

Criteria for the assessment and effectiveness of correction of violations
psychophysiological state of servicemen

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In modern conditions, a fairly large number of specialists perform their duties in extreme situations - this is participation in military conflicts, anti-terrorist operations, elimination of man-made disasters, in which peacekeeping forces and other army formations are most often used.

According to some experts, less than 25% of military personnel who participate in military conflicts and local wars adequately respond to the combat situation and are able to perform the necessary actions. The rest of the servicemen experience disorganization of mental activity. Signs of violations of the functional state of the body and physiological adaptation

[one].

A group of Ukrainian specialists conducted psychological studies of the personnel after completing a peacekeeping mission in Sierra Leone and found that 40% of those surveyed were in a state of disadaptation, some of them required psychocorrection [2]

Studies of the psychophysiological state of servicemen before and after completing peacekeeping tasks in the Republic of Iraq revealed a decrease in the index of neuropsychic stability, a decrease in the general energy level, a significant deterioration in the vital capacity of the lungs and hemodynamics [3].

The study of numerous publications and our own studies of the psychophysiological state of servicemen who were in "hot spots" and other stressful situations, made it possible to conclude that it is necessary to strengthen and correct their functional (psychophysiological) state and restoration of adaptation reserves.

An adequate correction of psychophysiological disorders is possible after assessing the degree of these disorders.

Psychophysiological state - these are the features of physiological mechanisms of the human body that provide the implementation of mental processes and phenomena [4]. The main criteria for assessing the psychophysiological state of servicemen should be indicators of neuropsychic activity, functional state (FS) of the cardiovascular, respiratory, autonomic nervous system, the level of energy processes

First of all, it is necessary to determine the state of neuropsychic stability (NPU) and the characteristics of mental processes. In conditions of stress, persons in a state of depression, high anxiety, incorrectly perceive and assess emergency circumstances, which can lead to neuropsychic dysadaptation and unmotivated actions [5].

Our experience of psychological testing is made up of studies of 620 military personnel, of whom 45 were re-conducted after completing a peacekeeping mission in Iraq. Blank and

computer tests for various purposes. Analysis of the data obtained showed that psychological testing reveals negative qualities of mental processes: a high level of anxiety (according to the Spielberger-Khanin test), pronounced neuroticism (according to Eysenck's EPI test), low NPU and a decrease in the adaptive capabilities of a person (according to the Adaptability test).

These psychological tests are considered reliable, valid, and provide an indicative assessment of NHRIs and adaptation processes. For a more complete characterization of the state of nervous activity, it is necessary to carry out psychophysiological research. For this purpose, it is advisable to use a computer-based methodology for the rapid assessment of psychophysiological rating (PFrating), which allows assessing the functional mobility and balance of nervous processes, the performance of the brain, the speed of psychomotor reactions and other psychophysiological indicators of the human body's activity [5, 6]. Moreover, the characteristics of these indicators are issued after computer processing in qualitative and quantitative equivalents with a graphic representation of the indicator of the functional state of the organism. In various military units and a research center, we tested the PF rating for 240 servicemen. Among them, 32 people were examined before and after exercise. Revealed high diagnostic information content of the computer assessment of the PF-rating,

efficiency of obtaining the necessary information.

Functional state indicators (FS) the human body is mainly objective indicators of the activity of the nervous, cardiovascular (CVS), respiratory, endocrine systems, which are determined by various devices. Practically psychophysiological state is

concretization of a more general concept - the functional state of the organism.

An important link in the FS is the CVS, which ensures the efficiency and adaptation of the body in difficult conditions of professional activity. In turn, the violation of adaptive mechanisms affects the function of the respiratory system, the quality of psychomotor reactions and other systems.

Our rather extensive experience (over 14 years) in the use of energy-informational methods for assessing the FS of the body, diagnosing various pathologies, treating many diseases makes it possible to consider the most appropriate use of equipment and techniques developed by the IMEDIS Center. In addition, useful information about the state of the level of adaptation of the body, autonomic regulation, energy processes can be obtained using a digital analyzer of human biorhythms (CAB) [8, 9, 10].

Indicators that indicate a violation of the FS and the level of psychophysiological adaptation:

- the level of CVS adaptation reserves is below average (95–111 units and more according to the Ruffier index);
- signs of cerebrovascular insufficiency, violations of vascular adaptation according to Baevsky (according to segmental diagnostics);
- a high level of psycho-vegetative load (according to the data of the vegetative resonance test);
- a decrease in adaptation reserves (less than 60% according to the CAB data).

Several classifications of the level of psychophysiological

adaptation of the human body to stressful situations. In our studies, the following classification was used: high, medium, low level of psychophysiological adaptation, failure of adaptation.

Indicators of the energy level of the body servicemen play an important role in the processes of adaptation, effective performance. Stressful situations, psychomotor, physical activity always lead to the expenditure of energy and metabolic reserves of the body.

Observing the behavior and appearance of a serviceman (pace of movement, speed of reactions to sound or light signals, skin color, hand tremors, etc.) may indirectly indicate the level of energy processes in the body. Hardware techniques of the Center "IMEDIS" and CAB allow to objectively assess the state of energy processes in the subject and determine the decrease in their level:

- state of hypoergy (according to segmental diagnostics data);
- state of hypoergy and imbalance (according to quadrant measurements);
- the level of energy supply is below the norm (less than 60% by

data of the CAB).

This report lists only the main criteria for assessing the psychophysiological state of military personnel and provides research methods that we have successfully used in diagnostic and therapeutic work with military personnel and the civilian population.

Persistent violation of the FS can lead to pathological changes in the body, to a critical decrease in efficiency (combat capability). Therefore, it is necessary to promptly correct the FS violations. Correction (from the Latin correction) is the correction (restoration) of the arisen functional disorders in the body in order to restore working capacity (combat capability) after excessive loads, stressful, extreme influences on a person.

The indications for the correction of a decrease in the level of PS and psychophysiological adaptation are the following disorders:

- overwork (powerlessness, attention disorder, drowsiness, slowing down or disorder of psychomotor reactions);
- manifestation of neuropsychic instability (panic, withdrawal or emotional incontinence, depression or agitation, anger, etc.);
- general physical weakness after psycho-emotional and physical exertion (tremor of the hands, body, muscle tension of the body, impaired coordination of movements);
- change in the functional state (palpitations, shallow rapid breathing, dilated pupils, pallor or redness of the face);
- a decrease in the objective indicators of psychophysiological reactions, the level of adaptation of the energy level (according to instrumental research methods).

Methods and ways of correcting psychophysiological disorders should be simple, effective enough and such that they make it possible to apply them in practice in various conditions of professional activity. The selection of these methods is best done individually, depending on the identified FS violations, although some of them are useful.

everyone who performs work in extreme conditions, as they strengthen the body, relieve psychological and physical stress, improve hemostasis indicators. It is advisable to briefly consider the types of methods corrections on the psychological, physiological, energy and metabolic levels of the structural system of the body.

Correction of psychophysiological state military personnel on the psychological level can be carried out individually or in a group, during a break during the performance of professional tasks, or after the end of a particular operation. We will restrict ourselves to just listing the methods of psychological correction: passive or active rest, auto-training, relaxation techniques. In the room of psychological relief, it is advisable to use functional music [11], aroma therapy [12], scientifically grounded audio and video programs, which, using the "home theater" effect, well complement restorative and corrective measures.

Methods for correcting a psychological state at the physiological level, they affect the work of various functional systems (nervous, CVS, respiratory and others), act in a complex manner.

Respiratory gymnastics is considered one of the simplest and most effective ways to regulate PS. It is based on the use of various methods of free and rhythmic breathing, due to which there is good ventilation of the lungs, massage of internal organs due to the movement of the diaphragm, metabolic processes are activated. Various types of rhythmic breathing promote vasodilation and improve cerebral circulation. Breathing can be soothing and mobilizing. Respiratory training can be carried out in any conditions of rest, a break in professional activity.

Muscle relaxation deliberately affects the CVS, respiratory, nervous, muscular systems and emotional-vegetative components of mental activity. It can be active, the technique was developed by E. Jacobson - and passive [13].

An effective method of action at the physiological and energy level of the body is various types of massage: general, segmental, point, manual, hardware. Massage relieves fatigue well, improves energy processes, increases efficiency.

Correction of disorders of the psychophysiological state can be successfully carried out using bioresonance, multiresonance and induction-frequency methods of influencing the human body. For this, it is advisable to use the methods and equipment of the IMEDIS Center. The mechanisms of influence on the body of these methods of treatment are scientifically substantiated, developed in detail and widely introduced into medical practice. Our experience of work in outpatient, inpatient conditions and in military units (in adapted premises) is more than 5000 observations. In inpatient and outpatient settings, computerized research and treatment techniques were used. In military units, autonomous portable devices were used. The results of this multifaceted work are reflected in 37 scientific publications.

Correction of psychophysiological disorders using bioresonance therapy was carried out in 7 people after daily duty in a dress. At first

the servicemen were passively resting in the psychological relief room, listening to calm classical music. After that, a regulating bioresonance therapy was carried out on an autonomous device (15 min.). Then induction frequency therapy at anti-stress frequencies (15 min.). After the correction, the feeling of fatigue disappeared in everyone, the pulse rate returned to normal, and the indicators of the functional level of the nervous system (FUNS) improved. In fig. 1 shows the dynamics of FUNS, which was determined by studying the psychophysiological rating before duty, immediately after it and after correction. The dynamics of FUNS is positive, the correction effect is good.

On the psychophysiological level, other methods of correction can also be applied: electromyostimulation, reflexology, apia, pneumopressing. It should be noted that hardware methods researches and corrections can be applied by a trained specialist.

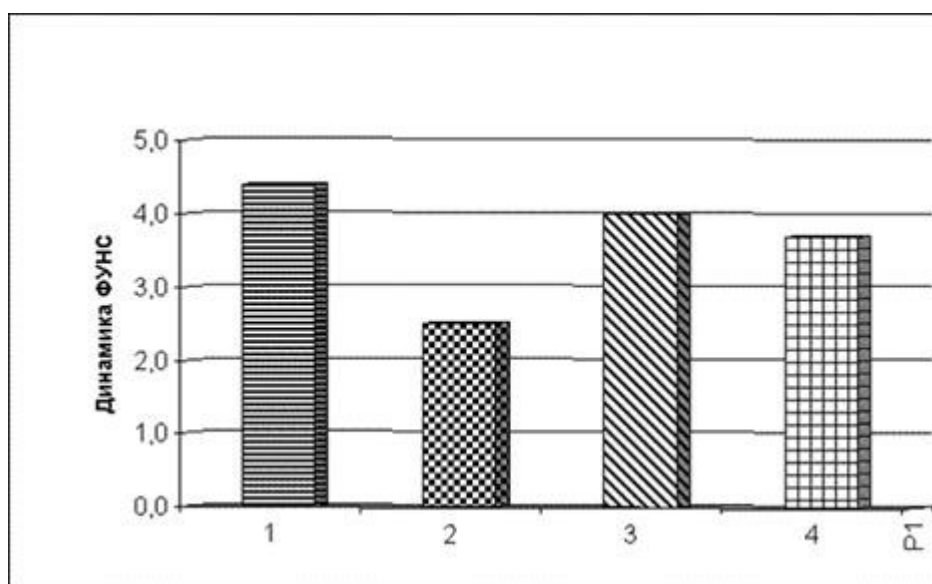


Figure 1. Dynamics of the indicator of the functional level of the nervous system (FUNS) after the correction of the revealed violations: 1 - indicator of the FUNS in normal service conditions; 2 - FUNS indicator after psycho-emotional stress and fatigue; 3 - FUNS indicator immediately after correction; 4 - FUNS indicator 2 days after correction

The impact on energy and metabolic processes in the body is included in military personnel the complex of corrective effects on psychophysiological state. Various psycho-emotional and physical activities increase energy expenditures several times compared to the state of rest. One of the important sources of energy and plastic material is food. The energy value of the nutritional products of military personnel must correspond to the costs of the body.

The metabolic and energy processes in the body can be influenced by the intake of adaptogens, vitamin preparations and some pharmacological preparations.

Criteria efficiency carried out corrections violations psychophysiological adaptation of the body of military personnel can serve: normalization of well-being, restoration of working capacity, normalization or improvement of indicators of the functional state, in the first place,

nervous, cardiovascular systems.

Conclusions:

1. Criteria for assessing the psychophysiological state of servicemen are: data of psychological testing, psychophysiological research, determination of the functional state of the body, its energy level and adaptive capabilities.
2. The most informative methods are research functional state and level of psychological adaptation of the organism, proposed by the Center "IMEDIS".
3. Features of the mechanisms of functional changes as a result stress (extreme) situations made it necessary to consider their correction at various structural levels of the body: psychological, physiological, energetic, metabolic.
4. The proposed methods for assessing and correcting functional disorders (psychophysiological) human condition can be used in work with special-purpose units, workers of civilian professions associated with activities in extreme situations (rescuers, firefighters, etc.)

Literature

1. Bochenkov A.A., Shostak V.I., Glushko A.I. Actual problems of the military psychology // Military medical journal., 1996. - T. 317. - №12. - S. 35-40.
2. Opanasenko V.V., Ivanov D.A., Martynyuk G.M., Levit I.R. Psychophysiological status of pilots after the fulfillment of the peacekeeping mission. Zb. sciences. Prats GVKG MO of Ukraine. Vip. 9. - K., 2004. - S. 471-476.
3. Maslova M.G., Polyakov O.A., Volodarsky V.L., Bobrovich L.M. .. Druchilo T.F. Assessment of changes in indicators of the functional status of the organism of the service providers before the release of the peacemaking agency // Coll. sciences. Prats NNDC OT and WB of Ukraine. Vip..3 (28). K., 2005. - S. 195-199.
4. Psychophysiology. Textbook of the new century / Ed. Yu.I. Alexandrova. - SPb.-M.-Kharkov-Minsk, 2001. -- 167 p.
5. Psychophysiological protection of combat children in extreme minds. Methodical book / Author-structure: V.Y. Shevchenko, B.V. Kravchenko, S.A. Galkin, S.A. Olyynik, D.O. Korshevnyuk. Pid zag. Edited by M. S. Korolchuk. - TO., 2001.
6. Gorgo Yu.P., Filimonova N.B., Yan T.E. The value of psychophysiological to the status of a people for the development of criteria for professional attachment // Bulletin of Cherkasy University. Vip. 13. Series of biological sciences. - 1999. - S. 28-31.
7. The complex methodology for the identification of psychophysiological I will viyskovosluzhbovtziv at the stage of professional selection for participation in international peacekeeping operations: Methodical recommendations. - K. : NNDCs OT i VB U, 2005. -- 124 p.
8. Gotovsky Yu.V., Perov Yu.F., Perov S.Yu. Energy information effects and bioresonance therapy // V International conference "Theoretical and clinical aspects of the use of bioresonance and multiresonance therapy." Part II. - S. 4-16.

9. Maslova M.G., Kurtseitov L.K., Volodarsky V.L. etc. Experience the use of energy-information technologies developed by the IMEDIS Center in diagnostic and treatment work with military personnel // XIII Intern. confer. "Theoretical and clinical aspects of the use of bioresonance and multiresonance therapy." Part I. - M.: IMEDIS, 2007. - S. 85-94.

10. Smirnov K.Yu. Principles of discrete neurodynamics and their application for the analysis of biophysical signals // Telemedicine. New information technologies on the threshold of the 21st century. - SPb.: RAS, 1998. - Ch.5. - S. 194-208.

11. Shusharjan S.V. Music therapy and the reserves of the human body. - M.: AOZT "Antidor", 1998. - 363 p.

12. Kodlubovskaya T.B. Peculiarities of the manifestation of the social states of the people infused with the smell of olives. Abstract dis. Cand. psychol. sciences. - K., 2000. -- 20 p.

13. Petrov N.N. An autogenic workout for you. A practical guide. - M.: Center for Psychology and Psychotherapy. 1990. -- 32 p.

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