

consciousness). Stress is an inevitability that you need to be aware of and always remember. At the same time, stress can be anticipated, you can prepare for its arrival and try to cope with it effectively.

Conclusions.

For a modern student, stress is not a supernatural phenomenon, but rather a reaction to accumulated problems, to the endless process of struggling with everyday difficulties. Stress can be caused by factors related to work and organizational activities or events in a person's personal life. Stress in student activity is everyday overload associated with the peculiarities of the learning process at a university and has direct and independent effects on well-being and mental or somatic functions. So, stress is an integral part of every student's daily life. The reaction to stress, as well as the beginning of the working day, diet, physical activity, quality of rest and sleep, relationships with others, are integral parts of lifestyle. It depends on the student himself what his lifestyle will be - healthy, active or unhealthy, passive, and, therefore, how often and for how long he will be in a stressful state. The main causes of stress in students are heavy academic loads, which arise due to a large number of tasks in different academic disciplines. All this leads to haste and constant lack of time. To recuperate, students need good sleep and communication with friends and loved ones.

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THE RESULTS OF THE RESEARCH AND EXPERIMENTAL VERIFICATION OF THE EFFECTIVENESS OF THE ORGANIZATIONAL AND PEDAGOGICAL CONDITIONS FOR THE FORMATION OF THE READINESS OF FUTURE INSTRUCTORS IN FIRE TRAINING FOR PROFESSIONAL ACTIVITY

The development of the latest weapons and equipment, the supply by the "allies" of military aid packages, including modern small arms, dictates new requirements for the training of highly qualified personnel for the needs of the institutions of the security and defense sector of Ukraine. This, in turn, emphasizes the relevance and timeliness of the training of instructors in fire training, because it is this link of military specialists (mentors) that is currently dominant in the direction of training and education of representatives of the institutions of the security and defense sector of Ukraine at various stages of their long-term training.

According to the results of the analysis of the scientific and methodological literature by the members of the scientific research group, it was established that empirical studies that comprehensively reveal the peculiarities of the organization of the

training system of future instructors in fire training (with an emphasis on the use of special physical training) are rare. This emphasizes the relevance, timeliness and applied orientation of the chosen direction of scientific research.

During the research, the following methods were used: abstraction, analysis and synthesis, induction and deduction, modeling, mathematical and statistical, experience in the organization of the system of fire and physical (special physical) training of military personnel of institutions of the security and defense sector of Ukraine.

As a result of the empirical research, we adjusted and tested the organizational and pedagogical conditions for the formation of the readiness of future fire training instructors for professional activity with an emphasis on the use of special physical training tools. It should be noted that the introduction of means of special physical training, as well as modern scientific tools into the training system of fire training instructors (in accordance with the main stages of the pedagogical experiment) accelerated the process of forming key competencies and professional skills necessary for making accurate shots from various types of small arms.

Prospects for further research in the chosen direction of scientific intelligence include the development of a methodology for the formation of military-applied small arms shooting skills of recruits of the National Guard of Ukraine at the initial stage of primary military professional training (with an emphasis on the use of modern technical training tools).

Keywords: approbation, biomechanics, fire training, readiness, research, experiment, instructors, pedagogical conditions, professional training, special physical training, physical fitness

Самсонов Юрій, Афанасьєв Володимир, Кривич Віталій, Торяник Дмитро, Літвінов Олексій, Острижний Олександр. Результати перевірки ефективності педагогічних умов формування готовності майбутніх інструкторів з вогневої підготовки до професійної діяльності. Відповідно до результатів аналізу науково-методичної літератури членами науково-дослідної групи встановлено, що емпіричних досліджень, які комплексно розкривають особливості організації системи підготовки майбутніх інструкторів з вогневої підготовки (із акцентованим використанням засобів спеціальної фізичної підготовки) зустрічаються рідко. Це підкреслює актуальність, своєчасність та прикладну спрямованість обраного напрямку наукової розвідки.

Під час дослідження були використані наступні методи: абстрагування, аналіз і синтез, індукція і дедукція, моделювання, математично-статистичні, досвід організації системи вогневої та фізичної (спеціальної фізичної) підготовки військовослужбовців інституцій сектору безпеки і оборони України.

В результаті емпіричного дослідження нами скориговано та апробовано організаційно-педагогічні умови формування готовності майбутніх інструкторів з вогневої підготовки до професійної діяльності із акцентованим використанням засобів спеціальної фізичної підготовки. Необхідно відмітити, що впровадження засобів спеціальної фізичної підготовки, а також сучасного наукового інструментарію в систему підготовки інструкторів з вогневої підготовки (відповідно до основних етапів педагогічного експерименту) прискорило процес формування ключових компетентностей та професійних навичок необхідних для здійснення влучних пострілів із різних зразків стрілецької зброї.

Перспективи подальших досліджень у обраному напрямі наукової розвідки передбачають розроблення методики формування військово-прикладних навичок стрільби зі стрілецької зброї рекрутів Національної гвардії України на початковому етапі первинної військово-професійної підготовки (із акцентованим використанням сучасних технічних засобів навчання).

Ключові слова: апробація, біомеханіка, вогнева підготовка, готовність, дослідження, експеримент, інструктори, педагогічні умови, професійна підготовка, спеціальна фізична підготовка, фізична підготовленість

Introduction. The protection of the sovereignty and territorial integrity of the state in today's realities requires high professional training from representatives of the institutions of the security and defense sector of Ukraine. It should be emphasized that the training (retraining) of military specialists for the needs of the institutions of the security and defense sector of Ukraine (SDSU) is carried out in higher military educational institutions, educational centers of the relevant institution (including abroad), as well as in higher education institutions with specific study conditions.

Based on the analysis of the scientific works of scientists: Ye. Bashkatova, A. Bukhuna, O. Lavnichenko, Ya. Pavlova, O. Shmakov (and others), it is expedient to state that the leading role in the professional training of military personnel of SDSU institutions is played by instructors. It should be noted that according to the main list of departmental regulatory documents of SDSU institutions, the main subjects of combat training are: tactical (tactical-special), fire, pre-medical and physical (special physical) training.

In turn, the change in the military doctrine of Ukraine, the transition of SDSU institutions to NATO standards requires changes in the personnel training system for the needs of the Defense and Security Forces of Ukraine, especially in the direction of the professional development of teachers and instructors (in the relevant military accounting specialties), which in the future will contribute a more competent and rational approach to solving the tasks of professional training of representatives of the studied category.

The development of the latest weapons and equipment, the supply by the "allies" of military aid packages, including modern small arms, dictates new requirements for the training of highly qualified personnel for the needs of SDSU institutions. This, in turn, emphasizes the relevance and timeliness of the training of fire training instructors, because it is this link of military specialists (mentors) that is currently dominant in the direction of training and education of representatives of SDSU institutions at various stages of their long-term training.

It is necessary to emphasize that during practical classes (trainings), fire training instructors are in "zones" of significant psychophysical stress, which, with low individual physical (methodical in a military specialty) preparedness, can slow down and in

some cases even level the process of formation of practical skills firing of various types of small arms by military personnel of various categories who are studying. Under such circumstances, there is an obvious need to develop a modernized program for the professional development of future instructors in fire training, which, in addition to special military theoretical knowledge and practical skills, involves the use of special physical training.

In view of the above, it is appropriate to state that the stable skills of using modern small arms by representatives of SDSU institutions in conditions of significant psychophysical stress (extreme conditions of service and combat activity) will in the future provide an advantage over the enemy during possible fire contacts. This, in turn, will contribute to the victory of the Security and Defense Forces of Ukraine over the troops of the Russian Federation and their allies (and other aggressors).

The empirical study was organized in accordance with the plan of the initiative scientific project "Weapon Instructor, 2022-2025" with the participation of military specialists in fire and special physical training: of the National Academy of the National Guard of Ukraine; Kyiv Institute of the National Guard of Ukraine; training centers (military units) that train firearms instructors for the needs of SDSU institutions, as well as specialized departments of higher military educational institutions in accordance with agreements on interdepartmental cooperation.

The analysis of the latest research and publications focused the attention of the members of the research group on scientific works: T. Bilous [1], S. Chupakhin [16], S. Marchenkova [6], O. Khatsayuk, O. Kolomoys, V. Gogots, V. Kuzmenka, S. Oleksienko, S. Kyslytsi [14] and other scientists and practitioners (A. Bukhuna, E. Denisenko, Ya. Pavlova, O. Shabalina, V. Shemchuk) - who highlighted the current issues of the organization of the professional education system of military personnel various categories of SDSU institutions.

No less interesting, performed at a high scientific and methodological level, are the works of: V. Retsia [9], H. Vorobets [2], Yu. Samsonova, O. Markova, E. Zabuly, O. Khatsayuka (and others) [10] and other specialists (E. Garbara, K. Zadorozhny, T. Magmet, V. Mykhailichenko, O. Povara), in which topical issues of the organization of the system of fire training of representatives of the Defense and Security Forces of Ukraine are revealed.

In the process of further monitoring of scientific and methodological and special literature, the attention of the members of the scientific research group was drawn to the scientific works of: O. Husak [3], O. Khatsaiuk, M. Medvid, B. Maksymchuk, O. Kurok, P. Dziuba (and others.) [5], Yu. Samsonova, N. Partiko, K. Dyachenko, M. Kurilova, B. Kushnaryova, A. Khomenka [11], M. Medvid, O. Khatsaiuk, K. Sydorchenko, S. Vorok, A. Kernas, M. Borovyk [7] and other scientists and practitioners (O. Yevdokimova, O. Morgunova, P. Chervonogo, V. Shemchuk, O. Yareschenko) - in which effective methods (technologies) are defined that ensure the formation of the readiness of representatives of the studied categories for professional activity with an emphasis on the use of physical and special physical training.

Interesting in their content and essential characteristics are the works of scientists: Yu. Samsonov, O. Khatsauk, O. Litvinov, V. Vyaskova, O. Smagina, S. Shabatura [12], O. Khatsauk, P. Pistryak, O. Litvinov, G. Samsonova, O. Abdrakhimova [15], R. Kizyan, O. Khatsauk, O. Biryukov [4] and other specialists (A. Lutsikova, M. Medvidya, A. Nikonenko, V. Sokolovsky, Yu. Chernichenko, Yu. Yurchak) - in which effective pedagogical models (technologies), programs, methods are defined, which ensure the formation of servicemen of SDSU institutions for professional activities, which involve the use of modern firearms (high-precision) weapons.

In terms of empirical research, it is necessary to note the scientific concepts (works) of scientists: F. Popov, O. Marchenko [8], R. Ustilovsky, V. Kryvykh, R. Anatsky, L. Tomich, D. Kaplyuk, T. Grom, V. Mazura [13], V. Shvetsia, Yu. Pavlova, I. Bodnar [17] and other specialists (S. Bugria, A. Meleshka, V. Mykhailichenko, I. Orlenka, Yu. Samsonova, V. Tyutyunnyka, O. Khatsayuk) - which reveal the features of the comprehensive training of instructors in the relevant military accounting specialty.

As a result of the monitoring of specialized Internet resources (analysis of scientific and methodological literature) by members of the scientific research group (SRG), it was established that empirical studies that comprehensively reveal the peculiarities of the organization of the system of training future instructors in fire training (including with the accented use of physical training and special physical training) are rare. This emphasizes the relevance, timeliness and applied orientation of the chosen direction of scientific research. In addition, it should be noted that the individual scientific concepts of the above-mentioned scientists and practitioners are currently outdated and do not take into account the combat experience of representatives of the Defense and Security Forces of Ukraine.

The purpose of the scientific article. The main goal of the study is to adjust and test the organizational and pedagogical conditions for the formation of the readiness of future fire training instructors for professional activities with an emphasis on the use of special physical training tools (on the example of servicemen of the National Guard of Ukraine who study at fire training instructor courses).

To achieve the goal of the study, it was planned to solve the following tasks:

- 1) conduct an analysis of scientific and methodological literature in the direction of organizing the system of professional education of servicemen of various categories of SDSU institutions;
- 2) to carry out monitoring of specialized Internet resources (analysis of scientific and methodological and reference literature) in the direction of organization of the fire training system of representatives of the Defense and Security Forces of Ukraine;
- 3) to analyze the available methods (technologies) that ensure the formation of the readiness of the representatives of the researched category for professional activity with an emphasis on the use of physical and special physical training;
- 4) to determine effective pedagogical models (technologies), programs, methods that ensure the formation of the readiness of servicemen of SDSU institutions for professional activities that involve the use of modern firearms (high-precision) weapons;
- 5) carry out an analysis of special and reference literature in the direction of comprehensive training of instructors in the relevant military accounting specialty.

Materials and Methods: abstraction, analysis and synthesis, induction and deduction, modeling, mathematical and statistical (correlation analysis, factor analysis, scaling). In addition, in the process of research and analytical work, the members of the research group used the experience of organizing the system of fire and physical (special physical) training of servicemen of various categories of SDSU institutions.

Results. Leading scientists and practitioners were involved in the scientific project "Weapon Instructor, 2022-2025" to qualitatively work out the tasks set for the members of SRG No. 2 (the third stage of empirical research), namely:

Yu. Samsonov, O. Khatsayuk, G. Samsonova (administration, idea, general management of the scientific project, methodology, approval of the working hypothesis, management of the stages of empirical research);

V. Afanasyev, V. Kryvykh (correction of the experimental program, approval of working materials, questionnaire results);

O. Litvinov, O. Ostryzhny (analytics, conceptualization, financing, research, questionnaires, systematization of experimental data, mathematical statistics, instrumental support);

D. Toryanyk, S. Dolya (software, scientific and methodological support, statistical data processing).

During the previous stages, the members of SRG 1 (Yu. Samsonov, O. Markov, V. Yevseev, O. Mulyenko, V. Kovalenko, D. Kaplyuk, S. Dolya) determined the essential characteristics, as well as the criteria (levels) of the readiness of future instructors with fire training for professional activity, in addition, on the basis of the obtained data, experimental organizational and pedagogical conditions for the formation of the readiness of future fire training instructors for professional activity with an accented use of special physical training tools were developed.

In order to verify the effectiveness of the above-mentioned organizational and pedagogical conditions, the members of SRG 2 adjusted and adapted them to the conditions of their direct implementation. Experimental organizational and pedagogical conditions were planned to be implemented during three stages: organizational and diagnostic, formative and constant.

The organization of the pedagogical experiment included: obtaining permission from the command to make appropriate changes to the current training programs for cadets; obtaining the consent of experiment participants (cadets, instructors, teachers, medical staff) to the processing of personal data and their participation in the pedagogical experiment.

The cadets (n=31 people) of one of the training units of the National Guard of Ukraine (for security reasons, the numbering and the place of deployment are not disclosed) took part in the pedagogical experiment, who are studying according to the training program for instructors in fire training. In order to qualitatively practice the tasks, set before us, the participants of the pedagogical experiment were divided into two groups - control (Kg, n=15 people) and experimental (Eg, n=16 people).

In addition, we define:

1) independent variables – the algorithm of passing the main stages (organizational-diagnostic, formative and constant) by cadets who study under the fire training instructor training program with an emphasis on the use of special physical training;

2) dependent variables – the level of theoretical, methodical, practical training in the military accounting specialty (fire training instructor) and the individual level of special physical training, which ensures readiness for professional activity.

Необхідно підкреслити, що представники Кг та Ег на початку педагогічного експерименту суттєво не розрізнялися за рівнями: теоретичної, методичної, практичної підготовки (згідно з військовою спеціальністю) і рівнем спеціального фізичного тренування, завдяки чому забезпечено однорідність складу груп. Крім того, беручи участь у педагогічному експерименті, Ег використовували експериментальні організаційні та педагогічні умови, запропоновані членами СРГ 1 і адаптовані нами (представниками СРГ № 2). Натомість, Ег, які брали участь у педагогічному експерименті, навчання та тренування проводили традиційно (згідно з поточною навчальною програмою).

The results of diagnosing the levels of formation: theoretical, methodical, practical training (according to the military accounting specialty) and the level of special physical training of cadets Kg and Eg for professional activity during the pedagogical experiment are given in fig. 1.

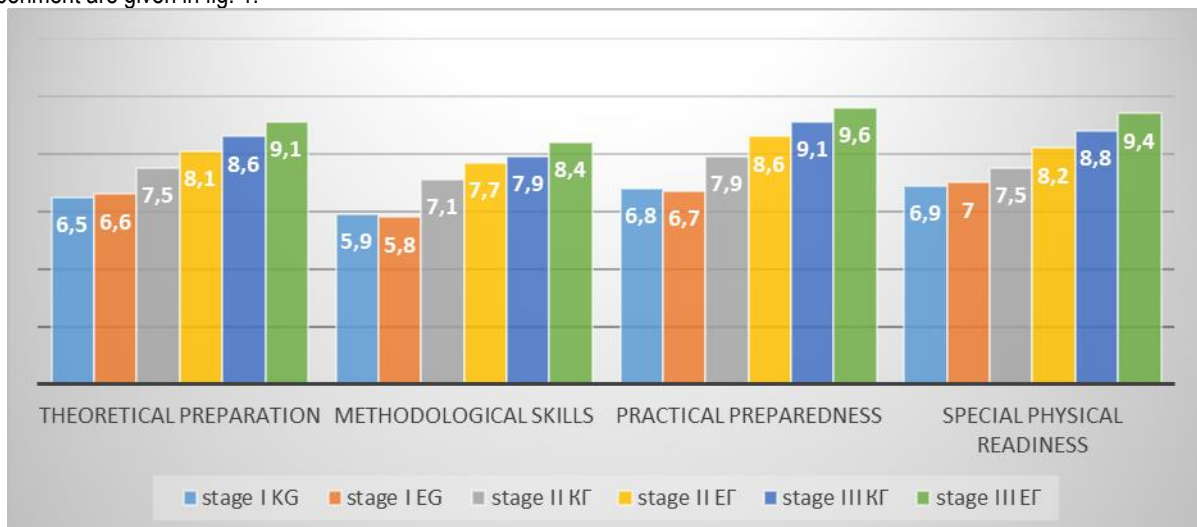


Рис. 1. Динаміка рівнів формування: теоретичної, методичної, практичної підготовки (за військовою спеціальністю) і рівня спеціального фізичного тренування представників Кг та Ег для професійної діяльності протягом педагогічного експерименту (визначено в балах за оцінкою експертів, де "10" – це максимальний бал, а "1" – це мінімум)

Discussion. The analysis of the obtained results confirmed the positive dynamics of the formation of the readiness of the

representatives of the studied category (Kg and Eg cadets) for professional activities, however, the above-mentioned changes were not significantly expressed in the Kg cadets (see Fig. 1). It should also be noted that in the process of comparing the results of the pedagogical experiment before and after its end, the members of SRG No. 2 became aware that the empirical values of the criterion χ^2 for the cadets Kg are less than the critical one (the characteristics of the compared groups coincide at the significance level of 0.05; for the cadets Eg listed above, the indicators of the χ^2 criterion are greater than the critical one, the reliability of the difference in the characteristics of the compared groups is 95%).

Therefore, the obtained results are reliable and allow us to formulate the conclusion that the differences are not accidental, but systemic and testify to the effectiveness of the experimental organizational and pedagogical conditions proposed by the members of SRG 1 and adjusted by the members of SRG No. 2 using means of special physical training.

In view of the above, it is expedient to state that the tasks set before us have been fulfilled, and the main goal has been achieved.

Conclusions. As a result of the empirical research, the members of the scientific research group adjusted and tested the organizational and pedagogical conditions for the formation of the readiness of future fire training instructors for professional activity with an emphasis on the use of special physical training tools (on the example of servicemen of the National Guard of Ukraine who study at courses of fire training instructors).

The organizational and pedagogical conditions developed by the members of the research group were implemented during three stages: organizational and diagnostic, formative and constant (with appropriate educational, methodological and technical support). It should be emphasized that the implementation of each of the stages in accordance with the plan of the initiative scientific project "Weapon Instructor, 2022-2025" ensured the formation of key (professional) competencies in future fire training instructors. This, in turn, intensified and modernized the system of fire training of servicemen of the National Guard of Ukraine, which ensures high-quality performance of assigned tasks by representatives of the studied category in extreme conditions of service and combat activity.

Also important is the fact that the implementation of special physical training tools, as well as modern scientific tools in the training system of fire training instructors (in accordance with the main stages of the pedagogical experiment) ensured an increase in the following indicators: the strength of individual biolinks (in N); special power endurance; tactile sensitivity; speed and strength qualities of muscles; flexibility; coordination (vestibular stability). This, in turn, had a positive effect on the formation of key professional competencies and professional skills necessary for effective shots from various types of small arms.

It should be highlighted that the organizational and pedagogical conditions adjusted by the members of the research group No. 2 additionally provided the Eg cadets with: optimization of the trigger force vector application; smoothness of descent (gradual increase of pressure on the trigger); control of moment of force and moments of oscillations in unsupported phases relative to various axes; understanding moments of inertia; rational optimization of the angular speed of the general center of mass of the body, individual biolinks (in degrees/sec); increasing the number of effective shots per unit of time (in accordance with the requirements of the "Firing Course"; increasing the pace and speed of fire; balancing the vector and momentum of the force of pressure on the trigger; optimizing the trajectory of the movement of the general center of mass and its individual biolinks, which in general contributed to the optimization of the conditions for the organization of pedagogical experiment and accelerated the process of professional development of future fire training instructors (Eg cadets) at the level of the biomechanical control subsystem.

The results of the research are implemented in the system of training future instructors in fire training (cadets of the training units of the National Guard of Ukraine). Separate results of an empirical study of the implementation of the system of fire and physical training of cadets of the National Guard of Ukraine and the Kyiv Institute of the National Guard of Ukraine.

Prospects for further research in the chosen direction of scientific intelligence include the development of a methodology for the formation of military-applied skills (techniques) of shooting with automatic small arms of recruits of the National Guard of Ukraine at the initial stage of primary military-professional training (with an emphasis on the use of modern technical training tools).

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