular system to adapt to physical activity was calculated according to Ruffier Index. At the beginning of the research the index was 7.09±1.3 points, while at the end of the study after aromatherapy in combination with breathing and combined developing exercises and also physical exercises with terasets, this index was 6.50±1.1 points, which corresponds to a satisfactory response to physical activity. However, we believe that this indicator may be higher in this group.

Well trained breathing is one of the requirements to improve athletic mastery and achieve high efficiency, one of the ways of active rest during the rehabilitation. We have obtained comprehensive results proving that chest excursion in the treatment group of female volleyball players changed from 7.11±0.27 cm to 8.35±0.23 cm, which corresponds to a good excursion.

Besides, female students of the treatment group on the background of a long-term action of aroma oils demonstrated the tendency to improve the training activity as compared with the initial state of indicators. The results of technical actions in comparison with the initial state of indicators increased on average from 5% to 44.1% , which can be observe in Table 2.

Table 2

Technical and Physical Efficiency while Applying Aroma Compositions

№	Control tests	Treatment group					
		Before the experiment	**After the experiment**	**difference**		**t**	**p**
		M ± m	M ± m	unit	%		
1	Run 20 m (s)	4.0 ± 0.04	3.6 ± 0.03	0.38	9.5	7.6	<0.05
2	Jump speed (once every 20 s)	26.6 ± 0.7	32.8 ± 0.6	6.2	23.3	6.58	<0.05
3	Accuracy of ball hitting in jump (%)	37.9 ± 1.8	54.6 ± 1.8	16.7	44.1	6.56	<0.05
4	The height of the jump	41, 9 ± 2,2	44 3 ± 3.5	2.4	5	0.58	> 0.05
5	Forward ball hitting without a jump at the wall	26.0 ± 0.9	28.4 ± 0.72	2.4	9.2	2.08	<0.05

The data of Table 3 indicate that as a result of a prolonged action of a mixture of herbal oils (aroma compositions) used during the preparatory part of the training session with first- and second-year

female students, who were engaged in sports mastery volleyball group, there have been positive changes in the indicators of gaming actions in terms of training activities.

Indicators of the effectiveness of gaming actions while serving the ball grew from 37.54% to 4 1.62%; gaming activities in the defense increased from 43.16% to 46.20%; gaming actions in the attack – from 46.13% to 50.08 %; gaming actions while receiving the ball increased from 42.38% to 48.47 %. That is, all the indicators of gaming activities increased from 9% to 19%.

Table 3

Indicators of the Effectiveness of Gaming Actions while Applying Aroma Compositions

		performance indicators (%)			
		Actions while serving the ball	**Action while receiving the ball**	**Actions in the defense**	**Actions in the attack**
Beginning		37.54	42.38	43.16	46. 13
End		41.62	48. 47	46.20	50.08
Dynamics of indicators	Unit	4.08	6.09	3.04	3.95
	%	15	19	9	11

Conclusions and perspectives for further research. The received increase in all the indicators has shown the correctness of the chosen direction. On the basis of the obtained results, it can be stated that the use of an integrated combination of aromatic sessions and training aids in the preparatory part of the training session, which includes not only combined developing exercises, but also complex exercises with terasets, make positive impact on the psycho-emotional, functional state of cardiovascular and respiratory systems and on the increase of the level of training activity of female students of higher educational institutions, engaged in volleyball.

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Reviews, Chronicles and Personals

REVIEW
on the collective monograph entitled "Social-pedagogical and biomedical basis of different population groups' physical activity"

(author: Anatoliy Tsos, Anatoliy Khomich, Andrzej Soroka and others; under scientific supervision of prof. A.V. Tsos)

The collective monograph is ordained to the topical issue of searching for effective system-based and scientifically grounded measures for the rational physical activity organization of different population groups (children, young adults and working people) in order to improve their physical and intellectual capacity and biosocial functioning. In return, these measures can help optimally increase the motor activity levels, develop self-sustainability and individualize PE classes and recreational activities depending on a person's physique.

The monograph is intended to be used as the basic material to substantiate rational contents and methods of different population groups' physical activity, to track the sequence of its execution at different recreational activity stages and to monitor over the results.

The structure of the monograph itself is science-based and logically defined. It is divided into six parts, each covering the main problems in population's health-improving physical activity planning.

"Theoretical principles of development different population groups' physical activity" is the first part. It theoretically demonstrates usual and specific physical activity organization of a person; gives exact reasons behind the lack of physical activity; developes specific physical activity programs for children and youth, as well as the criteria for physical activity normalization.

The second part entitled "Organizational and methodical principles towards physical activity of preschoolers", investigates the physical condition of preschoolers, their morphofunctional development and fitness levels. As a result, it helped determine the daily stint of physical activities for preschoolers aged 5-7 y.o. and disclose the organizational and methodical principles of health-improving physical education for preschoolers.

The third part, entitled "The condition and planning methodology of secondary school pupils' physical activity", describes a variety of health-improving fitness programs for different population groups; determines the physical activity condition, morphofunctional development and fitness levels of both girls and guys aged 15-17; suggests the fitness program's general structure which can be adjusted depending on the class' aim, health condition, fitness levels and motivation development of the girls aged 15-17; shows the methods which can help creating individual fitness programs that girls can perform by themselves. The fourth part, titled "The characterization of Polish pupils' physical activity and approach towards health based on motivation and values ", gives analyzes on Polish school children's physical load; discloses the most common forms of physical activities; defines how Polish pupils chose to lead a healthy lifestyle in prior.

The fifth part, "The conditions and planning methodology of high school students' physical activity", reveals the factors which influence the physical activity of girls and guys; determines the physical and

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psychological components of health in student's life quality; shows the creation of the pattern which helps to construct an individual physical and heath-prone class based on execution of certain successive actions; students' psychophysical features helped adapt the pole walking and reserving the measures, methods and stages of training.

The sixth part, "The condition and planning basis of the elderly's physical activity", shows the results from physical activity investigations conducted among men of different age groups; displays that consideration of anthropometric markers plays an important role in calculation the individually generated physical load; suggests the overall index of steps per one gram of consumed food which has a correlation with the physical condition of men.

In addition to the main part, there are also extras with some theoretical material. Each part gives references and literature sources which allows the seekers to organize their work in the chosen category on their own. It is recommended for teachers of higher education establishments, teachers of secondary schools, postgraduates, students and scientists who are interested in problems regarding the planning of the health-prone physical activities for population.

Reviewer:
Head of PE Department
Lesya Ukrainka Eastern European
National University,
Doctor of Education, professor N. O. Belikova

INFORMATION FOR OUR AUTHORS

The edition "Physical education, sport and health culture in modern society"contains the following headings:

- ✓ Historical, legal and personnel issues of physical culture.
- ✓ Physical culture educational technologies.
- ✓ Physical culture, physical education of different groups of population.
- ✓ Curative physical culture, sports medicine and physical rehabilitation.
- ✓ Olympic and professional sport.

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