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PECULIARITIES OF PSYCHOPHYSIOLOGICAL ADAPTATION OF LAW ENFORCEMENT OFFICERS TO THE CONDITIONS OF THEIR PROFESSIONAL ACTIVITIES

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The research aimed to investigate the dynamics of indicators of adaptive capacities of first-time certified law enforcement officers during their initial professional training courses and after one year of service. The research involved 54 law enforcement officers of the third service-related category (law enforcement officers of higher educational institutions with specific training environment) aged 20–24 years, who were included in the experimental (EG, n = 28) and the control (CG, n = 26) groups. The main difference between the EG and the CG was the ratio of general and special physical training during their initial professional training courses. The adaptive capacities of law enforcement officers were studied using the adaptive potential of the cardiovascular system. It was found that the law enforcement officers in the EG had significantly better indicators of adaptive potential than those of the CG by 0.08 c. u. ($p < 0.05-0.01$) at the end of the initial professional training courses, as well as after one year of their service. This proves the positive impact of physical training sessions according to the experimental program, which was developed taking into account the service-related categories of first-time certified law enforcement officers, on accelerating their psychophysiological adaptation to future professional activities.

Key words: adaptation, adaptive capacities, law enforcement officers, professional training, physical training.

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ОСОБЛИВОСТІ ПСИХОФІЗІОЛОГІЧНОЇ АДАПТАЦІЇ ПРАВООХОРОНЦІВ ДО УМОВ ПРОФЕСІЙНОЇ ДІЯЛЬНОСТІ

Метою було дослідити динаміку показників адаптаційних можливостей вперше атестованих правоохоронців під час навчання на курсах первинної професійної підготовки та через один рік служби. У дослідженні взяли участь 54 правоохоронці третьої службово-посадової категорії (правоохоронці закладів вищої освіти зі специфічними умовами навчання) віком 20-24 роки, які увійшли до експериментальної (ЕГ, n=28) та контрольної (КГ, n=26) груп. Основна відмінність між ЕГ і КГ полягала у співвідношенні обсягів загальної та спеціальної фізичної підготовки на курсах первинної професійної підготовки. Адаптаційні можливості правоохоронців досліджувалися за допомогою адаптаційного потенціалу серцево-судинної системи. Виявлено, що у правоохоронців ЕГ наприкінці курсів первинної професійної підготовки, а також через один рік служби, показники адаптаційного потенціалу є достовірно кращими, ніж у КГ, на 0.08 у.о. ($p < 0.05-0.01$). Це доводить позитивний вплив занять фізичною підготовкою за експериментальною програмою, яка розроблена із урахуванням службово-посадових категорій вперше атестованих правоохоронців, на прискорення їх психофізіологічної адаптації до майбутньої професійної діяльності.

Ключові слова: адаптація, адаптаційні можливості, правоохоронці, професійна підготовка, фізична підготовка.

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The professional training of law enforcement officers is a crucial factor in the quality of law enforcement activities, providing legitimacy and the fight against crime. Initial professional training courses have been created to ensure a high level of professional training for law enforcement officers and effective progress in their professional development. Such courses are created at higher educational institutions with specific training environment and their duration, depending on the specifics of the future professional activities of law enforcement officers, can range from three to six months. It is difficult for first-time certified law enforcement officers to adapt to the new conditions during their initial professional training courses because yesterday's civilians find themselves in new conditions of educational and service activities, and new life situations, which is accompanied by a significant restructuring of mental and physiological states. At the same time, the adaptation of law enforcement officers takes place at several levels: didactic (adaptation to the new system of training and service), socio-psychological (joining a new team, new relationships), and professional (perception of the values of the future service activities, orientation to them) [7, 9].

Once in the initial professional training courses, first-time certified law enforcement officers face certain difficulties related to the specifics of the educational process and service activities. The more

successfully and quickly they adapt to the new conditions, the more effective their professional activities will be in the future [11].

According to scientists [2, 14], the adaptation process covers the following areas of the life of first-time certified law enforcement officers: professional, social, psychological, and physiological. Depending on this, there are the following types of adaptation of law enforcement officers to professional activities: professional, social, and psychophysiological. Professional adaptation is interpreted as an individual's adaptation to new working conditions, mastering value orientations within the profession, awareness of the main motives and basic goal in a new activity for an individual, convergence of internal, subjective norms of a person and a professional group, mastering the main components of professional activities [10]. Regarding social adaptation, scientists [13] note that a young person, when entering initial training courses, faces certain stressful situations that have a significant impact on his or her personality and are aimed at developing the necessary professionally important qualities. The authors note that a person reacts to stressful situations primarily with the state of the nervous system and are convinced that the effectiveness of social adaptation of a future law enforcement officer depends on the quality of the organization of the educational process during their initial professional training courses. Psychophysiological adaptation is understood as the adaptation of a person to new physical and psychological stress, and physiological working conditions [15]. Working conditions, which are defined as a set of factors in the production environment, significantly affect the well-being, mood, and working capacity of employees, and, if they are prolonged, their health status, which is expressed in the dynamics of diseases, injuries, and fatigue. Scientists note that the process of psychophysiological adaptation depends largely on the physical condition and health of law enforcement officers (their adaptive capacities), and their body's natural reactions to the level and fluctuations of external factors (stress) in the course of professional activities [3].

The analysis of scientific works on the problems of law enforcement officers' adaptation to professional activities has shown that most of them deal with professional and social adaptation. There has been little research on improving the success of the psychophysiological adaptation of first-time certified law enforcement officers. According to many scientists [1, 12], an effective means of forming and accelerating the psychophysiological adaptation of law enforcement officers to future professional activities is physical training, which is an integral part of professional training and contributes to the effective performance of service tasks, ensuring the personal safety of law enforcement officers and their environment.

The purpose of the study was to investigate the dynamics of indicators of adaptive capacities of first-time certified law enforcement officers during their initial professional training courses and after one year of service.

Materials and methods. The research was conducted at the Department of Legal Psychology of the National Academy of Internal Affairs (NAIA, Kyiv, Ukraine) in 2022. The research involved first-time certified law enforcement officers (aged 20–24) of the third service-related category (law enforcement officers of higher educational institutions with specific training environment ($n = 54$)) who attended initial professional training courses at the NAIA. Two groups of law enforcement officers were created: the experimental group (EG, $n = 28$) and the control group (CG, $n = 26$). Physical training (PT) sessions were organized following the author's program in the EG and they were conducted under the traditional program for initial professional training courses in the CG. The total number of hours for physical training in the EG and the CG was the same (4 hours per week), only the content of training sessions differed – the ratio of general physical training (GPT) and special physical training (SPT): 70 % of training sessions was prearranged for GPT and 30 % for SPT in the EG, and, on the contrary – 30 % of training sessions was given for GPT and 70 % to SPT in the CG.

Research methods: analysis and generalization of specialized literature, pedagogical observation, pedagogical experiment, and methods of mathematical statistics. Adaptive capacities of law enforcement officers were determined through adaptive potential (AP) of the cardiovascular system, the method of determination of which was proposed by R. M. Baievskiy [8]. The AP characterizes the degree of adaptation of the body to environmental conditions and is an important criterion of health. Since the cardiovascular system is a generalized indicator of the adaptive reactions of the whole organism, the AP is considered a complex indicator of the relationship between age, indicators of the functioning of the circulatory system (heart rate, blood pressure), and physical development (body weight and body length). The lower the AP value, the higher the adaptive capacity of the law enforcement officers' circulatory system. The AP was determined by the formula:

$AP = 0.011 \text{ HR} + 0.014 \text{ SBP} + 0.008 \text{ DBP} + 0.014 \text{ age} + 0.009 \text{ body weight} - 0.009 - \text{body length} - 0.27,$

where HR is the resting heart rate in 1 minute (beats per minute),

SBP – systolic blood pressure (mm Hg),

DBP – diastolic blood pressure (mm Hg).

Body weight was measured in kg, height in cm, and age in full years. The level of adaptive capacity of the first-time certified law enforcement officers was assessed as follows: if the AP value was ≤ 2.10 c. u., the adaptive capacity was assessed as “satisfactory adaptation”; if the AP was in the range of 2.11–3.20 c. u. – “tension in adaptation mechanisms”; if the AP was in the range of 3.21–4.30 c. u. – “unsatisfactory adaptation”; if the AP was ≥ 4.31 c. u. – “failure of adaptation”.

The research was conducted based on the results of the dispensary examination of law enforcement officers: upon admission to the initial professional training courses (1st stage), during their completion (2nd stage), and after one year of service upon completion of the courses (3rd stage).

The significance of the difference between the studied indicators was determined by means of Student’s t-test. The significance for all statistical tests was set at $p < 0.05$. All statistical analyses were performed with the IBM SPSS Statistics 21 software, adapted to medical and biological researches.

This study followed the regulations of the World Medical Association Declaration of Helsinki. The procedure for organizing the research was previously agreed upon with the Commission on Academic Integrity and Ethics of the National Academy of Internal Affairs. The topic of the research was approved by the Academic Council of the National Academy of Internal Affairs (Protocol No. 5 of January 03, 2022). Informed consent was obtained from all law enforcement officers who participated in this research.

Results of the study and their discussion. Physical training, as one of the main subjects of initial professional training courses, has significant potential to accelerate the process of adaptation of first-time certified law enforcement officers to new conditions of service and professional activities, improve their health, and increase the functional reserves of the body. However, the analysis of regulatory documents on the organization of physical education during initial professional training courses revealed several reasons that reduce its effectiveness: low level of physical fitness and health of candidates for service in the National Police of Ukraine; insufficient consideration of service-related categories and specifics of future service activities of law enforcement officers; significant amount of special physical training sessions. The way to solve this problem is to improve the current program of physical education for first-time certified law enforcement officers during their initial professional training courses by introducing a new procedure for planning and organizing physical training depending on the service-related categories of law enforcement officers and the specifics of their future professional activities.

Depending on the nature and specifics of their service, all personnel of the National Police is divided into three categories: first – police officers of special police units; second – police officers of territorial (separate) units of a police body; third – police officers of structural units of the National Police, executive departments of territorial (interregional) bodies of the National Police, the Main Directorate of the National Police, establishments and higher educational institutions with specific training environment.

Physical education during the initial professional training courses is divided into GPT and SPT. A high level of GPT allows developing basic physical qualities, improving functional capacities of the body, promoting health, increasing working capacity and forming the basis for the development of special qualities of first-time certified law enforcement officers. It is impossible to develop special physical qualities and improve the effectiveness of professional activities in the absence of a sufficient level of GPT. The analysis of the curricula of the initial professional training courses showed that most of the time is allocated to SPT out of the total time for PT sessions. However, the content of PT sessions for law enforcement officers of different service-related categories should differ in terms of the amount of GPT and SPT. Thus, for officers of the third category, whose future activities are carried out in higher educational institutions with specific training environment and are associated with high intellectual, and neuropsychological stress with insufficient physical activity and low motor activity, the ratio of the volumes of GPT and SPT in percentage should be 70/30; for the second category – 50/50, and for law enforcement officers of the first category, whose service activities constantly involve significant physical and psychological stress – 30/70. But if the ratio of means in terms of GPT and SPT during the primary professional training courses for law enforcement officers of the first category is sufficiently justified, then for law enforcement officers of the third category, the system of organizing and conducting PT during the initial professional training courses requires improvement. Therefore, based on the work of scientists and taking into account the results of research studies, we proposed the author’s program for

improving PT of first-time certified law enforcement officers, the essence of which is to accelerate their psychophysiological adaptation to the conditions of service activities, promote their health, and improve their physical condition by using PT means depending on the service-related categories of law enforcement officers. The experimental program was introduced into the system of PT during the initial professional training courses of the NAIA. The effectiveness of the program was evaluated based on the indicators of the adaptation capabilities of the cardiovascular system of law enforcement officers of the EG and the CG.

The AP of law enforcement officers of both groups was significantly the same ($p > 0.05$) and was characterized by “tension in adaptation mechanisms” at the beginning of the experiment. The value of the AP in the EG was significantly better than in the CG by 0.08 c. u. ($p < 0.05-0.01$) during the 2nd and the 3rd stages. The analysis of the dynamics of the AP during the experiment showed that its value improved by 0.10 c. u. after the completion of the initial professional training courses ($p < 0.01$) in the EG and it only enhanced by 0.01 c. u. ($p > 0.05$) in the CG (Table 1).

Table 1

The level and dynamics of the adaptive potential of law enforcement officers of the EG and the CG during the pedagogical experiment (in c. u.)

Stages of research	EG (n=28)			CG (n=26)			Reliability of the difference	
	X	σ	m	X	σ	m	t	p
	1	2.21	0.14	0.03	2.20	0.12	0.02	0.21
2	2.11	0.12	0.02	2.19	0.10	0.02	2.48	<0.05
3	2.12	0.10	0.02	2.20	0.10	0.02	2.91	<0.01
p1-p2	t=2.77; p<0.01			t=0.35; p>0.05				
p2-p3	t=0.35; p>0.05			t=0.35; p>0.05				
p1-p3	t=2.46; p<0.05			t=0.24; p>0.05				

Note: X – arithmetic mean; σ – mean-square deviation; m – mean-square deviation error; t – Student’s t-test; p – reliability of the difference between the indicators of the EG and the CG; p3-p2, p2-p1, p3-p1 – reliability of the difference between the indicators of law enforcement officers of the studied groups at different stages of the research

The analysis of the ratio of the number of law enforcement officers with different levels of adaptive capacities at the beginning of the research and after completion of the initial professional training courses showed that 71.4 % of law enforcement officers were characterized by the tension in adaptation mechanisms, 28.6 % – by satisfactory adaptation in the EG at the beginning of the experiment. 76.9 % of law enforcement officers’ adaptive capacities were assessed as having tension in the adaptation mechanism and 23.1 % as such having satisfactory adaptation in the CG at the beginning of the research. The ratio of levels in the EG changed after completing the courses: 50.0 % of law enforcement officers had satisfactory adaptation, and 50.0 % had tension in adaptation mechanisms. The ratio remained almost unchanged in the CG: 73.1 % of law enforcement officers were characterized by tension in their adaptation mechanisms and 26.9 % by satisfactory adaptation.

The problem of adaptation in its various aspects has been studied quite extensively [4]. Adaptation is interpreted as changes that accompany the process of an individual’s active adaptation to new living conditions. Scientists [7] argue that adaptation processes are aimed at ensuring a moving, balanced state of any system, which is maintained by its counteraction to external and internal factors that disturb this equilibrium. A decisive role in the success of adaptation to new conditions of activities is played by training processes that improve the functional, mental, and moral states of an individual.

The specifics of adaptation of first-time certified law enforcement officers are determined by the nature of their future service activities and the conditions in which they are carried out. Without adaptation, it is impossible to ensure the professional reliability of the personnel, which is the ability of a law enforcement officer to confidently, successfully, and effectively perform his or her functional duties both in normal and extreme conditions of service activities [9].

According to scientists [4], psychophysiological adaptation to unusual conditions of activities is characterized by a relatively stable state of the body when the conditions of activities do not require a high “price” from functional systems to ensure this stability. The criterion for determining the degree of psychophysiological adaptation is the minimal shifts in the body’s functioning that occur in unusual conditions of professional activities compared to the body’s functioning in the normal mode of work and rest. The analysis of scientific works [5] showed that physical training aimed at maintaining an optimal working capacity of law enforcement officers can have a positive impact on psychophysiological adaptation.

Our research on the indicators of the AP of first-time certified law enforcement officers has shown that GPT sessions are more effective than SPT sessions in accelerating the process of adaptation of first-time certified law enforcement officers of the third service-related category to future professional activities during their initial professional training courses.

Conclusion

It was found that the indicators of the adaptive potential of the EG law enforcement officers were significantly better than those of the CG law enforcement officers by 0.08 c. u. ($p < 0.05-0.01$) at the end of the initial professional training courses, as well as after one year of service. This proves the positive influence of general physical training sessions according to the author's experimental program developed taking into account service-related categories on accelerating the psychophysiological adaptation of first-time certified law enforcement officers to their future professional activities.

Prospects for further research. It is planned to study the impact of the author's program on the health of first-time certified law enforcement officers of different service-related categories.

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