

Hygienic Recommendations for Organizing Healthy Nutrition for Military Servicemen

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Abstract *Purpose.* The article examines the studies planned to identify the hygienic problems of high-grade nutrition of military servicemen, the formation of the correct attitude to nutrition in military communities to achieve high results and maintain health, as well as for the organization of proper nutrition for military servicemen. *Methods.* In a study using statistical and questionnaire survey methods among 70 military personnel and pensioners undergoing inpatient treatment in the gastrointestinal, endocrinological and neurological departments of the Central Military Clinical Hospital of the Ministry of Defense of the Republic of Uzbekistan, their adherence to the criteria for a healthy diet and their knowledge about a healthy lifestyle. *Results.* A social survey on healthy eating among military personnel and pensioners of various categories of the Ministry of Defense made it possible to identify military personnel and pensioners who have problems with maintaining a healthy lifestyle, in particular, problems associated with a healthy diet. In particular, it was found that 14,3% of respondents do not comply with the criteria for a healthy diet, the majority of them, i.e. 77, 1% follow nutritional rules 3 times a day, 2.9% of them 5 times a day, 11,4% of respondents 4 times in a day and finally 8,6% military personnel and pensioners eat only 2 times a day. In addition, during the survey, 20% of respondents believed that the cause of weight gain was lack of exercise, 14,3% - hormonal changes in the body, 17,1% - a genetic predisposition to obesity and 48,6% - unhealthy diet. *Conclusion:* Based on the results of these studies, it can be concluded that excess body weight and diet-related diseases continue to occur as a result of non-compliance with the criteria for healthy eating, which some military personnel consider to be part of a healthy lifestyle. In this regard, staff compliance with healthy eating rules in order to increase their sense of responsibility for their own health requires further strengthening of large-scale explanatory work by medical specialists at various levels.

Keywords Rational nutrition, Diet, Psychological stress, Adaptation mechanisms, Microelements

1. Introduction

Eating is the most important physiological need of the body. It is important for the construction and constant renewal of cells and tissues, as well as the necessary energy supply to compensate for the body's energy costs. As a result of food consumption, enzymes, hormones, metabolic processes and other regulators of the body's vital functions are formed in the body. Metabolism, functions and structure of all cells, tissues and organs depend on the nature of nutrition, i.e. on food components [1]. The link between eating rate and energy intake has long been a matter of extensive research. A better understanding of the effect of food intake speed on body weight and glycemia in the long term could serve as a means to prevent weight gain and/or dysglycemia. Whether a fast eating rate plays an important role in increased energy intake and body weight depends on

various factors related to the studied food such as texture, viscosity and taste, but seems to be also influenced by the habitual characteristics of the studied subjects as well. Hunger and satiety quantified via test meals in acute experiments with subsequent energy intake measurements and their association with anorexigenic and orexigenic regulating peptides provide further insight to the complicated pathogenesis of obesity [2]. Data from international sources have shown that overweight and obesity are major health problems for people of all ages. According to the World Health Organization (WHO), the number of overweight and obese people in the world doubled between 1975 and 2012. In 47 countries, representing 87% of Europe's total population, more than 50% of adults are overweight or obese, and in some European countries, this figure reaches 70% of adults [3]. In particular, in Uzbekistan, 56% of the population is overweight, and 30% suffer from chronic diseases. According to the analysis, 10,7 million people in Uzbekistan do not lead a healthy lifestyle, 16,5% of the population use tobacco and 4,7% alcohol, 16% do not eat enough fruits and vegetables (less than 400 grams per day),

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36,6% add salt to their food, 32,9% are overweight and 23,5% suffer obese, 38 % had high blood pressure, 8,4 % had high blood sugar and 26 % had low physical activity [4]. This has a direct negative impact on the formation of an active civil society in the implementation of all reforms aimed at the development of the country.

Military service is one of the most dangerous professions in the world, and military personnel face challenges with healthy eating due to various stress conditions, death or other harmful factors of military service, and limited dietary diversity. Overweight and obesity among military personnel is not only a problem for their health, but also an important factor affecting the combat readiness of the army [6]. A number of studies have shown that overweight and obesity may be associated with the work environment, high demands associated with military duties, and stress during military service [7,8,9,10]. Also, highlight incorrect eating habits, high-energy consumption in relation to certain segments of the population, and the amount of saturated fat and sugar in the diet. Disturbances in the nutritional structure and deterioration in the quality of food products are predisposing factors in the development of diseases of the gastrointestinal tract, cardiovascular and endocrine systems, and dental caries [11,12]. Another problem with overweight and obesity among military personnel is the relative uniformity of foods in the military diet. The choice of food diversity included in the diet or the availability of essential macro- and micronutrients in the diet may influence overweight and obesity among military personnel [13,14]. At the same time, constant monitoring of the work of canteens in military units and institutions by medical service specialists, stimulating manufacturers and service providers to offer food that meets the criteria for healthy nutrition of personnel, gives military personnel the opportunity to choose.

Obesity is caused by several factors, including genetic obesity, metabolism, socioeconomic status of a country or population, and behavioral factors specific to the environment and region in which people live [5]. Therefore, in subsequent years, regulatory documents on a healthy lifestyle were adopted and a number of measures were implemented. Currently, the draft State Program for the Implementation of the Development Strategy of New Uzbekistan for 2022-2026 in the «The year of human care and quality education», which is being intensively discussed by the public of Uzbekistan, also sets a special task aimed at starting a nationwide movement of «Proper nutrition and a healthy lifestyle». As part of this program, requirements will be strengthened for the advertising of unhealthy foods and drinks intended for children, baby food and energy drinks, medicines and biologically active substances. In addition, it is planned to approve a list of products that are not recommended for children and youth in educational institutions, including food products with a high content of sugar, salt, trans fats, flavoring and coloring additives and a reduction in their consumption [4]. The necessary conditions are also created for employees to engage in physical exercise and healthy nutrition at work. As a result, the population,

especially youth, women and the elderly, will have the skills to manage healthy eating and increase physical activity. Development of scientifically based proposals to eliminate or reduce the influence of these factors by predicting in advance risk factors for dietary obesity in military personnel: stress, harmful, dangerous conditions of service, alcohol, unbalanced diet, physical exercise and improper organization of the daily routine.

2. Results

74,3% of respondents comply with the criteria for a healthy diet, 14,3% do not follow the criteria for a healthy diet and 11,4% of respondents do not have sufficient understanding of healthy nutrition. In addition, 77,1% of respondents eat 3 times a day, 2,9% - 5 times a day, 11,4% - 4 times a day and 8,6% - only 2 times a day. In addition, during the survey, 20% of respondents believed that the cause of excess weight is low physical activity, 14,3% of respondents believe that this is facilitated by hormonal changes in the body, and 17,1% of respondents believe that genetic predisposition is the main cause of excess weight and obesity, and only 48,6% of respondents are of the opinion that obesity is promoted by unhealthy diet. Although 40,0% of respondents do not consume fast food in everyday life, it was found that 5,7% of respondents consume these products often, and 54,3% consume them sometimes. Military personnel who regularly consume fast food explained the reasons for consuming these products mainly by the lack of time to eat, the low price of fast food, and the high possibility of ordering without leaving the place of duty.

3. Discussion

The emergence of obesity as a distinct disease could have far-reaching consequences for an organization where optimum health and physical fitness are required for personnel to perform their occupational roles effectively [15]. Based on our research, we found that 73% of respondents were military retirees, and that the diet of these people was associated with a different lifestyle. However, the military personnel (27%) who took part in the study eat in the canteens of the military unit due to the fact that they spend most of their time on military service. Consequently, it is possible to regulate the diet of this group and encourage them to master the principles of healthy eating. Based on the results obtained, it is possible for medical specialists to have a positive influence on the diet of military personnel. The study found that 54.3% of respondents sometimes consume unhealthy fast food products, while 78.4% of these total indicators correspond to the share of military personnel, and 21.6% correspond to the share of military pensioners. Of course, this situation is related to the daily routine of military personnel and the relative to low price of fast food, and this result can be changed in a positive direction with the participation of representatives of the medical service.

4. Conclusions

Based on the results of these studies, it can be concluded that excess body weight and diet-related diseases continue to occur as a result of non-compliance with the criteria for healthy eating, which some military personnel consider to be part of a healthy lifestyle. Failure of some military personnel to comply with the criteria for a healthy diet and the rules of rational nutrition, an increase in the number of military personnel who regularly consume fast food can cause them problems associated with excess weight. In this regard, staff compliance with healthy eating rules in order to increase their sense of responsibility for their own health requires further strengthening of large-scale explanatory work by medical specialists at various levels. Of course, this process is not a problem that can be solved only by introducing the national movement "Proper nutrition and a healthy lifestyle." Now every social activist needs to encourage others to lead a healthy lifestyle with him. Only then will we achieve our goals and results. For this reason, it is necessary to warn military personnel in this category about the dangers of instant foods, and to carry out comprehensive educational work in this direction by medical specialists.

Hygienic recommendations for organizing healthy nutrition among military personnel:

1. **Drinking regime.** Maintain drinking regime. Due to water's strong ability to dissolve various molecules, it has become known as the "universal solvent." For optimal functioning of the body, it is necessary to ensure sufficient fluid intake. Tap water, as long as it is safe to drink and available, is the safest and most inexpensive drink. By replacing sugar-sweetened drinks with drinking water, you can easily limit your sugar intake and daily calorie intake.
2. **Eating a variety of foods.** Every day you should eat a mixture of wheat, corn and rice, legumes, as well as a sufficient amount of fresh fruits and vegetables and animal products.
3. **Sugar consumption.** Try to limit your intake of sweets and sugary drinks, such as sparkling water, fruit juices and juice drinks, including liquid or powder concentrates flavored waters, energy drinks, sports drinks, tea and coffee drinks, and flavored milk drinks with additives.
4. **Consuming salt.** You should limit your salt intake to 3-5 grams per day. At the same time, do not over-salt prepared dishes and food during cooking; try to use salty seasonings less often.
5. **Consuming fat.** Choose healthy fat and oil products: when preparing food, choose olive, soybean, sunflower or corn oil over butter, ghee and lard. Try to steam or boil food rather than fry.
6. **Don't drink alcohol.** Alcohol is not part of a healthy diet. Frequent or excessive drinking has long-term consequences such as liver damage, cancer, heart

disease and mental disorders. There is no safe dose of alcohol.

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