Revista Românească pentru Educație Multidimensională
ISSN: 2066-7329 | e-ISSN: 2067-9270
Abstracting & Indexing | Clarivate Analytics - Web of Science (WoS); EBSCO; Google Scholar; ICI Journals Master List - Index Copernicus; Ideas RePeC; Econpapers; Socionet; CEEOL; Philpapers; KVK; WorldCat; CrossRef; J-GATE

2025, Volume 17, Issue 3, pages: 140-157 | https://doi.org/10.18662/rrem/17.3/1016
Submitted: April 16, 2025 | *Accepted for publication:* June 23, 2025

The Use of Health-Preserving Educational Technologies for the Development of Physical Culture of Bachelors in a Military Educational Institution

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Abstract: *The article is devoted to theoretical substantiating the feasibility of health-preserving educational technologies usage for the development of physical culture of bachelors in a military educational institution. The authors define the purpose of health-preserving educational technologies as the implementation of tasks related to disease prevention, optimization of time use in the educational process at a military educational institution, introduction of a healthy lifestyle, development of a culture of health-preserving and physical culture in general. Based on the results of experimental work, the authors have developed methodological recommendations for instructors on the use of health-preserving educational technologies for the development of physical culture of bachelors in a military educational institution. In particular: taking into account general and specific didactic principles of physical culture development; optimization of teaching methods when using health-preserving educational technologies, taking into account the psychological characteristics of the process of assimilating new knowledge; development and use of test tasks in the content of health-preserving educational technologies, monitoring the level of physical culture development of bachelors; directing the content of health-preserving educational technologies to the development of all components of physical culture of bachelors in a military educational institution.*

Keywords: *development of physical culture; pedagogical technologies; health-preserving educational technologies; bachelors of military educational institution; cadets.*

How to cite: Refel, V., Miroshnichenko, V., Okaievych, A., Bloshchynskyi, I., Mysiv, V., Tokovenko, O., Khotin, Y., & Dziuba, P. (2025). The use of health-preserving educational technologies for the development of physical culture of bachelors in a military educational institution. *Revista Românească pentru Educație Multidimensională, 17*(3), 140-157. https://doi.org/10.18662/rrem/17.3/1016

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Introduction

Today, physical culture is rightly recognized as one of the dominant forces in society, an essential factor in education, an element of the social sphere, healthcare, politics and art. Civilization is constantly evolving, and each year brings new challenges along the way. The pandemic and the war significantly limit the opportunities for young people, including bachelors in a military educational institution, to develop physical culture. Instead, its importance is growing. Scientists claim the uniqueness of physical culture as a means of guaranteeing "the salvation of mankind from physical degradation and degeneration," since the impoverishment of a person's health-preserving causes a deterioration in health, a decline in creative forces, and a drop in activity, etc."

Social development includes forming physical culture, which recognizes the interdependence between preparation for work and its results. As human activity becomes more complex, the content of human activity increases the demands for the level of physical fitness. This particularly applies to the future professional activity of bachelors studying in higher military educational institutions. And such a function of physical culture as the transfer of experience in creating modern technologies and means of regulating the psychophysical state of people is the basis for the development of health-preserving technologies. If physical culture is a means of increasing labor productivity and achieving a high level of performance in professional activities, then professional activities, in turn, provide appropriate conditions (material and spiritual) for the development of physical culture. This has led to considerable interest in various aspects of physical culture development and requires a detailed study. Among the factors that ensure the development of physical culture, using health-preserving technologies is essential.

Analysis of the latest research

A critical look at the sport psychology considering the need for improvement and the ways of its inculcation was made in the study of (Manolachi & Vizitei, 2018). The peculiarities of future border guard officers' military-patriotic education and philosophical issues of military conflicts have been substantiated by (Miroshnichenko, et al., 2019; Dyiak, Volobuiev, 2025). The peculiarities of Romanian law-enforcement agents training have been studied in the research of Roşca (2014). Such scientists as Karpushyna, et al., (2019) and others outlined the topicality of information

and communication technologies usage by future border guard officers. (Karpushyna, et al., 2019; Bloshchynskyi et al., 2018; Bloshchynskyi, 2017; Karpushyna, et al., 2021). Khosravi emphasized the development of information and communication technologies plays a vital role in Iranian Police prevention of becoming the database to a crime scene (Khosravi, 2018).

Some scholars explored and described the specifics of practical implications of social services (Sandu & Unguru, 2018). Structuring of social subjects for cadets at Military institutions and organizing practical exercises for cadets were regarded by (Dyiak, 2006; Lazorenko et al., 2022). Practical aspects of presenting methods of health-improving classes differentiation for primary schools were revealed in the article by (Arefiev et al., 2020).

Physical culture in the system of universal values is studied by Shepelenko (2020), Luchko et al. (2013) and Nedilko et al. (2024).

Works on sports physiology are relevant, in which the authors prove the benefits of physical exercises for human health (Wilmore, 2004; Weinberg & Gould, 2003). The impact of lifestyle on health was presented by (Haug, 2009; Mozolev et al., 2021). Researchers emphasize the need to form motivation to increase motor activity, promote and maintain health. Physical education's activity-based, subject-value, and performance aspects are mainly distinguished by (Fisher et al., 2017).

Scholars are very interested in forming cadets' physical readiness for their professional activities in quarantine (Mozolev et al., 2021). They have analyzed how students' physical health indicators have changed due to COVID-19 quarantine restrictions (Mozolev et al., 2024).

The dominant statement in works that address the problems of physical culture and health culture development is that the health need should be transformed into a cultural need and become the norm of a person's life (Mozolev et al., 2024). This is especially emphasized in studies related to the development of the physical culture of future specialists in military educational institutions (Klymovych et al., 2019; Griban et al., 2021).

Attention is drawn to the limited possibility of conducting physical training at certain stages of future officers' training, so the options for using forms, means and methods of physical training are considered indicative (Oleniev et al., 2021).

At the same time, attention is drawn to the specifics of the development of physical culture in military activities (Tsunetomo, 2012; Matokhniuk et al., 2020).

Based on the results of the works of modern researchers (Miroshnichenko & Zhuravlev, 2020), we can note that health-preserving

measures play an essential role in the development of physical culture of future specialists in various fields of activities. However, these and other scientific works do not focus on the use of health-preserving technologies for the development of physical culture of future officers. This prompted us to conduct scientific research.

Modern scientific literature emphasizes the need to introduce health-preserving technologies into the educational process, so the conclusions and recommendations we obtained during the study will have international significance. They are especially relevant for military education, because attention is drawn to the peculiarities of the development of physical culture of bachelors in military educational institutions, where physical training is combined with discipline, psychological endurance and leadership qualities. Considering military standards in the sphere of physical fitness training and sports (FM 21-20 Physical Fitness Training, 1992; ZDV 3-10 Sport in der Bundeswehr, 1988), the importance of health-preserving in the armies of many countries have been emphasized.

We took into account current global trends in the introduction of health-saving educational technologies into professional military education, which are recognized as priorities for the development of physical culture of military personnel. In US Army (Headquarters Department of the Army, 1992) the effectiveness of integrating such technologies into the military personnel training system has already been proven.

For this purpose, special programs are offered there that contain elements of adaptive physical education, as well as the principles of sustainable development in the educational environment. We believe that it is necessary to expand the scientific discussion in this area to promote the combination of national experience with international practices and recommendations for the formation of physical culture of bachelors (cadets) in a military educational institution. Such an approach actualizes the topicality of research in the international arena.

Statement of the task. The article aims to substantiate the feasibility of using health-preserving educational technologies to develop the physical culture of bachelors (cadets) in a military educational institution.

Methodology

To achieve this goal, the following **research methods** were used: *theoretical*– analysis, comparison, generalization, systematization of scientific literature and educational and methodological documentation to determine the theoretical foundations of the health-preserving technologies usage for

the physical culture development of bachelors in a military educational institution, as well as clarification of the essence and peculiarities of this process, determination of criteria, indicators and characteristics of physical culture development levels; *empirical*– pedagogical experiment (ascertaining and formative stages), observation, interviews, testing, questionnaires to determine the levels of physical culture development of bachelors at a military educational institution and the effectiveness of health-preserving technologies.

Results

The concept of "culture" is interpreted as a component of the professionalism of a specialist, as a specific way of doing human activities. The phenomenon of culture is defined as a set of not only material but also spiritual values that reflect the active creative activity of people in the development of the world in the process of harmonizing the relationship between man, society and nature (Pantielieiev, 2018). The Pedagogical Dictionary defines "physical culture" as a part of the general culture of society, "a sphere of social activity aimed at improving health and developing physical abilities of a person" (Yarmachenko, 2001). Physical culture is a set of material and spiritual values of society that are used by it for person's physical improvement (Melnikov, 2015).

The phrase "physical culture" characterizes this concept as a part (type) of culture in general. The initial meaning of the concept of "culture" (Latin for "cultivation") has now expanded significantly. In common sense, it "means certain personal traits, forms, style of behavior and activity of an individual or community, that is, various forms of social life on the one hand, and the results of activity (works, structures, base) on the other".

We agree with Sychov's vision that "physical culture is a process and result of human activities to transform one's physical (bodily) nature; that it is a qualitative characteristic of activity that meets the needs of preparing a person for work, defense of the Motherland, and other forms of life with the help of their physical, biological strengths and capabilities, through health improvement and hardening; it is a branch of activity that meets the needs of society in forming a person's physical readiness for various forms of life" (Sychov, 2010).

Physical culture, as culture in general, is not given to people by nature, but is the result of social and individual creativity. Most often, "physical culture" is understood as the preparation of people for life and work, which involves physical exercises, the use of the healing powers of nature, hygiene and a particular way of life.

The starting point for the development of the phenomenon of "physical culture" was, first of all, the definition of "health" proposed by the World Health Organization (WHO). According to the WHO, "health is a complete physical, mental and social well-being and the absence of disease or infirmity. Secondly, it is the concept of lifestyle. Lifestyle is a biological and social category that integrates the idea of a specific type of human life-sustaining activity. It is characterized by its labor activity, everyday life, satisfaction of material and spiritual needs, individual and social behavior rules (Prysiazhniuk et al., 2007; Miroshnichenko et al., 2023).

We consider it expedient to distinguish the following components in the structure of physical culture: *knowledgeable* (is a formed system of knowledge about the laws and principles of physical culture, the development of a healthy lifestyle and the desire for self-education in health-preserving issues), *motivational* (a system of motivation of the military bachelor's personality to maintain health); *technological* (is the readiness to implement physical culture) and *reflective* (awareness of the importance of physical culture and health-preservation for the military bachelor's professional development).

Since the future professional activities of bachelors studying in a higher military educational institution require maintaining proper physical shape, and their training takes place in a dynamic information environment, developing their physical culture is an essential element of preparation for future activities. The development of the physical culture of bachelors in a military educational institution is ensured by adapting the body to the conditions of the internal and external environment and expanding the reserves of social activity. An essential role in the development of physical culture of bachelors in a military educational institution is played by the health-preserving educational technologies usage.

Experimental work on the development of physical culture of bachelors in the military educational institution was carried out during three interrelated stages: *the first stage*– analysis of literature, determination of criteria and indicators of physical culture development; *the second stage*– the experimental part of the research on the use of health-preserving educational technologies for the development of physical culture of bachelors in the military educational institution; *the third stage*– summarizing the results of the experimental work; formulation of methodological recommendations for instructors on the use of health-preserving educational technologies for the physical culture development of bachelors at the military educational institution.

The results of the analysis of scientific literature, observations, expert surveys and interviews with teaching staff, officers of cadet units, and cadets made it possible to determine the criteria for developing physical culture: *cognitive, motivational, activity-based, and reflective. The cognitive criterion* is characterized by knowledge about physical culture, which allows bachelors in a military educational institution to constantly develop their own physical culture, mainly through a health-preserving program. *The motivational criterion* is characterized by the presence of motivation to develop physical culture, to preserve one's health and manifestations of a health-preserving outlook. *The activity-based criterion* is used to determine the proactive attitude in the use of health-preserving technologies. It reflects the mastery of skills and abilities of a healthy lifestyle. *The reflexive criterion* is characterized by the ability of bachelors in a military educational institution to adequately assess the results of using health-preserving educational technologies; their ability to self-regulate their physical condition, self-development, and self-analysis.

These criteria and indicators allow us to characterize the levels of development of physical culture of bachelors in a military educational institution – high, average, and low.

The ascertaining stage of the pedagogical experiment was attended by 238 bachelors of the 3rd and 4th training years studying at the military educational institution in the specialties referred to as "state border security", "philology", "psychology", "law enforcement", "electronic communications and radio engineering", and "organization of canine units". Specially developed diagnostic cards, survey methods, interviews, questionnaires, and test tasks were used to obtain quantitative data on the defined indicators of the criteria for the development of physical culture of bachelors in the military educational institution.

The generalized results of the ascertaining stage of the experiment allowed us to establish that 19.56 % to 22.28 % of the surveyed bachelors have a high level of physical culture development according to various criteria, 33.38 % to 36.29 %– an average level, and a low level ranging from 36.89 % to 44.16 % of the surveyed bachelors.

The results indicated the need to substantiate how physical culture develops. The main ways to develop physical culture of bachelors in a military educational institution are as follows:

– introduction into the content of the professional training of military bachelors of educational material on the role of healthy lifestyle and health preservation in the physical culture development;

– conducting individual and group consultations with bachelors in a military educational institution on the diagnosis and assessment of their physical health;

– use of health-preserving educational technologies in a military educational institution.

The analysis of scientific pedagogical literature has demonstrated the existence of the following options for explaining the concept of "technology":

– technology in pedagogy is a complex process that combines ideas, means and methods of organizing activities to implement the main educational aspects based on an integrative approach;

– social technology is a system of measures to implement the social component of the educational process;

–awareness-raising technologies are a set of effective influences to maximize the formation of the personality of a future specialist;

– interactive technologies are technologies of interaction between the parties to the communication process and the design of the interaction process;

– technologies of preventive activity area system of techniques, methods, means used by teaching staff and psychologists in the field of preventive activity;

– education technologies aimed at improving a property's cognitive and operational components. The category of "health-preserving educational technologies" combines various technologies for the formation, preservation and strengthening of the health of future professionals.

The analysis shows the versatility of approaches to revealing the content of health-preserving technology, in particular:

– rational regimen of motor activity;

– creation of a favorable psychological microclimate;

– taking into account gender, age, and individual hygiene features in the educational process organization.

The introduction of health-preserving educational technologies requires the use of medical (hygienic, health-promoting, and therapeutic technologies), social, and security technologies.

The essence of health-preserving educational technologies is an adequate and comprehensive assessment of educational conditions that will contribute to the preservation of the health of trainees, the formation of skills for a healthy lifestyle, timely diagnosis of psychophysiological indicators, implementation of corrective activities on health, creating

forecasts of changes in health, improving the quality of the educational environment (Miroshnichenko et al., 2023).

The generalized results of the scientific literature analysis of existing health-preserving educational technologies indicate the presence of the following types of these technologies:

– technologies designed to solve the problems of strengthening physical health resources are called health-improving technologies (these include physiotherapy, body hardening techniques, types of gymnastic exercises, massage, etc.;)

– technologies for creating safe conditions for the educational process organization based on gender, age, sanitary and individual standards are called health-preserving technologies;

– technologies related to hygiene in the educational process and the formation of standard life hygiene skills are health education technologies; they also include the problems of restraining and managing emotions, conflict resolution, avoiding various types of psychological dependence (alcohol, drug, toxin, gambling, etc.);

– formation of personal and professional qualities that influence the preservation and promotion of health, formation of a value-based view of health (increased motivation to lead a healthy lifestyle).

It is *worth* noting that the concept of "health-preserving educational technology" can be attributed to any pedagogical technology that, in the implementation process, creates the necessary conditions for preserving the health of the main subjects of the educational process. The most important thing is that any pedagogical technology should be health-preserving. Health-preserving educational technologies are a system of means that interconnect all factors of the educational environment and are aimed at preserving the individual's health. Understanding these technologies is controversial in the modern pedagogical literature and has different interpretations of the content. The main types of health-preserving educational technologies in the development of the physical culture of bachelors in a military educational institution are medical and preventive, health and fitness, and socio-psychological and valeological.

Health-preserving educational technologies aim to teach bachelors to ensure, preserve and promote health by achieving physical, mental and social well-being.

The main tasks of such technologies are to prevent diseases, optimize the use of time in the educational process of a military educational institution, introduce a healthy lifestyle, develop a culture of health preservation and physical culture in general.

The main objectives of health and fitness activities are:

– involvement of the maximum number of bachelors and instructors in regular, systematic physical education and sports;

– promotion of physical culture;

– involvement of physical educators and athletes of the military educational institution in sporting and mass participation events;

– formation of bachelors' need for a healthy lifestyle. The most effective health and fitness technologies for the development of physical culture are those that use the following methodological principles: gradual and continuous physical load; adequacy of physical load to the level of health; purposefulness of health training means; rhythmic application of means of different orientation; increase in motor activity; systematic performance of unique sets of exercises.

In health-preserving educational technologies, we have identified the following types of technologies:

– for health preservation (ensuring motor activity, vitaminization, organization of healthy nutrition);

– for health improvement (physical training, physiotherapy, hardening, gymnastics, massage, herbal medicine, art therapy, aromatherapy);

– for health education (including relevant topics in general education disciplines).

Using such a health-preserving educational technology as the "Training Program for the Formation of a Healthy Lifestyle" is particularly interesting.

This technology provides for the following:

– providing military bachelors with information on modern approaches to healthy lifestyles and physical culture;

– forming personal motivation for a healthy lifestyle and physical culture development;

– improving military bachelors' skills in promoting healthy lifestyles and physical culture development among colleagues;

– updating the knowledge of cadets about physical culture and health preservation;

– development of health-preserving needs;

– development of skills to assess and predict one's physical condition;

– development of physical self-development skills.

The health-preserving educational technology referred to as the "Training Program for the Formation of a Healthy Lifestyle" was implemented in the experimental group according to the following plan:

1. Introductory part (15-20 minutes): greetings, introductions of participants, determination of mutual expectations from the training. Brainstorming called "Healthy Lifestyle in My Understanding". Familiarization with the objective and the training program.

2. The main part: contains separate blocks.

The Physical Health Development Block (30-40 minutes) involves bachelors listening to a mini-lecture called "Physical Activity and Endurance of a Serviceman" and performing a practical task to develop an individual plan for developing physical activity.

The Nutrition Culture Development Block (30-40 minutes) involves watching videos about healthy and unhealthy foods and discussing "Nutrition without Mistakes".

Mental Health and Stress Resilience Development Block (30-40 minutes) involves bachelors listening to a mini-lecture called "Stress in the Officer's Professional Activities and Ways to Overcome It", participating in a group discussion on overcoming emotional burnout, and doing breathing exercises.

The Block of Developing a Culture of Habits (30-40 minutes) involves watching a movie about bad habits and discussing it, performing interactive exercises using the case method, analyzing real-life situations and finding solutions.

3. Summarizing (10-20 minutes). Analytical review of the effectiveness of the training. Performing mini-exercises to consolidate the acquired knowledge and skills. Recommendations for the development of physical culture through the use of health-preserving educational technologies.

According to the results of the experimental work, for the development of physical culture of bachelors in the military educational institution, along with traditional means and methods of conducting training sessions, it is compulsory to introduce into the educational process non-traditional forms and methods of physical exercises: athletic gymnastics, aerobics, swimming, yoga, health fitness, the use of Scandinavian walking, etc. At this stage, organizing physical culture recreational activities is very important.

The main objectives of physical culture recreational activities are:

–involvement of the maximum number of bachelors and educators in regular, systematic physical education and sports;

– agitation and promotion of physical culture and sports;

– involvement of the broad masses of physical educators and athletes of higher educational institutions in sporting and mass participation events;

– forming the need of bachelors for a healthy lifestyle.

The most effective physical culture and health-promoting technologies of physical education for bachelors are those that use the following methodological principles: gradual and continuous physical load; adequacy of physical load to the level of health; purposefulness of health training means; rhythmic application of means of different orientation; increase in motor activity; systematic performance of unique sets of exercises.

It is essential to ensure the process of forming the need of bachelors for a healthy lifestyle by actualizing the joint activities of all instructors of a military educational institution. This is facilitated by holding scientific and practical conferences on health preservation and promotion, healthy lifestyle, seminars for instructors of health-preserving technologies, etc. However, the mere awareness of instructors about health-preserving technologies will not fully solve the problem of developing bachelors' physical culture and their need for a healthy lifestyle, since it is not enough to be informed, it is necessary to use the knowledge gained in practice.

Therefore, it is necessary to involve instructors in motor activity and to form health groups for instructors in athletic gymnastics, table tennis, aerobics, etc. As a result of informing teaching staff about the introduction of health-preserving technologies at a military educational institution, they will have additional opportunities to receive, accumulate and exchange information on the preservation and promotion of health, the formation of a healthy lifestyle and the need for it, as a result of which instructors will realize the need and benefits of physical education and sports, healthy lifestyle, etc.

The formative stage of the experiment was conducted to test the effectiveness of using health-preserving technologies to develop the physical culture of bachelors in the military educational institution. It involved 326 military bachelors studying at the military educational institution in the specialties referred to as "state border security", "philology", "psychology", "law enforcement", "electronic communications and radio engineering", and "organization of canine units". They were divided into the experimental group (hereinafter referred to as EG) of 162 bachelors and the control group (hereinafter referred to as CG) of 164 bachelors. At the beginning of the formative stage of the experiment, the CG and the EG were identical in

terms of their main characteristics. Health-preserving educational technologies were used during the experimental training.

Changes in the distribution of the military bachelors by levels of physical culture development in the CG and the EG indicate the effectiveness of using health-preserving educational technologies. For example, after their use, the number of bachelors in the EG with a high level of physical culture development increased from 7.9 % at the beginning of the experiment to 16.3 % (an increase of 8.4 %), and in the CG – from 8.4 % to 9.9 % (a rise of 1.5 %). The application of mathematical statistics methods, in particular the Kolmogorov-Smirnov criterion, at the level of significance $p \leq 0.05$ revealed differences in the distribution of the CG and the EG cadets by levels of physical culture development and showed the effectiveness of the use of health-preserving educational technologies (Table).

Table 1. Dynamics of the physical culture development of bachelors in the military educational institution using health-preserving educational technologies

Group	Distribution of bachelors by levels of physical culture development					
	Before the start of the formative stage			After the formative stage		
	Levels			Levels		
	High	Average	Low	High	Average	Low
CG	14 (8.4 %)	66 (40.5 %)	84 (51.1 %)	16 (9.9 %)	68 (41.6 %)	80 (48.5 %)
EG	13 (7.9 %)	65 (40.2 %)	84 (51.9 %)	26 (16.3 %)	77 (47.4 %)	59 (36.3 %)

Source: authors' own concept

Based on the results of the experimental work, methodological recommendations for instructors on the health-preserving educational technologies usage for the development of physical culture of bachelors in a military educational institution have been developed. In particular: taking into account the general and specific didactic principles of physical culture development; optimization of teaching methods when using health-preserving educational technologies, taking into account the psychological characteristics of acquiring new knowledge; development and use of test tasks in the content of health-preserving educational technologies, monitoring the level of development of bachelors' physical culture; directing the content of health-preserving educational technologies to the development of all components of bachelors' physical culture in the military educational institution.

Conclusions

The development of physical culture of bachelors at a military educational institution involves their awareness of the importance of the concepts of "health", "healthy lifestyle", "health preservation" and the active use of health-preserving educational technologies. The following components are distinguished in the structure of physical culture: knowledgeable, motivational; technological and reflective. The criteria for the development of physical culture are determined: cognitive, motivational, activity, reflective. The authors presented the following main ways of developing the physical culture of bachelors in a military educational institution: introducing into the content of professional training of military bachelors educational material on the role of a healthy lifestyle and health preservation in the physical culture development; conducting individual and group consultations with bachelors in a military institution on the diagnosis and assessment of the state of their physical health; using health-preserving educational technologies in a military educational institution. Thus, the usage of health-preserving educational technologies will contribute to the development of bachelors' physical culture.

However, the research does not exhaust all aspects of the problem. Further attention needs to be paid to improving the methodological support of health-preserving educational technologies, taking into account the age and gender aspects in the physical culture development of bachelors in a military educational institution.

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