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Research Article

OPTIMIZATION OF THE CONTENT OF THE PHYSICAL TRAINING PROGRAM OF CADETS-GUNNERS

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ABSTRACT

In order to find out ways to achieve the effectiveness of promoting the operating system of the AF, the acquisition of specialist-gunners operational capabilities to perform military and military functions according to professional purpose, further substantiation of the optimal content of the curriculum created by the list of physical exercises, which will facilitate the effective development of the necessary professional-level cadets, Applied physical and psycho-physiological qualities were conducted theoretical analysis, comparison, systematization and generalization of mate scientific and methodological literature and guidance documents, correlation comparison of the level of formation of physical qualities, acquisition of military-applied motor skills with the professional readiness of cadets-gunners of the National Academy of the Army 2011 issue, an expert survey of military officers of the Physical Training Division of the Ukrainian Armed Forces and scientific and pedagogical staff of physical training, commanders of training units and cadets, which allowed to identify a number of shortcomings that reduce the effectiveness of professional training for ground artillery specialists.

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INTRODUCTION

The problem of qualitative training of officers of the artillery units of the Armed Forces of the Armed Forces of Ukraine at the present stage of development of military equipment, tactics and operative art requires future officers not only a high level of professional preparedness, but also the most effective development of physical and psychological qualities, optimal indicators of functional and physical condition, providing adherence to the appropriate level of professional readiness in conditions of high motor activity of a combat situation and in stressful situations (Olkhovyi O.M., 2012).

The steady increase of the role and expansion of the tasks solved during the fire damage of the enemy, a significant increase in the fire power of the means of destruction (range and accuracy of firing, high-speed, and the power of ammunition) leads to an increase in the requirements for

professional training of specialists of the command line artillery units. In peacetime and wartime, the military-professional activity of officers of units of land-based artillery is related to the elaboration of standards for combat work and warfare, which requires continuous maintenance of comprehensive preparedness (Klymovych V.B. 2017). The present educational process in the walls of higher military educational institutions (universities) urgently needs reformatting and practical practical application of all its components to the new regime of education, conditions of military service, rest, psychological and physical load of cadets (Borodin U.A., 2009). This is accompanied by the adaptation of the youth organism to innovations, will affect the level of physical development and the physical condition of future military professionals, which was the generator of a detailed study of this aspect (Romanchuk S. V., 2012).

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The analysis of recent researches and publications has shown that the greatest activation of the adaptation processes of the functional systems of the youth of the organism to the new conditions of the educational environment and directly the cadet life begins from the first courses, due to the influence on the organism of long and short-term extreme situations (Ostapenko Y. A., 2014). The plan of the consequences of the impact of certain stages of the educational process in higher military educational institutions on the body of young men within the framework of physical training has been studied in detail by Korchagin M., Kurbakova S., Olkhovyi O and others (Korchagin M., Kurbakova S., Olkhovyi O., 2017). However, the researchers do not fully characterize the dynamics of indicators characterizing the adaptation processes occurring in the body of those who study in military education institutions, to transfer the load of the educational system and promising conditions of professional activity by means of AF during the entire training period.

Taking into account the above-mentioned it is supposed that one of the important reasons for the lack of clear definition of the content and methods of obtaining future military officers the adapted to the modern requirements of combat readiness aspects of military-applied skills, methods and technologies for the development of special physical qualities in the current system of the physical training of the University was the present lack of research on the response of functional systems youthful organism on military-applied conditions of studying at a higher military school. What encouraged this study.

MATERIALS AND METHODS

Analysis, systematization and synthesis of scientific, methodological sources and guidelines - to determine the nature of the functioning and the nature of the links between the components and components of the structure of the physical training systems of the military training institutions of the Land Forces.

Correlation of the level of formation of physical qualities, acquisition of military-applied motor skills with the professional readiness of National Academy of the Army artillery cadets.

Expert survey of military officers of the physical training of the Armed Forces of Ukraine and scientific and pedagogical staff of physical training, commanders of training units and cadets.

RESULTS

For further substantiation of the optimal content content of the curriculum created by the list of physical exercises, which will facilitate the effective development of the necessary professional and applied physical and psycho-physiological qualities in the cadets-gunners of the necessary professional-applied physical and psychophysiological qualities, and in order to determine the importance of the influence of these qualities on the degree to which the future officers acquire an appropriate level of operational capability for controlling the actions of ground artillery, we conducted theoretical research, analysis, comparison, systematization and generalization of scientific, norms legal, archival and methodological sources reflecting the investigated aspect. The study focuses on the direction of physical training in the military educational

institutions of the leading countries of NATO, the impact on the body of artillerymen and servicemen of the adjacent specialties of the adverse factors of military professional activity and possible ways to increase the resilience to these factors. The conceptual and normative and programmatic fundamentals of the educational process of cadets, methodological provisions, development and content of future training of future officers in the process of training in military educational institutions of the Armed Forces of Ukraine are analyzed. This provided an opportunity to determine the direction of work, to formulate the purpose and objectives of the study, to determine the ways of their solution.

To determine the numerical value and more detailed identification of the relationship between the level of development of general and special physical qualities, the acquisition of military-applied motor skills with the degree of operational capability of cadets-gunners National Academy of the Army release to perform military and military functions for professional purposes, we conducted a correlation comparison of the estimated the meaning of these indicators.

The results of the conducted research indicate that there is no direct correlation between the degree of professional readiness of future officers-artillers of the the Army of the Armed Forces of Ukraine. and the level of formation of their general physical qualities. It follows that the degree of acquiring cadets of operational capabilities to perform military and military functions on a professional basis is reliably ($r = 0.441-0.591$ at $p < 0.01$) depends on the level of development of their special physical qualities and the formation of military-applied motor skills. (Klymovych Volodymyr, Olkhovoi Oleg, Romanchuk Sergiy, Kurbakova Svetlana, 2016).

To determine the coefficient of importance of the influence of indicators of physical and psycho-physiological qualities on the level of professional readiness of an officer-gunners, we conducted an expert survey.

The basis of the expert survey with the subsequent assessment and the choice of the best option was the objectivity of expert assessments, which was based on the fact that the characteristic of the phenomenon under study is treated as a random variable, whose reflection of the distribution law is an individual expert's assessment of the probability and significance of a particular issue. The true value of the studied characteristic was within the range of estimates obtained from the experts.

In accordance with the Delphi Expert Survey procedure, which is based on the issues under investigation, experts were provided with key questions directly at the time of the questionnaire, they were not allowed to share their thoughts on the problem being solved, which ensured the independence of thought.

The survey procedure was carried out in stages:

experts were asked to answer a list of questions detailed in the problem under study;

each participant answered questions anonymously;

the results of the expert survey were entered into the database of AIS «SAATI», in which, using the "Matrix of paired comparisons", the weight coefficients of the indicators were calculated and the general document was compiled;

Each expert received a copy of the general document, after which a discussion discussion of the problem to be solved was made to correct the components of the system of physical training of cadet-gunners. According to the results of the expert assessment, we determined the weight factors of the promotion of the level of development of physical and psycho-physiological qualities (in all their components) the effectiveness of acquiring officers operational capability to control the actions of land artillery (Table 1).

Table 1 The coefficients of the importance of the influence of indicators of physical and psycho-physiological qualities on the level of professional readiness of the gunner officer.

Indexes	Weight factor
Physical qualities	
Power	0,318
Speed	0,182
Endurance	0,371
Agility	0,096
Flexibility	0,033
Endurance	
General	0,239
High speed	0,251
Strength	0,389
static	0,287
dynamic	0,713
High-speed power	0,085
Coordination	0,066
Psychophysiological qualities	
Professional thinking, perception and processing of information	0,254
Warning	0,267
intensity	0,187
stability	0,293
concentration	0,291
volume	0,136
distribution	0,093
Memory	0,276
operative	0,473
auditory	0,268
visual	0,259
Emotional Stability	0,203

The most important, according to experts, is the quantitative measure of the degree of importance (Table 1) of the physical qualities of power (0.318) and endurance (0.317). At the same time, the general (0.239) and high-speed (0.251) endurance received roughly identical significance of the importance of the impact on the professional readiness of the gunner officer, and the priority among endurance types belongs to the strength (0.389), the component of which - dynamic endurance was the largest weight factor (0.713). The agility and flexibility, speed-force and coordination endurance, according to the expert assessment, have the lowest coefficient of importance in promoting the level of development of the skills of the gunners in the cadets.

Psycho-physiological qualities (see Table 1), professional thinking, perception and processing of information (0.254), memory (0.276) and warning (0.267) received roughly the same expert significance of the importance of influencing the professional readiness of the gunner officer, and as an emotional stability somewhat lower weighting factor (0.203). At the same time, the components of attention - stability (0.293) and concentration (0.291), and memory component operative memory (0.473) received, according to experts, higher weight coefficient.

According to the results of the conducted studies, the need to adjust the content of the program of Physical Training of cadets-gunners during the course of the whole period of study at a higher educational institution was determined and the optimal number of hours according to the sections (topics) in the training programs for Physical Training for the qualitative training of Army Cadets of the Land Forces (gymnastics and athletic training - 32.7%; accelerated movement and athletics - 12.7%; overcoming obstacles and throwing grenades - 14.2%; military-applied swimming and rowing - 6.4%, dogfight - 10.4%, sports and mobile games - 9.5%, comprehensive lessons - 14.1%).

The theoretical researches have been carried out, the correlation dependence of the indicators of professional readiness on the level of development of special physical qualities and the acquisition of military-applied motor skills was discovered, the results of the expert evaluation allowed us to use the results obtained for optimal content filling of the experimental program with physical training. As a result - the author's program of the physical training of cadets-gunners was formed with the use of experimental methodological influence in the form of a directed technology of acquiring military-applied motor skills.

The purpose of the experimental program of the physical training is to effectively promote the means of physical training by the cadets-gunners of the highest possible level of operational capability to perform military and combat functions on a professional basis.

The content of the author's program is aimed at the development of a complex of physical qualities and military-applied motor skills - the strength of major muscle groups (shoulder belt, spine, abdominal muscles, thighs), power (dynamic), speed and aerobic endurance. Taking into account the aforementioned justification, the percentage distribution of hours in the experimental curriculum by sections (topics) of the physical training was reallocated, it significantly differed from the current program with the physical training (Table 2).

Table 2 Distribution of hours in active and experimental training programs by sections (topics) of physical training, %

Section (subject) of physical training	1 year of study		2 year of study		3 year of study		4 year of study	
	AP *	EP *	AP	EP	AP	EP	AP	EP
Gymnastics and athletic training	10	30	15	35	25	35	30	35
Accelerated movement and athletics	25	15	20	15	15	10	10	10
overcoming obstacles and throwing grenades	25	15	25	15	15	15	15	15
military-applied swimming and rowing	10	5	10	5	5	5	5	5
dogfight	20	10	15	10	15	10	10	10
sports and mobile games	5	10	5	10	10	10	10	10
Comprehensive lessons	5	15	10	10	15	15	20	15

Note: *AP – active program physical training; EP – experimental program physical training.

Each military specialty requires a soldier to develop certain physical qualities. The conducted researchers found that the organization of forms of physical training at the initial stages of training in a military educational institution aims at developing and improving the general physical preparedness of the students in order to effectively develop special physical qualities at the next stages of training.

DISCUSSION

The above data confirmed the conclusions of the scholars (Lyzogub V.C., 1999; Olkhovy O. M., 2014; Olkhovyi O. M., 2015). and our assumptions that in order to achieve the maximum level of professional readiness of graduates of the Military Educational Establishments of the Land Forces for professional activity, it is necessary to develop and improve special physical qualities and military-applied motion skills, the level of development of which in the current process of physical training of the officers of the Land Forces of the Armed Forces of Ukraine was poorly developed and significantly lower than the estimated level of general physical qualities ($p < 0,05$; $p < 0.001$). This became a prerequisite for further determination of ways to optimize the structure of the system and the content of the program of physical training of cadets-gunners of Military Educational Establishments to the current requirements of the tactics of conducting land artillery units of the Land Forces of combat operations.

CONCLUSION

Theoretical analysis, study of scientific, methodological, guidance, normative and periodic sources allowed to trace the state of the problem under study, to summarize the available experimental data concerning the effectiveness of training of students according to the results of military education.

The conducted researches revealed a reliable correlation dependence of indicators of professional readiness of cadets-gunners on the level of development of special physical qualities and acquisition of military-applied motor skills.

The results of the expert evaluation allowed us to quickly use the obtained results for optimal content filling of the experimental program with physical training. As a result - the author's program of the physical training of cadets-gunners was formed with the use of experimental methodological influence in the form of a directed technology of acquiring military-applied motor skills.

The above statistical data confirm our assertion that in order to ensure the physical readiness of graduates-gunners to perform tasks for combat and functional purposes, a significant proportion of the contents of the system of the physical training University should be aimed at the development of cadets of special physical qualities and acquisition of military-applied motor skills.

In the future, we continue to search for ways to optimize the structure of the model of the system of physical training of cadets of military educational institutions to the current requirements of the tactics of conducting land artillery units of the Land Forces of combat operations.

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