

MODERN APPROACHES TO SERVICE CONDITIONS FACTORS AFFECTING THE HEALTH OF MILITARY SERVICEMEN AND PREVENTION PROBLEMS

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Abstract

This scientific article examined the problems of medical support for troops, as well as service environment factors and prevention issues affecting the health of military personnel, published in national databases, including international databases such as Cyberleninka, Web of Science, PubMed, Medline and Scopus.

Keywords: medical support, military personnel, external environment, prevention.

Introduction

As part of our research, we searched national as well as various international databases, published articles, and research findings on military health care issues, as well as service environment factors affecting military health and preventative issues.

Research Methods

Literature review. The study reviewed two types of literature: guidelines and published studies including the results of 23 articles and 11 scientific studies were studied. Published studies were searched for relevant material through the PubMed search engine and the relevant sections of each guideline document were examined.

Results

The health status of military personnel depends on the economic and political situation of the country, the conditions of combat training (military labor) of military personnel, the conditions of the geographical location of the service (climatic, environmental conditions) and a number of other factors. Combat training of military personnel is carried out in several areas aimed at increasing the practical skills and endurance of personnel necessary to perform combat missions.

In particular, physical training increases the resistance of military personnel to physical and mental stress, and also increases the body's adaptive capabilities and resistance to disease. However, as a result of incorrect (methodological, organizational, etc.) approaches to the physical training of military personnel, it can be observed that this type of training itself has a negative impact on the



health of personnel. According to the results of research conducted by Bolehan, as a result of doubling the volume of physical activity during physical training (25 hours instead of 12 hours per week) among conscripts, the hospitalization rate among conscripts decreased to 12% (respiratory diseases - 27.9). -34.9%) [17].

In the studies of some authors, in the process of special training of conscripts, various elements of the human musculoskeletal system are constantly exposed to mechanical loads of varying frequency, intensity and strength. Such long-term and impact loads, typical for military personnel and athletes, lead to the formation of bones and joints and even the development of diseases. Violation of the motor reactions of the legs and arms leads to disruption of the mechanism of social adaptation, physiological functions and, due to decompensation of processes, affects the course of a number of diseases, even the quality and duration of life [11].

Conditions of service, combat training and the nature of the tasks performed are among the conditions of military service, and its impact on health is unique. The daily activities of a serviceman are directly related to the branch of the army, and ensuring the safety of service during activities serves to prevent unpleasant incidents (in turn, diseases, injuries, poisonings, etc.).

Injury rate is an indicator of injuries and their consequences over a certain period of time in a group of people. The injury rate of military personnel is the main indicator of occupational safety [16].

The trauma rate of conscripts of the Navy of the Armed Forces of the Russian Federation is high compared to the Ground Forces and amounts to $23.54 \pm 2.75\%$ and $11.23 \pm 0.96\%$ in 2003-2019, respectively [17].

An analysis of climatic conditions shows that the weather significantly affects the health of personnel, as well as combat effectiveness, diseases (colds, sunburn, heat stroke, mild ophthalmia, nosebleeds, trophic disorders, eye diseases, inflammation of the skin and mucous membranes), that it may be the cause of its occurrence [4].

Doubts about the importance of nutrition for military personnel of any army in the world to maintain the combat effectiveness of its troops, the formation of a stable socio-psychological state in military units and the prevention of diseases associated with military and professional activities, but not during the rehabilitation of sick and wounded military personnel [8].

It should be noted that military service was considered one of the most stressful types of human activity in terms of its complexity and danger [12]. At the initial stages of service associated with stressful situations, the influence of load on the resistance of the body of military personnel is manifested by an increase in rates of general morbidity and temporary disability and a decrease after further adaptation [10]. The Ministry of Defense of the Russian Federation identifies the following factors of military work that have a negative impact on health: Physical: fluctuations in barometric pressure, decrease in partial pressure of the atmosphere and oxygen, mechanical vibrations and accelerations, noise and vibration, low ambient temperature and its sudden changes, ionizing and electromagnetic radiation, weak ultraviolet radiation (absence). Chemical: artificial gas environment, engine gas condensates, rocket fuel components, highly toxic substances, toxic chemicals related to chemical weapons. Biological: work with pathogenic microorganisms of groups I and II.

Socio-psychological: high mental stress (chronic and acute stress), isolation with relative sensory and social deprivation, physical inactivity and hypokinesia, disruption of the circadian biological cycle (sleep-wake disorder) [7].



Factors such as changes in the duration of military service, acceleration of physical and combat training, changes in the characteristics of working conditions for military personnel have a complex impact on the health of military personnel and the combat effectiveness of personnel [3]. In the authors' studies, reducing the length of military service to 12 months had a positive impact on the mental health of military personnel, including reducing the percentage of discharges from military service due to mental disorders, and it was found that this decreased by 3.5 times compared to previous ones [18].

When changing the climatic-geographical region of residence, adaptive changes occur in the body's regulatory system, aimed at ensuring adequate life processes in changed environmental conditions [6].

In the Eastern Military District, the rate of dismissal of female military personnel from military service due to illness is more than 2 times higher than the average, with the main share being due to diseases of the circulatory system and endocrine system. The main reason for this can be explained by the difficulty of adaptation of military personnel to the conditions of eastern latitudes [13].

In the Russian Federation, in recent years, amid the economic crisis in the country, restoration work has been carried out in the Armed Forces. After the 1990s, the crisis led to negative changes in the living and working conditions of pilots. As a result, dramatic changes occurred in the professional training, lifestyle and qualities of pilots [15].

The professional activities of military personnel often take place in extreme conditions, which can lead to a failure of the body's functional reserves and psychogenic disorders [1, 5].

The body's reaction to internal and external stimuli and occupational factors is considered "occupational stress", characteristic of extreme professions, especially military personnel. One of the most common mental disorders in this category is post-traumatic stress disorder. Post-traumatic stress disorders are characterized by various disorders of the autonomic regulation system, which, if not corrected, lead to specific psychophysiological changes and even somatic pathology. According to research results, post-traumatic stress disorder occurs in 30% of combat participants [21].

A health survey of British military personnel serving in Iraq and Afghanistan identified the prevalence of post-traumatic mental disorders among personnel performing permanent combat duties compared with those performing support duties [22].

Specific conditions of professional activity determined the level and structure of morbidity indicators for female military personnel serving in various types of troops. Female military personnel who are sensory and sensorimotor operators in the Space Forces have high loads on their visual analyzers, and diseases of the eye and its supporting apparatus are 2.9 times higher than the average for the joint venture. In addition, the high incidence of musculoskeletal diseases (1.8 times), injuries and poisonings (1.8 times) among female military personnel in this category indicates the presence of factors that negatively affect their health during service [15].

In addition to the above factors, the trend of changes in the health status of military personnel also depends on the health status of the country's population. According to a number of authors of the Russian Federation, an increase in morbidity rates among the population is observed for all nosologies, especially in cardiovascular and oncological diseases, injuries, accidents and poisoning. The trend of such changes in the health status of the population, associated with the



deterioration of the socio-economic situation in the country, has a negative impact on the health of military personnel [15].

The adverse effects of military work and living conditions, as well as other negative socio-psychological factors, are considered the main causes of the above-mentioned diseases. The analysis of diseases according to these nosologies shows that they tend to increase and occur more often in long-term military personnel [7].

The health status of conscripts depends on a number of factors, the main of which include: the initial state of health and the quality of conscription, the attractiveness of military service and conditions of service, the correct distribution of military accounting specialties, provision of military vocational training, compliance with sanitary and hygienic standards and ensuring epidemiological peace, universality of medical care and its quality [18].

The performance of military service and combat duties by the majority of military personnel and employees of the Ministry of Internal Affairs is accompanied by a decrease in their psychological reserves, causes them socio-psychological disorders, unpleasant personality changes and ultimately negatively affects their health and ability to work [2].

The above unfavorable factors caused changes in the mental state of some military personnel who were not adapted to life in mountainous areas during the movement, which caused mistrust. Especially in the first days of the events, while moving in mountainous areas, some soldiers showed signs of nervousness, short temper, moodiness and loss of appetite. In addition, during the first and second days of the movement, almost 80% of the personnel experienced symptoms of blistering and blistering of the skin of the feet due to the long distance traveled and the discomfort of the shoes [20].

In some military personnel, especially poorly trained military personnel, bone damage occurs after functional stress, usually after long-distance marching and cross-country running on hard surfaces (asphalt, concrete) [16].

It has been established that there is a sharp difference in the prevalence of risk factors for life-threatening and disabling cardiovascular diseases among cadets, conscripts and military contractors. Smoking, high body weight, hypertension, and lack of active physical activity are more common among contract servicemen. Risk factors are associated with low medical knowledge (ignorance of normal blood pressure - 46%, ignorance of cholesterol levels - 61.25, ignorance of what is included in the hypercholesterolemic diet - 74.45%, among those who know the content of the diet (28.53), those who do not follow it - 75.23%, 60% of patients with hypertension measure blood pressure for control, 86% of AH and 20.1% of patients with coronary artery disease take medications) [14].

I.Litvinenko and a number of other researchers list the influence of military service factors on the nervous system and determine measures for its prevention [9].

Russian Federation V.P. Noteworthy is the information summarized by specialists from the Federal Medical Research Center for Psychiatry and Narcology named after. Serbsky about the influence of extreme factors of work activity on health [21,22,23].

Discussion

During the systematization of the analysis of the studied scientific data, we sought to collect and systematize more data on the areas of open data of interest to us on the protection of the health of military personnel and the organization of medical support. During the systematization of the



studied work, it was found that the form and procedure of medical support for military personnel depend on the nature of the tasks performed by the armed forces, the funds allocated for the country's defense work, and the level of development of medical science, that the organization of their health care is a sphere of state security interests, as well as the proximity of medical support in foreign armies in nature and content to our system.

Conclusion

Exposure to unfavorable factors in the conditions of military service, physical and emotional stress increases the risk of developing mental disorders in military personnel and requires not only improving the quality of diagnostic work, but also constantly improving organizational work in the preventive field. directions, as well as morbidity among military personnel. It can be concluded that among the factors influencing its indicators, the level of medical literacy of personnel has a significant influence.

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