

THE STATE OF HEALTH AND THE ENVIRONMENT OF THE POPULATION OF THE REPUBLIC OF KARAKALPAKSTAN

Dauilbayeva Kulshat Kenesbaevna

Associate Professor of the Department of Hygiene and Environment,
Epidemiology, Doctor of Philosophy in Biological Sciences

Tanirbergenova Gulziyra Saparbaevna

Basic Doctoral Candidate of Karakalpak State University

Jienbaeva Miyrigul Bisenbaevna

Assistant, Department of General Biology and
Physiology of Karakalpak State University

Abstract:

As a result of the analysis of the current state of the medical and geographical situation in the health of the population of the Republic of Karakalpakstan, the general multifactorial influence of natural and anthropogenic factors was revealed, and the leading modern feature of the formation of morbidity of the population of the Republic of Karakalpakstan as an ecologically crisis region was identified. In the subpopulation of the Republic of Karakalpakstan, the main regularities of the territorial distribution of nosology in most cases are an increase in the frequency of occurrence from ecologically more favorable regions (Southern zone) to less favorable ones (Northern zone).

Keywords: Republic of Karakalpakstan, health, ecologically crisis, Aral Sea, salinization process, territorial distribution of nosology in most cases.

Introduction

Currently, the scientific challenges of assessing the impact of environmental factors on human health are considered priority tasks of state environmental



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policy in almost all countries worldwide. Modern anthropogenic factors, reflecting various harmful effects on the environment, significantly influence overall biopotential, including the formation of public health. In this regard, the problem of conducting an effective environmental policy aimed at developing and implementing a systematic strategy for improving the living environment and self-purification of the natural environment is one of the pressing issues. Research aimed at developing the scientific basis for a comprehensive assessment of the state of natural and anthropogenic ecosystems is of great scientific and practical importance in the preservation of biodiversity [1, 2, 3, 4, 5, 6].

The study of indicators of diseases of the population and the anthropoeco system, as well as environmental parameters in various districts of the Republic of Karakalpakstan, is relevant.

RESEARCH MATERIALS AND METHODS:

Ecological, physiological and statistical analysis

Numerous studies related to the influence of various factors and the state of public health have convincingly proven that pollution of the environment and living conditions negatively affects public health (Abdirov et al., 1995; Ataniyazova O.A et al., 1998; Yeschanov 2001; Kurbanov et al., 2002, Mambetullaeva 2004a; 2004b; Ataniyazova O.A et al., 2011; Kudaibergenova, 2017; Turdimambetov et al., 2024). Health is widely used in scientific research as a key indicator, reflecting humanity's ability to relatively effectively perform its social and biological functions under specific regional conditions. Novikov and Sakiev Berdnik, 2000; Pinigin Shandala Zvinyatskovsky. 2001; and others Rakhmanin., 2002, 2005; Tulakin et al., 2005, 2007; Krasovsky et al. 2008; Wright, 2002; et al. Hales., 2003).

Research Results

Problems of studying the impact of environmental pollution on human health

- The impact of salt aerosol from the dried bottom of the Aral Sea on the ecological situation in the Southern Aral Sea region is not limited to soil salinization and plant erosion. It is known that an increase in the



concentration of aerosols in the air affects the kinetics and dynamics of atmospheric processes;

- The accumulation of salts in soils creates arid climatic conditions due to the acceleration of the salinization process, the mineralization of groundwater, and the intensification of the evaporation state of the water regime;
- High demand for clean, high-quality water (due to the hot climate);
- Transboundary nature of large rivers;
- Agriculture is mainly oriented towards irrigation;
- Strong annual trend of increasing pollution of open water sources and groundwater reserves;
- Low level of centralized water supply, especially in rural settlements.

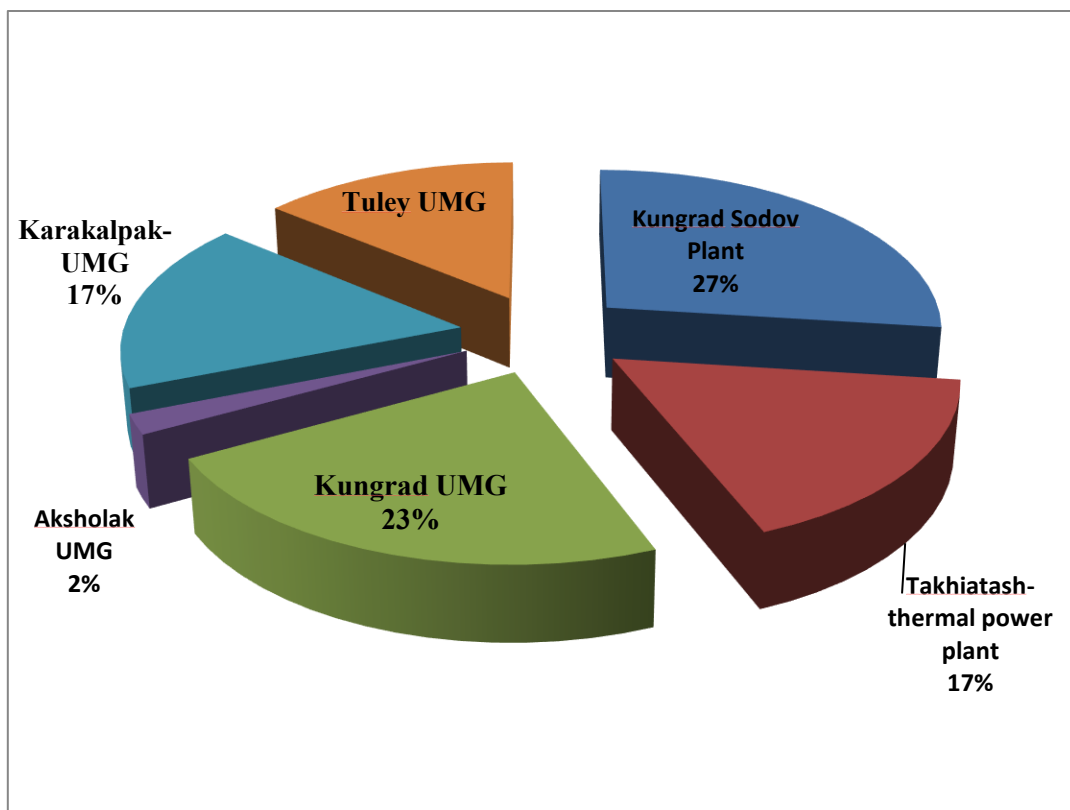


Figure 1. Dynamics of pollutant emissions from large enterprises in the Republic of Karakalpakstan



Territorial by districts of the Republic of Karakalpakstan are distinguished by the fact that they differ from each other. By distribution Separate detection of the disease of registered patients. The highest percentage is mainly observed in the southern regions of Karakalpakstan.

<p>For example, infectious and parasitic diseases mainly In Muynak district - 19.5%, Ellikkala, Beruni and Turtkul districts (respectively 6,3, 7,5 and 8.4%) does.</p>	<p>Data analysis showed that Karakalpakstan In the southern districts 14.7% in the Beruniy district, 8.5% cancer in Turtkul diseased number of patients also detected</p>	<p>Endocrine system digestive diseases disorder of the control system and metabolic diseases Infection withincluding the Southernregions occupy leading positions occupies. For example, in the Beruniy district the number of such patients was 19.6%, Ellikkala - 16.3%, in Turtkul - 11.2% constitutes.</p>
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According to a comparative analysis of the overall morbidity structure of the population of the Republic of Karakalpakstan, in 2010 the largest share of the overall morbidity structure was accounted for by blood diseases - 44.7%, respiratory diseases - 15.3%, endocrine diseases - 7.8%, and digestive diseases - 6.2%. By 2024, these diseases will reach 23.7; 22.1; 7.9; It changed to 8.3.

The high morbidity rate of the population of Karakalpakstan, including the classes of diseases and nosologies called environmental indicators by the World Health Organization (WHO), requires the improvement of sanitary and epidemiological methods and approaches, taking into account the specifics of the region.

Conceptual model of transmission and ecological factors of influence

- source of pollution
- The factor is transmitted through carriers (production, consumer goods, waste flows, etc.)



- environment, soil, air, water
- potential effect of a factor

Assessment of the dynamics of regional and temporary indicators of the health of the population of the Republic of Karakalpakstan

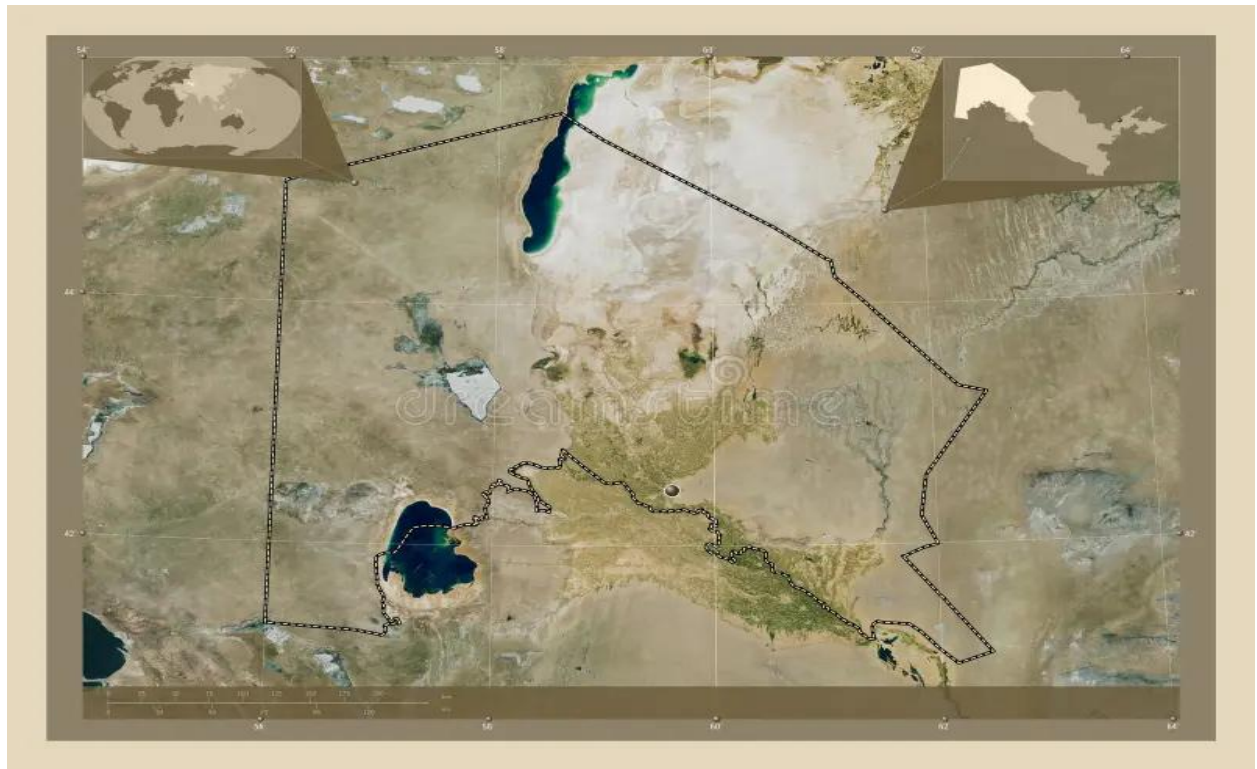


Figure 2. Location of Aral sea

Scientists have found that when pesticides enter the body, depending on the dose, acute chronic intoxication can develop. At the same time, any amount of them, like substances synthesized by the evolution of a foreign and unknown person, acquires xenobiotic properties and leads to adaptive changes in the body. The state of the body plays a significant role in the development of intoxication. Children, adolescents, sick and ill people, as well as pregnant and breastfeeding women are very sensitive. Characterized by a variety of clinical manifestations. Functional disorders of the nervous system are expressed mainly in asthenic syndrome and vegetative-vascular dystonia associated with a pathological process of the cardiovascular system (hypotension, disruption of the rhythm of



cardiac activity, function of cardiac muscle conductivity and contractility). Hypertrophic and subatrophic changes in the mucous membrane of the upper respiratory tract. Frequent chronic gastritis, hepatocholecystitis, hepatitis, inflammation, skin diseases, asymptomatic ulcer disease [7, 8, 9].

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During the analysis, a reliable correlation was revealed between the levels of some parameters in the composition of drinking water and atmospheric air and the overall morbidity of the adult and child population of Karakalpakstan. Thus, we found a weak correlation with the composition of atmospheric air, i.e., with sulfur dioxide ($R = 0.18$), with nitrogen dioxide ($R = 0.66$), and with the dust content of the surface air layer ($R = 0.54$).

The quality of drinking water is also related to the general morbidity of the population: the level of chlorides ($R = 0.43$) and sulfates ($R = 0.73$) in the water. The general morbidity of the child population is closely related to the quality of drinking water (with sulfates in water $P = 0.83$ and with chlorides $P = 0.52$). The analysis revealed a correlation with atmospheric air pollution: with nitrogen dioxide ($R = 0.58$) and with dust ($R = 0.53$). Although the environment consists of separate components, they are one whole.



Conclusion

- As a result of the analysis of the current state of the medical and geographical situation in the health of the population of the Republic of Karakalpakstan, the general multifactorial influence of natural and anthropogenic factors was revealed, and the leading modern feature of the formation of morbidity of the population of the Republic of Karakalpakstan as an ecologically crisis region was identified.
- Diseases intensively associated with environmental conditions were identified: diseases of the cardiovascular system, respiratory and digestive organs. The incidence of these diseases is 69.5%, and their prevalence among the population of various regions of Karakalpakstan is 74.1%.
- In the subpopulation of the Republic of Karakalpakstan, the main regularities of the territorial distribution of nosology in most cases are an increase in the frequency of occurrence from ecologically more favorable regions (Southern zone) to less favorable ones (Northern zone).
- 4. It was established that the prognostic indicators of the incidence of diseases of the genitourinary and circulatory system in the population have a significant tendency to increase, and fluctuations are cyclical in nature. The obtained prognostic regression models will serve as the basis for compiling a forecast of the overall morbidity of the population of the Republic of Karakalpakstan.

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