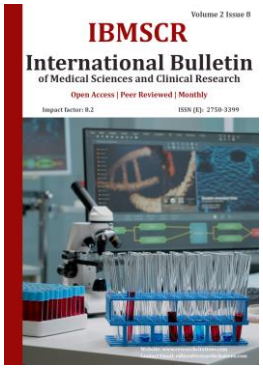

ANALYSIS OF THE NUTRITIONAL CONTENT OF THE REGULAR DIET OF MILITARY SERVICE PERSONNEL OF THE PENSION AGE

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The purpose of the study. The study's goal was to evaluate the nutritional quality of senior military members in light of their unique health conditions. 150 males (53.4%) and 130 women (46.4%) out of 280 respondents over 50 who retired from the Ministry of Internal Affairs participated in the survey. However, it was found that the majority of retired military men (138 people, or 90.0%) and a small number of women (12 women, or 9.2%), who still work in state institutions and lead active lives, require some kind of diet. The relatively high concentration of carbohydrates in the typical daily diet of the elderly is attributable to their high consumption of bakery goods, which have the advantages of being simple to digest and preventing overeating.

The relevance of research. The issues of nutritional health support and non-communicable disease prevention through diet have received a lot of attention recently in Uzbekistan[1]. Senile and geriatric nutrition is a pressing issue. How well it is constructed mostly depends on the lifespan and health of the individual. Malnutrition or overeating, low-calorie or high-calorie food, inadequate nutrition in terms of the ratio of basic nutrients (proteins, fats, and carbohydrates), or improper nutrition in terms of inadequate amino acid composition or predominantly carbohydrate nutrition, cannot help but affect the body's metabolic processes and not affect its general condition. On the other hand, the state of health in old age cannot help but affect the state of nutrition [1,2].

Numerous nutritional issues can lead to the onset of specific diseases and, in turn, speed up the body's aging process. The diet of older people demands special consideration due to the natural changes in their endocrine, cardiovascular, gastrointestinal, and oral systems.

Purpose of research. The study's goal was to evaluate the nutritional quality of senior military members in light of their unique health conditions.

Research objects. The study's participants were 280 people over 50 who had retired from the Ministry of Internal Affairs, including 150 males and 130 women (46.4% and 53.4%, respectively). It was discovered that the majority of retired military men (138 persons, or

[1] Decree of the President of the Republic of Uzbekistan dated November 10, 2020 N PP-4887 "On additional measures to ensure healthy nutrition of the population" National database of legislation (www.lex.uz), November 11, 2020

90.0%) and a very small number of women (12 women, or 9.2%) still work in government structures and lead active lives.

The representative group was continuous and was created through random sampling. Age less than 50 and not working for the Ministry of Internal Affairs are requirements for exclusion from the research.

Research methods. Through the examination of medical observation cards, the state of health was investigated. The WHO's suggested frequency and 24-hour reproduction approach for epidemiological studies was used to study actual nutrition [3]. The Republic of Uzbekistan's rules for physiological energy and nutritional demands for various sex and age groups [4] as well as the standards for the consumption of micronutrients in accordance with the FAO/WHO scale [1] were used as reference values when evaluating the adequacy of nutrition.

We examined 1200 average daily diets for 26 indicators for the purpose of nutritional assessment of diets and nutritional health risk factors, including total and animal proteins, total and vegetable fats, carbohydrates, di-monosaccharides, polysaccharides, pectin, cholesterol, energy value, calcium salts, phosphorus, iron, magnesium, vitamin A, beta-carotene, thiamine, riboflavin, pyridoxine, cyanocobalamin, vitamin C, D, E, PP, folic acid, and fiber content by season according to A.A. Pokrovsky (1977) [5].

Results of research. One hundred percent of respondents need dental care, which may have an impact on the composition of this population's diets, according to the findings of the analysis of the frequency of persons of retirement age who left the Ministry of Internal Affairs. The biggest nutritional demand has been identified for diet number 10: cardiovascular diseases. This means that 64 women and 49.2% of the 67 males who were evaluated both have cardiovascular diseases. Patients with diabetes mellitus, who account for 35.7% of all reported cases, are second in terms of needing dietary assistance (Table 1). Most aged and senile people who retired from the Ministry of Internal Affairs' structure require particular forms of nutritional nutrition. This situation highlights the necessity of setting up aged nutritional care in the hubs of a healthy lifestyle in primary health care.

Table 1

The state of morbidity of elderly and senile people in the study group by age and sex groups.

Types of pathologies	Men age			Women ahe			Total: абс. %
	50-74 абс.%	75-90 абс. %	св. 90 абс. %	50-74 абс.%	75-90 абс. %	св. 90 абс. %	
Dental pathologies	92 61,3%	41 25,6%	17 11,3%	68 52,3%	56 43%	6 4,6%	280 100%
Peptic ulcer, gastritis	12* 13,0%**	18 43,9%	4 23,5%	16 23,5%	23 41,0%	3 50%	76 27,1%
Diseases of the liver, biliary tract	22 23,9%	12 29,2%	3 17,6%	26 38,2%	24 42,8%	2 33,3%	89 31,7%
kidney disease	18 19,5%	11 26,8%	1 5,8%	19 27,9%	14 25,0%	2 33,3%	56 22,2%
Diseases of the cardiovascular system	30 32,6%	33 80,0%	4 17,6%	34 50,0%	28 50,0%	2 33,3%	131 46,7%
Diabetes	26 28,2%	28 68,2%	1 5,8%	20 29,4%	24 42,8%	1 16,6%	100 35,7%
Total:	92 61,3%	41 25,6%	17 11,3%	68 52,3%	56 43%	6 4,6%	280 100%

- * taking into account the presence of a combination of several pathologies;
- ** relative to this age group

According to a review of the subjects' nutritional status, they have high energy values (3200±43 kcal in the summer and autumn and 3460.4 ±45.0 kcal in the winter and spring) and high levels of total protein content (118.8±8.5 g/day in the summer and autumn and 122.9±8.8 g/day in the winter and spring) (Table 2).

The average elderly person consumes 588.5±8.8 grams of carbohydrates per day in the summer–autumn season and 597.1±9.5 grams per day in the winter–spring season. This is largely due to the non-overeating qualities of bakery products, as well as their swelling under the influence of gastric juice and their large surface area of exposure. We focused on the structural makeup of baked goods because most scholarly papers [6, 7] do not address this issue.

According to an analysis of the average daily food intake, national varieties of bakery goods (flat cakes) predominate in the quantity of the actual nutrition of elderly people's diets. compared to the volume consumed of pan wheat bread, which was 132.5±5.5 g/day in the summerautumn season and 135.0±6.0 g/day in the winterspring season, was 170.2±11.5 g/day in the summerautumn and 192.2±12.2 g/day in the winterspring seasons.

Table 2

Assessment of food intake in the average daily rations of military personnel employed by the Ministry of Internal Affairs who are over 50 and retired, by seasons of the year, in comparison to logical criteria, g/day, M ± m

Name of products	Summer-autumn	Winter-spring	Norms [4]	P
Legumes	10,0±0,2	12,0±0,3	15,0	<0,01
Wheat flour	45,5±1,5	47,0±2,05	20,0	<0,01
Rice	35,0±1,7	38,0±2,5	40,0	<0,01
Cereals (no rice)	4,5±1,1	9,1±1,3	20,0	<0,01
wheat bread	132,5±5,5	135,0±6,0	200,0	<0,01
Rye bread	12,2±1,0	11,5±1,1	100,0	<0,01
Bread from other types of grain (sorghum, corn)	20,2±1,5	18,2±1,2	N/A	
cakes	170,2±11,5	192,2±12,2	N/A	
buns	60,2±6,5	68,2±7,2	N/A	
Homemade pastries	40,2±2,4	48,2±1,8	N/A	
crackers	20,0±1,3	18,4±1,4	N/A	
Pasta	12,6±1,1	14,0±1,1	30,0	<0,01
Potato	172,4±10,5	120,0±8,5	150,0	<0,01
Cabbage	1,25,5±1,2	32,0±1,3	50,0	<0,01
cucumbers	11,0±0,5	5,5±0,5	50,0	<0,01
Tomatoes	7,0±0,8	6,5±0,8	50,0	<0,01
Beet	6,0±0,3	3,0±0,3	30,0	<0,01
Carrot	12,5±1,5	16,6±1,8	50,0	<0,01
Onion	11,4±1,1	12,4±1,1	30,0	<0,01
Other vegetables	11,0±0,5	5,8±0,5	50,0	<0,01
melons	16,5±1,3	12,0±1,1	40,0	<0,01
Pumpkin	10,2±1,2	24,0±1,2	30,0	<0,01
Fresh fruits and berries	28,0±1,4	35,6±1,8	250,0	<0,01
dried	5,0±0,5	6,0±0,5	20,0	<0,01
fresh grapes	15,5±1,0	15,5±1,0	30,0	<0,01
Citrus	3,5±0,5	2,5±0,5	15,0	<0,01
Beef	32,0±1,5	30,0±1,5	50,0	<0,01
Mutton	54,0±1,4	53,0±1,4	20,0	<0,01
Rabbit meat	1,5±0,5	1,5±0,5	20,0	<0,01
offal	11,5±0,5	11,5±0,5	N/A	
birds	42,1±1,2	45,1±1,2	60,0	<0,01
Fresh fish	18,5±0,5	16,0±0,5	30,0	<0,01
Fish products	12,2±0,5	13,0±0,5	30,0	<0,01
Whole milk	30,0±1,6	50,0±1,4	400,0	<0,01
curdled milk	160,0±15,6	185,0±17,4		
Sour cream, cream	5,0±0,5	4,6±0,4	15,0	<0,01
fat	5,5±0,5	5,0±0,5	30,0	<0,01
Cottage cheese	14,5±1,1	14,5±1,1	30,0	<0,01

cheese	4,5±0,5	4,0±0,4	20,0	<0,01
Eggs (pieces)	0,5±0,1	0,5±0,1	1,0	<0,01
Sugar	28,0±0,5	26,0±0,4	20,0	<0,01
Honey	8,0±0,3	11,0±0,3	20,0	<0,01
Spreads	20,0±0,5	22,0±0,6	5,0	<0,01
Vegetable oil	34,5±2,5	38,0±2,0	25,0	<0,01
Salt iodized	8,5±1,5	8,5±1,5	5,0	<0,01
tea	4,4±0,5	4,4±0,5	2,0	<0,01
coffee	1,5±0,05	1,5±0,05	2,0	≥0,01
tomato paste	1,0±0,5	1,0±0,5	3,0	≥0,01
Spices	1,5±0,05	1,5±0,05	2,0	≥0,01
Calorie content, kcal	3200,0±43,0	3460,4±45,0	2856,4	<0,01
proteins	118,8±8,5	122,9±8,8	106,3	<0,01
Fats	85,5±5,5	88,9±5,5	112,6	<0,01
Carbohydrates	588,5±8,8	597,1±9,5	516,7	<0,01

Respondents link dental issues to relatively low consumption of vegetables like cabbage, cucumbers, tomatoes, beets, and others.

The preference of older people for fresh milk over fermented milk products is one of their nutritional characteristics. Therefore, fresh milk consumption ranges between 30,0±1,6 and 50,0±1,4 ml per day, while sour milk products (kefir, sour cream, and curdled milk) range between 160,0±15,6 ml in the warm season and 185,0±17,4 ml in the winter-spring season. The relatively high consumption of spreads (margarine) 20.0±0.5 g per day in the body of the elderly in the summer-autumn season and in the winter-spring season, which is 22.0±0.6 g per day compared to the recommended norms of a healthy diet in volume of 5.0 g per day, is caused by the affordability of these products and the fact that they frequently replace butter in rural areas. The daily intake of trans-fatty acids is 1.4% of the calorie content of diets in Uzbekistan, where an acceptable norm for the level of trans fatty acids in spreads and margarines is (4.0-8.0% of the mass of fats).

The amount of trans-isomers oleic acid in dietary lipids should not exceed 1% of the daily caloric intake, according to FAO/WHO recommendations [1,2]. Fatty acid trans-isomers make for 1.4% of the calories in the diets in our investigations. Since July 19, 2010, strict standards have been established in the EU countries for the content of trans-fatty acids in fatty products. These standards state that no more than 1% of the diet's total calories, or roughly 2% of the diet, may be trans-fatty acids.

The Technical Regulations TR TS 024/2011 for oil and fat products, which set a standard of no more than 2% trans-isomers in edible oil and fat products starting on January 1, 2018, have also been implemented in the Customs Union's member nations.

A US study from the early 1990s hypothesized that decreasing the amount of fat in the diet from 37% to 30% would reduce CVD and cancer deaths by 2% [1]. More recently, Willet [6] proposed that, for the prevention of CVD, replacing saturated and trans fatty acids in the diet may be more crucial than limiting overall fat intake. For instance, substituting monounsaturated fat for 6% of the energy consumed, which consists primarily of animal fats, can lower the incidence of CVD by 6–8% [7].

Other dietary factors may also be linked to an increased risk of cancer and CVD, according to mounting research. Trans-isomers have the potential to accumulate in the body and have the potential to cause serious side effects, such as stress, atherosclerosis, heart disease, cancer, hormonal failures (for example, obesity), etc. Several studies have demonstrated [2,6] that trans-isomers are capable of increasing the level of so-called low-density lipids dangerous for the vascular wall in the blood.

Conclusions:

1. The majority of retired military veterans were found to require particular nutritional nutrition. This situation highlights the necessity of setting up aged nutritional care in the hubs of a healthy lifestyle in primary health care.

2. Due to their ease of digestion and ability to prevent overeating, bakery products are consumed at a high rate in the average daily diet of the elderly, which amounts to 588.5±8.8 g/day in the summer-autumn season and 597.1±9.5 g/day in the winter-spring season.

3. National types of bakery products (flat cakes) predominate in the diets of the elderly in the amounts of 170,2±11,5 g per day in the summer-autumn and 192,2±12.2 g per day in the winter-spring seasons, as opposed to the consumption of pan wheat bread, which is 132,5±5,5 g per day in the summer-autumn season and 135.0±6.0 g per day in the winter-spring seasons.

4. The average daily diets of military retirees revealed relatively high consumption of spreads (margarines) in the amount of 20.0-22.0±0.6 g/day, compared to the recommended norms of a healthy diet in the amount of 5.0 g/day, which is due to the affordability of these products and their substitution with butter.

References:

1.WHO Regional Office for Europe, Copenhagen, 2005. Nutrition and Health in Europe, A New Framework for Action (WHO regional publications. European series; No. 96)

2.Diet, nutrition and chronic disease prevention. Report of the Joint WHO/FAO Expert Consultation (http://whqlibdoc.who.int/trs /WHO_TRS_916_rus.pdf). Geneva, World Health Organization, 2003 (WHO Technical Report Series, No 916).

3.Guidelines for assessing the amount of food consumed by the method of 24-hour (daily) nutrition reproduction: Method. recommendations / Nauch.-issled. in-t nutrition Ros. Acad. honey. Sciences: Comp. A.N. Martinchik, A.K. Baturin, A.I. Feoktistova, I.V. Svyakhovskaya. - M.: 1996.

4.Sanitary norms, rules and hygienic standards of the Republic of Uzbekistan (SanPiN) No. 007-20 “Average daily rational norms for food consumption by gender, age, professional groups of the population of Uzbekistan to ensure healthy nutrition”. Tashkent, 2020. [Electronic resource]. – Access mode: URL: https://regulation.gov.uz.

5.Chemical composition of food products. Reference tables, ed. A.A. Pokrovsky. -M.: Food industry, 1977, p. 232.

6.WILLETT, W.C. Will high-carbohydrate/low-fat diets reduce the risk of coronary heart disease? Proceedings of the Society for Experimental Biology and Medicine, 225:187–190 (2000).

7.P. Fayzibaev, I. Shovaliev, A. Khudoyberganov, B. Tukhtarov Assessment of dietary status in boarding houses for the disabled Turkish Journal of Physiotherapy and Rehabilitation 2021 p.4330-4335.