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ASSESSMENT OF SPATIAL-TIME DYNAMICS OF POPULATION HEALTH INDICATORS OF THE REPUBLIC OF KARAKAPAKSTAN

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ANNOTATION:

The article presents the results of the assessment of the spatial-temporal dynamics of health indicators of the population of the Republic of Karakalpakstan. Over a certain period of time, there is a certain redistribution of the main nosologies. Environmental factors that have a complex effect on the body of the population in the Aral Sea region lead to a decrease in reserve adaptive capabilities and their resistance to various diseases.

Keywords: Karakalpakstan, health status, environment, water factor, monitoring, nosology.

RELEVANCE:

The health of the population is one of the most important indicators of the level of welfare and well-being of society, and it is the health of the population that determines the preservation and development of the country's human potential, one of the main factors of progress. Health affects the duration and quality of life, reproduction of the population, its ability to work [10, 13].

Environmental protection in the interests of preserving human health, in particular, reducing the negative consequences of exposure to harmful factors, remains a fundamental task of biomedical research. At the same time, the main way of forming strategic directions for environmental safety and their implementation at the present stage is the assessment of risks and the development of management decisions to optimize the environment, living conditions and health status of the population [1, 4, 6].

An integrated ecological approach to the analysis of patterns describing the relationship between ecological conditions of the environment and the state of health of the population requires a quantitative assessment of not only those changes that take place in the human body, but also a quantitative assessment of information about the state of the environment. Negative tendencies of changes in the environment and the state of health of the population adversely affect the level of environmental safety, which leads to an awareness of the need for integration and joint efforts in solving global environmental problems and ensuring environmental safety both at the state and regional levels [1, 6].

MATERIAL AND METHODS:

All 15 districts of the Republic of Karakalpakstan were selected as objects of research. When performing the work, a complex of modern socio-ecological, physicochemical, hygienic, statistical research methods was used.

The archival data of the Karakalpak Departments "Suuakaba", "Karakalpaktutyunyu", statistical data of the Ministry of Health of the Republic of Uzbekistan, medical documents of the organizational and methodological department of the Republican Clinical Hospital No. 1, Central District Hospitals of the Ministry of Health, the Ministry of Macroeconomics and Statistics of the Republic of Karakalpakstan were used.

The air quality was studied on the basis of the data provided by the Glavhydrometeo-center of the Republic of Karakalpakstan. The

calculation of the annual territorial loads of pesticides by districts was carried out according to the Methodological recommendation "Study of the effects of pesticides and plant growth regulators on the health of the population" (1985), as well as archival data of the Karakalpak branch of "Uzselkhozkhimiya". The presence of pesticides in soil, water and food was determined by thin layer chromatography. Were used Methodological guidelines on ecological and hygienic zoning of the territory of the Republic of Uzbekistan according to the degree of danger to public health [2].

RESULTS AND DISCUSSION:

The problem of the Aral Sea and the Aral Sea region, which has arisen as a general ecological problem, has now grown into a problem of human ecology - his health and life in deteriorating natural conditions [1, 2, 5]. Today, a tense ecological situation has developed in many territories of the South Aral Sea region (Republic of Karakalpakstan). One of such regions is the drying area of the Aral Sea - the largest ecological catastrophe of anthropogenic origin. The transformations of the Aral Sea ecosystem, occurring as a result of a sharp change in the water regime, are numerous and varied. Under the conditions of the development of processes of anthropogenic desertification, salts are removed from the drained bottom of the Aral Sea, degradation of the vegetation cover is observed, and the intensity of the processes of salt accumulation in the soil increases [3].

The drying up of the Aral Sea led to the emergence of the huge salt desert Aralkum, the area of which is steadily increasing, and currently it is about 60 thousand km2. In the conditions of the drying up of the Aral Sea, this problem is aggravated by the removal of toxic salts (sulfates and chlorides) from the dried bottom. The salt transfer factor (70 million tons / year) has become dominant in the deterioration of atmospheric air quality. Air pollution with sulfate aerosols poses a real danger to public health, leading to profound functional and cytomorphological changes in the lung tissue. As a result of atmospheric pollution with salt aerosol, according to experts [1, 3, 11, 12], the health status of the population has deteriorated markedly in a number of indicators. Particular attention in the structure of morbidity is drawn to the growth of such ecologically caused diseases as diseases of the respiratory system, digestion and oncological pathology.

On the drained bottom, new, shallow groundwater horizons are formed, with a high capillary rise in moisture and salinity from 20 to 100 g / l. After the second year of draining the bottom of the Aral Sea, the coastal areas turn into plump salt marshes, the dryness and flowability of the soil increases. The carry-over of salts to the adjacent irrigated lands, which occurs at the same time, causes a significant decrease in the yield of agricultural crops [2, 8, 11].

Currently, one of the most powerful factors affecting the human body are pesticides - a special group of chemicals that are deliberately introduced into the environment, which, under certain conditions, increase the risk of health disorders [8, 9, 12, 14]. The long-term use of pesticides on a huge scale in all countries of the world has revealed a number of negative consequences, such as pollution of the environment, food products, and a negative impact on human health. Most pesticides can persist in the environment for a long time, getting from one environmental object to another, in some cases turning into more toxic compounds, and can pose a real danger to people, flora and fauna, causing an imbalance in biocenotic equilibrium.

The environment in the Republic of Karakalpakstan is a dynamic environment in which both qualitative and quantitative changes

constantly occur, accompanied by a decrease or increase in pollution levels, the disappearance or appearance of new factors. Note that the human body is complexly influenced by a combination of factors of varying or low intensity, which usually causes a biological response of the body to toxicants in the form of the accumulation of various types of pollutants in the tissues of the body, the appearance of physiological changes in the body and distant symptoms of the disease, as well as the development of the disease [6 , 8, 13, 14].

Considering the above, it can be indicated that environmental factors constantly acting in a complex manner on the body of people living in the Aral Sea region lead to an ecological adaptive stress of the population's body, reducing their stability and, as a result, to a decrease in reserve adaptive capabilities and their resistance to various diseases.

The prevailing environmental disadvantage in the region is reflected in the health of the population. The Republic of Karakalpakstan is characterized by territorial differentiation by region. Determining the morbidity by class separately, the highest percentages of registered patients are detected mainly in the northern and somewhat less in the southern regions of Karakalpakstan. For example, infectious and parasitic diseases prevail mainly in the Muynak region - 19.5%, in the Ellikala, Beruniy and Turtkul regions (6.3, 7.5 and 8.4%, respectively). Considering the dynamics of the overall morbidity of the population living in the Republic of Karakalpakstan, it can be noted that the main maximum indicators fell on the period from 2003 to 2006 (Fig. 1). The highest peak was reached in 2005 (1053.1 per 1000 us.)

2008	2009	2010	2011	2012
969	969	948.9	928.8	952.8

2008	2009	2010	2011	2012
440.1	400.8	400.5	400.4	407.9
419.8	408.1	386	344.5	381.4
452.2	420.2	475.8	540.1	533.4

Fig. 1. Dynamics of the general morbidity of the population of the Republic of Karakalpakstan (2001-2018)

Since 2006, there has been a decrease in the level of general morbidity until 2011 (928.8 per 1000 people) and the level is stabilizing until 2014.

According to researchers, the structure and dynamics of certain nosological forms of diseases in the Republic of Karakalpakstan are subject to a steady increase in indicators: congenital anomalies, ischemic heart disease, hypertension, gastric ulcer, esophageal cancer, cholelithiasis, diseases of the peripheral nervous system [6, 8, 9, 11, 14]. A comparative analysis of the structure of the general morbidity of the population of Karakalpakstan showed that if in 2010 the nosology of diseases of the blood and hematopoietic organs (44.7%) makes the largest contribution to the overall structure of morbidity, the share of respiratory diseases was 15.3%, the share of endocrine diseases system was 7.8, digestive system - 6.2% (Fig. 2). Analysis of the structure of the distribution of nosological forms of diseases in 2020. showed that there is some redistribution of the main nosologies. Thus, the proportion of diseases of the blood and hematopoiesis system was 26.9%, at the same time there is an increase in the overall structure of morbidity in the

proportion of diseases of the respiratory system - 25.5%

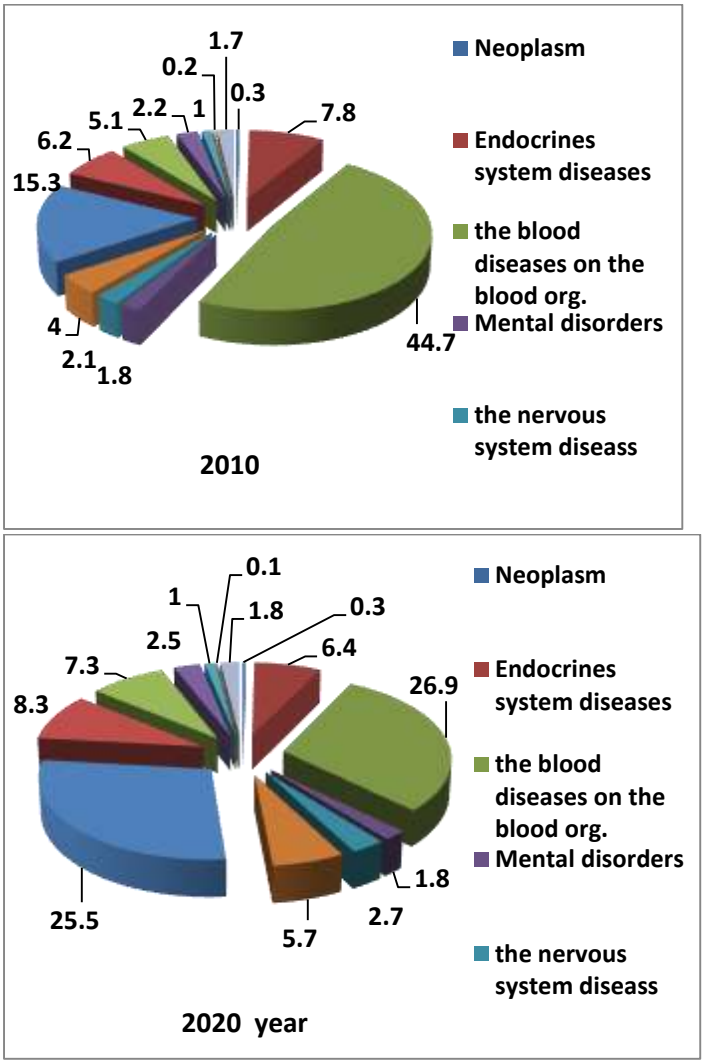

Fig. 2. Comparative analysis of the morbidity structure of the population of Karakalpakstan,%

The proportion of such diseases as the digestive system, the genitourinary system and the endocrine system was distributed almost equally (8.3; 7.3 and 6.4, respectively). The proportion of diseases of the circulatory system in 2020 slightly increased compared to 2010. Environmental factors are considered as risk factors, i.e. such components of etiology, which, although important for the development and progression of the disease, but in the absence of other conditions (for example, genetic predisposition, altered immune or endocrine status of the organism) are not capable of causing disease in a particular person. Cluster analysis of the relationship between different classes of nosology in the Republic of Karakalpakstan showed that the most similar in the structure were such classes as diseases of the respiratory system, digestion and circulatory system.

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