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Table of Contents

The Effects of Explosive Strength Applied to Footballers on Some Physical and Physiological Parameters
Ömer Zambak[1] and M. Onur Sever[2]

State of Physical Fitness of the Students of Ukrainian Higher Educational Institutions
Grygoriy Griban[1], Nadya Dovgan[2], Ganna Tamozhanska[3], Bogdan Semeniv[4], Alexander Ostapenko[5], Nataliia Honcharuk[6], Oksana Khurtenko[7], Larysa Kozibroda[8], Oleksandr Husarevych[9], Anatolii Denysovets[10], Oleksandr Hrynchuk[11], Kostiantyn Prontenko[12], and Ihor Bloshchynskyi[13]

Methodical System of Using Fitness Technologies in Physical Education of Students
Valery Zhamardiy[1], Grygoriy Griban[2], Olena Shkola[3], Olena Fomenko[4], Dmytro Khrystenko[5], Zoia Dikhtiarenko[6], Eduard Yeromenko[7], Andrii Lytvynenko[8], Nataliia Terentieva[9], Olena Otravenko[10], Ivan Samokish[11], Oleksandr Husarevych[12] and Ihor Bloshchynskyi[13]

Professional Skills and Competencies of the Future Police Officers
Valentin Bondarenko[1], Ivan Okhrimenko[2], Olena Yevdokimova[3], Ninel Sydorchuk[4], Olha Dzhezhyk[5], Iryna Boichuk[6], Nataliia Kalashnik[7], Mykola Kozlovets[8], Vadym Slyusar[9], Vita Pavlenko[10], Nataliia Biruk[11], Igor Verbovskyi[12] and Ihor Bloshchynskyi[13]

Professional Development of Future Physical Culture Teachers during Studying at Higher Educational Institutions
Mykola Nosko[1], Oksana Sahach[2], Yuliia Nosko[3], Grygoriy Griban[4], Olena Kuznietsova[5], Viktor Bohuslavskyi[6], Nadya Dovgan[7], Ivan Samokish[8], Olena Shkola[9], Yevgenii Zhukovskyi[10], Kostiantyn Plotitsyn[11] and Ihor Bloshchynskyi[12]

The Role of Physical Education in the Professional Activity of Teaching Staff
Grygoriy Griban[1], Svitlana Vasylieva[2], Vasyl Yahupov[3], Valentyna Svystun[4], Oksana Khurtenko[5], Olexandr Starchuk[6], Lesia Vysochan[7], Iuliia Alieksieieva[8], Roman Ivanitskyi[9], Oleksandr Solohub[10], Tatyana Kurillo[11], Tetiana Biloskalenko[12], Maryna Hres[13] and Ihor Bloshchynskyi[14]

The Effect of the Core Training Model on the Physiological Parameters of Secondary Education Students Who Do Sportsa
Samet Dikici[1] and Hüseyin Eroğlu[2*]

Psychological and Physiological State of Bioenergetics of Hockey Players at the Beginning of a Hockey Match that Affects the Result of Playing Activity
Sivakov Vladimir Ilyich[1], Tumaseva Zoya Ivanovna[1], Belousova Natalya Anatolyevna[1], Fomina Larisa Borisovna[1] and Pyastolova Nelly Borisovna[2]

Methodical System of Using Fitness Technologies in Physical Education of Students

Valery Zhamardiy[1], Grygoriy Griban[2], Olena Shkola[3], Olena Fomenko[4], Dmytro Khrystenko[5], Zoia Dikhtiarenko[6], Eduard Yeromenko[7], Andrii Lytvynenko[8], Nataliia Terentieva[9], Olena Otravenko[10], Ivan Samokish[11], Oleksandr Husarevych[12] and Ihor Bloshchynskyi[13]

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Abstract

The article substantiates the model of the methodical system of using modern fitness technologies in physical education of students which takes into account all the components of the pedagogical process: the purpose, objectives, principles, methods, forms, and means of the preparation of future specialists' personality who have perfect physical and health care competencies to apply fitness technologies in their own life. The methodical system is created on the basis of methodological, theoretical and practical concepts taking into account the humanistic, systemic, activity, personally oriented, innovative, cultural, and competency-based approaches. The model will contribute to the formation of the value-based attitudes of students to fitness technologies, the activation of students' physical activity, and the formation of healthy lifestyle.

Keywords: physical education, fitness technologies, methodical system, model,students

1. Introduction

The problem of applying fitness technologies in physical education classes requires the teachers of the Departments of Physical Education of the Higher Education Institutions (HEI) of Ukraine to adopt new

approaches and non-standard solutions to increase the efficiency of the educational process in physical education which depends directly on their scientific and philosophical, socio-political, subject and specific knowledge, skills, readiness for self-development and self-improvement [1, 2, 3, 4]. This necessitates the constant updating of scientific approaches to the use of fitness technologies in physical education classes, the search for optimal means of achieving the goal of the educational process in physical education that will ensure the harmonious, continuous and professional development of students, the formation of a healthy lifestyle [5, 6, 7, 8, 9]. The use of fitness technologies in physical education classes should be based on a modern methodology that allows conducting a systematic analysis of the educational process in physical education, conditions and factors that affect its effectiveness [10, 11, 12, 13, 14]. The functioning of the methodical system of using fitness technologies is conditioned by a number of new factors created in physical education by the new requirements for educational programs of specialists training, including 1) the elimination of the physical education discipline as compulsory in the curriculum of a HEI; 2) the need to preserve and improve the level of health and fitness of modern youth; 3) the creation of a new physical and health care environment in the educational process of the HEI of Ukraine. All this conditioned the modernization and creation of a new methodical system for the use of fitness technologies which should preserve a sufficient level of physical fitness and health of students in the HEI of Ukraine and ensure their readiness for future professional activity, as well as to serve in the ranks of the Armed Forces of Ukraine. The analysis of the latest researches and publications, normative documents, scientific sources, the current state of the development of fitness technologies shows that theoretical and methodical principles of the use of fitness technologies in the physical education classes in the institutions of higher education have not yet been the subject of comprehensive scientific research [15, 16, 17, 18, 19]. In addition, the actuality of researching the selected problem is intensified by the need to resolve the contradictions between the increasing demands of society for the physical self-improvement of students and the current level of applying fitness technologies at higher education institutions; the theoretical potential of modern knowledge about the development of fitness technologies and insufficient development of conceptual and methodical-organizational issues of its implementation at higher education institutions; the possibilities of the influence of physical education on the establishment of personality and the insufficient development level of the investigated problem of the use of fitness technologies in the classes of physical education; the students' need to master modern fitness technologies and the scientific uncertainty of the ways of solving this problem in the conditions of limited time devoted to physical education at the institutions of higher education.

The aim of the study is to substantiate the model of the methodical system of using fitness technologies in physical education of students.

2. Method

The research involved the use of theoretical and empirical methods. The theoretical methods are the study and analysis of pedagogical, psychological, and methodical literature, curricula and normative documents; synthesis; generalization. The empirical methods included the observation of the physical education process, interviews with teachers and trainers conducting physical education classes according to a training program, and extracurricular section classes in fitness technologies.

This study complies with the ethical standards of the Act of Ukraine "On Higher Education" No.1556-VII dated 01.07.2014 and the Letter from the Ministry of Education and Science of Ukraine "On the Academic Plagiarism Prevention" No. 1/11-8681 dated 15.08.2018. Also, this study followed the regulations of the World Medical Association Declaration of Helsinki – ethical principles for medical research involving human subjects.

3. Results and Discussion

A model is a symbolic system that makes it possible to reproduce the didactic process as a subject of study, to show its integrity, functioning, and to preserve this integrity at all stages of the study. By modeling, it is possible to reproduce not only the static of the didactic process but its dynamics. The presence of a scientifically sound model of the educational process lets to predict its development. This is especially important for the educational process because it must predict the future positive result [20].

The scientists [21, 22, 23] stated that pedagogical model is the model that reflects the interconnections and interdependencies between the projected qualities and personality traits as an object of pedagogy and the process of its development, as well as the organization of the pedagogical system within which it takes place and manages it. Reference sources show that the models of education are the formed means of sign systems, thinking analogs (logical constructs) that schematically reflect educational practice as a whole or its individual fragments. They are classified as descriptive, functional, and predictive [24, 25, 26].

The methodical system model of using fitness technologies in the educational process of physical education is considered as a descriptive model of education since it is first developed in the system of physical education, physical and health care activity and it can give an idea of the purpose, objectives, structure and basic elements of the physical and health improving activities by the means of fitness technologies. Therefore, the purpose, functions, and principles of the students' physical and health care activities can be considered as the content and technology, organizational and methodical support, psychological and pedagogical conditions of the methodical system functioning.

The methodical system model of using fitness technologies in the educational process of physical education was created taking into account the changes that are taking place in Ukraine, in particular, the integration of HEI into the European educational space, and the components of pedagogical process including the purpose, tasks, methodological approaches, principles, methods, forms, means, and ultimate goal which is the training and education of a future specialists' personality who have perfect fitness and health care competencies to apply fitness technologies in their own life. The methodical system model was formed on the basis of the developed concept which is based on the theory and methodology of physical education, the theory of professional training of specialists in the field of physical culture and sports.

Depending on the purpose of use, the methodical system model of using fitness technologies can perform the following functions: descriptive (which is a guideline during the selection of methods and techniques of training, education, and management), effective (that enables the model to be used in training or management), and prognostic (which is the final check of vitality and the practicability of the model).

The methodical system was built on the basis of methodological, theoretical and practical concepts that considered a student as a personality, individual, subject of one's own activity that is a specific system and which promotes the acquisition of systematic knowledge in the field of physical culture and sports, provides the development of physical abilities and skills, the formation of fitness and health care competences for the introduction of physical culture and sports in the sphere of professional activity and in life [27, 28].

The methodological concept was intended to reflect the interconnection and interaction of scientific approaches concerning the modernization of the educational process of physical education with the changes occurring in the education system of Ukraine and the updating of the methodical support of the educational process for the use of fitness technologies in the physical education at HEI in order to form physical and health care competencies, provide fitness and working capacity, health status and acquire healthy lifestyle skills. In addition, we applied different approaches including humanistic, systemic, activity-oriented, personally-oriented, innovative, cultural, and competency-based [29, 30, 31]. According to the humanistic approach, a student was considered as a unique personality who has great opportunities that can be realized by providing the necessary psychological, pedagogical and professional assistance. The systematic approach involved consideration of the methodical system of using fitness technologies in the educational process of physical education of students as a certain pedagogical system which allows revealing regular connections between its separate components, one of which is the physical and health care environment; it was reflected in structuring the content of fitness technologies of preparation for viability and professional activity concerning the interdisciplinary integrated relationships (physical culture, the theory and methodology of physical education, pedagogy and psychology, hygiene and ecology, anatomy and physiology, valeology, etc.) providing high orientation towards human life. The activity approach involved achieving the necessary integrity of the image of a modern specialist, engaging one in the fitness and health improving activity, determining the purpose of training in fitness technologies, selecting their content and forms of presentation for future professional activity. A person-centered approach considers the subject-subjective interaction of a teacher and a student that provides the transformation of objectivity of the content of the students'

preparation for mastering the skills in using fitness technologies in the physical and health improving activities. The innovative approach is aimed at the selection and application of fitness technologies in the educational activities of the students of HEI of physical, health care and recreational orientation. The cultural approach allows considering a set of theoretical and methodological provisions and organizational and pedagogical measures aimed at creating the conditions for mastering fitness technologies that ensure a healthy life and a high level of physical fitness of a student. The competency-based approach makes it possible to consider the use of fitness technologies by students in physical and health improving activities as a set of specific competences.

The theoretical concept defined the system of initial parameters and assessments, which were the basis for revealing the content and structure of the methodical system of using fitness technologies in the educational process of physical education of students as a pedagogical phenomenon that included the following main provisions:

- the standardization, systematicity and continuity, comprehensive, systematic and activity-based approaches, and humanization are the compulsory conditions of a unified educational space in which a methodical system of using fitness technologies in physical education of students should function;
- physical and health care activities in the educational space of HEI should be the main system-forming component of the health care and recreational system that ensures the state of health, the level of general and special physical fitness of students;
- the principle of the integration of fundamentality and health improving orientation of the content, forms, methods, and means of teaching should be leading in the methodical system of physical education of students;
- the content of the methodical system of using fitness technologies requires updating and modernization of fitness and health care activity according to the changes of the introduction of modern technologies in the system of the educational process at HEI of Ukraine with the changes that have their own peculiarities for each educational institution;
- the transparency of the methodological system of using fitness technologies for the introduction of innovative health care technologies and improvement and updating of traditional and national Ukrainian systems of physical education of students.

The practical concept provided the check of the efficiency of the methodical system of using fitness technologies in the educational process of physical education and physical and health improving activities of students, which was to provide students with health preservation skills, the abilities to maintain a high level of physical fitness and working capacity, the motives for maintaining a healthy life; the definition of psychological, pedagogical, organizational-methodical and practical conditions of functioning of methodical system; the assessment of criteria, indicators, and levels of students' readiness to use fitness technologies in their professional activities.

The methodical system of using fitness technologies in the educational process of physical education of students takes into account the following main provisions: 1) the educational process of physical education of students is designed as a methodical system, which has its purpose, objectives, content, methods, forms and means of physical and health care activities; 2) concerning the elimination of the physical education discipline from the curricula of HEI, physical and health care activities are obligatory in educational process during the whole studying period and they should be considered in the unity of content, procedural and effective components of a comprehensive preparation of future specialists; 3) theoretical information on physical and health care education should be a system of knowledge of history, psychology, pedagogy, anatomy, physiology, hygiene, ecology, biochemistry, nutrition, ethics, aesthetics, etc.; 4) the use of fitness technologies according to the choice of students and the opportunities of HEI condition physical and health improvement, the increase in the level of physical fitness and working capacity; 5) the methodical system of using fitness technologies in the process of physical education and physical and health improving activities of students should provide comprehensive physical training, be aimed at preserving health, the formation of working capacity; provide the necessary level of knowledge in the physical education and the norms of a healthy lifestyle; promote the prevention of bad habits (alcohol, drugs, smoking, gambling), the rational use of free time and active leisure, etc.; 6) the methods, forms, and means of fitness technologies

should be adequate for the level of physical fitness and health of students.

The basis of modeling of the educational health-improving process through the use of fitness technologies is a specially created form for reproducing the characteristics of the object studied. The pedagogical content of the model is reflected in the fact that it allows highlighting current and perspective tasks of the educational process, identifying and analyzing the relationship between the probable, expected and desired changes of the object studied.

Investigating the methodical system of using fitness technologies in the educational process of physical education of students, it is important that the model, along with the cognitive purpose, should provide a formative goal in many cases. That is, the process of modeling a methodical system has not only cognitive but also inextricably linked forming function because the model is not only an instrument of cognition but also a prototype of the state of the object modeled that has the structure of what does not exist in objective reality yet.

The introduction of the methodical system of using fitness technologies in the physical and health care activities of students of HEI requires the solution of methodological, content, psychological and pedagogical, methodical and organizational tasks. The solution of methodological tasks is grounded by developing the concept of the formation of the methodical system of using fitness technologies, determining its content and structure; designing its components; establishing relationships between its components. The content tasks are aimed at personal-oriented choice of fitness technologies and personal needs of students; taking into account the specific content of fitness technologies, depending on staff and material-and-technical equipment; the possibility of the formation of individual physical and health improving needs, individual level of physical fitness, state of health, mastering of sports and technical skills, etc. Solving psychological and pedagogical tasks requires the development of psychological, pedagogical, physical and health care means that allow using fitness technologies on the basis of the individual and psychological characteristics of students, including a) the creation of individual motor trajectories of mastering the content of fitness technologies; b) the application of the methods and forms of fitness technologies according to the features of interpersonal interaction and mastering the material. The solution of methodical problems is connected with the creation of efficient methods of activating physical and health care activities of students; the development of a complete system of methods and forms of using fitness technologies that correspond to the state of health, the level of physical fitness and the features of future professional activity; the development of methodical support for the use of fitness technologies in future life. The solution of organizational tasks is connected with the analysis of possibilities of applying different fitness technologies; the organization of group, collective and individual physical and health-improving activities; providing fitness and health care activities with modern fitness technologies.

According to G. P. Griban (2012), the methodical system of physical education is a complex phenomenon, which consists of numerous components that form a certain set due to the internal connections between them. We consider the methodical system of applying fitness technologies as a set of training methods of different types of physical activity and their combinations, aimed at promoting health, ensuring a high level of physical fitness and working capacity of students. The created model of the methodical system of applying fitness technologies in the educational process of physical education of students has its purpose, tasks, content, principles, methods, forms, means, and tests. All components of the methodical system are related to the purpose of the formation and education of a students' personality through the process of using fitness technologies, which should form a comprehensively developed personality.

The system-functional approach to the study of the methodical system of applying fitness technologies involves the consideration of the system as a multidimensional and multistage structure which has many parameters, as a complex internally integrated social organism that can be analyzed and explained; as a set of elements, properties and relations that interact. The main features of systematicity include integrity and purposefulness, which is the set of elements, internal division, ordering, classification; the relationship of external and internal; the integration of separate elements and links.

The methodical system of applying fitness technologies has the following subsystems: 1) the educational process of physical education and physical and health care activities at HEI, aimed at preserving and improving the health of students, acquiring the skills of maintaining a healthy lifestyle, active leisure; 2)

didactic and methodical principles of using fitness technologies aimed at comprehensive development and physical fitness of students; 3) general physical training aimed at improving students' working capacity and readiness for future life; 4) the content, structure, and functions of fitness technologies are considered in the context of providing the necessary level of physical activity of students.

The researches of scientists [33, 34, 35, 36, 37] show that the methodical system should also perform the following functions: diagnostic-correcting, stimulating-mobilizing, developmental, communicative-educational, and analytical-evaluative. Accordingly, when designing and creating a methodical system of using fitness technologies, we took into account that the diagnostic-correcting function should systematically ensure the monitoring of students' knowledge, skills, motivations during physical and health-improving classes; the analysis and correction of the content of fitness technologies, forms, and methods of conducting classes and physical and health care events; solve problems of education, development, preservation of health and increase in the level of fitness; eliminate the reasons that prevent the students' physical improvement. The stimulating-mobilizing function of the methodical system of using fitness technologies was aimed at creating a positive psychological climate during the classes in fitness technologies, the activation of students' motivational value-based attitude to physical health-improving activity, increasing the interest in physical activity and innovative technologies of physical education. The developmental function of the methodical system of applying fitness technologies included the introduction of fitness technologies, the creation of a health-improving environment, the prediction of the course of physical and health care activities, focusing on the motivation, health, and level of physical fitness of students. Individually, this function also included the selection and development of fitness programs for each student in order to model goals, resources, physical activity and engaging the students in fitness technologies classes. The communicative-educational function of the methodical system is aimed at forming the ability to conduct dialogue on the issues of physical education and health care activities, the ability to establish and maintain friendly relations with colleagues, to realize the communicative abilities in life. The analytical-evaluative function of the methodical system is aimed at control, self-control, evaluation, and self-assessment of the efficiency of using fitness technologies, aiming at the further comparison with the goals and tasks designated to make the necessary adjustments in the physical and fitness process.

4. Conclusions

The newly created model of the methodical system of applying fitness technologies in the educational process of physical education will contribute to the formation of motivational value-based attitude of students to fitness technologies, an increase in the educational level, the activation of the physical activity of students by creating an environment in higher education institutions that will develop interests in active exercise, encourage the formation of a healthy lifestyle. The authors' idea is to increase the efficiency of physical and health-improving classes through the use of fitness technologies by differentiation and individualization of physical activity in order to create comfortable conditions for training. This approach is aimed at the significant improvement of the motivational and value-based attitude of students to fitness technologies; it activates physical activity and promotes mastering the skills and abilities to apply health-improving means in the further life.

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