

**To Study the Problem of Drinking Water Shortage and Public Health****Tulkin Turdimovich Adilov**

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**ABSTRACT**

The problem of drinking water shortage and public health in the modern world is becoming more and more urgent. It is common for all humankind, because the movement of water masses does not know national boundaries. The problem of drinking water and the associated health of the population on the globe becomes more and more urgent every year. The global problem of drinking water shortage and the health of the population is that water resources are not replenished, the consequence of which can adversely affect the health of the population. The main purpose of this article is to determine the relationship between drinking water scarcity and public health. In this article, we examined methods for analyzing drinking water shortages and related issues of public health in the modern world.

**KEY WORDS:** Shortage of drinking water, life expectancy, public health, fresh water supplies, greenhouse effect, body heat exchange, fainting, population migration, water forum, body dehydration.

**INTRODUCTION**

It is known that the state of the environment largely determines the life span of a person, and the state of his health, and his working capacity, and much more. But we did not consider this issue directly, since it was not our task. This requires more in-depth research, including in-depth medical study. This article focuses on the problem of drinking water shortage and the health of the population at the present stage.

Currently, drinking water has become the most vulnerable part of nature. Wastewater, pesticides, fertilizers, mercury, arsenic, lead and much more end up in rivers and lakes in huge quantities. According to experts, the level of pollution of such rivers as the Danube, Volga, Rhine, Mississippi, as well as the Great American Lakes, exceed the maximum permissible norms. According to experts, in some regions of the world about 80% of all diseases are caused by poor quality water. Considering that water intake facilities, water pipelines, which, as a rule, receive water from open reservoirs, show in samples almost 30 percent of contamination both in terms of microbial and chemical status, which, in turn, directly negatively affects the health of the population

Today, the shortage of drinking water is felt all over the world. The problem of the shortage of drinking water on Earth is becoming more and more urgent every year. Along with other global problems of our time, there is the problem of the shortage of drinking water and the health of the population. The global problem of fresh water is that the process of replenishment of water resources does not take place. Since the last decade of the twentieth century, the shortage of drinking water has been considered as one of the global problems of our time, and as the population of our planet grew, the scale of water consumption and, accordingly, water shortage increased significantly, which subsequently began to lead to deteriorating living conditions and slowed down the economic development of countries, lacking water resources.

According to experts, drinking water supplies are considered limited, and they are already ending. According to the data of the Washington Institute of World Resources, about a third of the world's population - about 2.6 billion people live in countries with "severe water shortages", and 1.7 billion people in 17 countries face "extreme water shortages." About a dozen countries in the arid countries of the Middle East experience a very acute shortage of drinking water supplies, and in India the process of drinking water shortages has reached a critical level. All this can lead to fraught consequences in all areas of the national economy - from economic development and deterioration of

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the health of the country's population. Countries such as Pakistan, Botswana, Turkmenistan and Eritrea are also severely water-stressed.

## LITERARY RESEARCH

All living organisms, including the human body, need clean drinking water as the main component for their cells and tissues. Not only do we need sufficient water for the functioning of cells and tissues, it is also important that the water is not contaminated with harmful substances that can be toxic, such as metals and thousands of other organic and inorganic substances that enter the aquatic environment. Water pollution, even at low levels, can lead to ecosystem instability and negative impacts on human health.

A certain and constant water content is a necessary condition for the existence of a living organism. When the amount of water consumed and its salt composition changes, the processes of digestion and assimilation of food, hematopoiesis, etc. are disrupted. Without water, it is impossible to regulate heat exchange between the body and the environment and maintain body temperature. A person is extremely sensitive to the change in the water content in his body and can live without it for only a few days. With a loss of water in an amount of less than 2% of body weight (1-1.5 l), a feeling of thirst appears, with a loss of 6-8%, a semi-fainting state occurs, with 10% - hallucinations, impaired swallowing. It turns out that the loss of 10-20% of water is dangerous to human life. Animals die when 20-25% of water is lost.

According to experts, water has no nutritional value, but it is an indispensable part of all life on the globe. Plants contain up to 90% of water, while in the body of an adult, its content is in the range of 60-65%, but this is "averaged" from the total body weight. In more detail, bones are only 22% of water, but the brain is already 75%, muscles are also 75% water (they contain about half of all body water), blood is already 92% water. The primary role of water in the life of all living things, including humans, is because it is a universal solvent for a huge amount of chemicals. Based on this, we can state that water is actually the environment in which all the necessary processes in the human body take place.

In the materials of the eighth World Water Forum [1], UN experts noted that the world is on the brink of a water disaster. Along with this, it was stated that every tenth inhabitant of the Earth experiences an acute shortage of drinking water, i.e. approximately 884 million people. According to forecasts of UN experts, by 2050 the need for water will increase by 20%. Many countries have already reached their ultimate water use capacity.

In addition, in the near future, the problem of lack of water resources will turn into a political problem, UN experts point out. If nothing is done, almost 5 billion people (about 67% of the world's population) will remain without satisfactorily treated water by 2030. Lack of water in desert and semi-desert regions will cause intensive migration of the population. It is expected that this will affect from 24 million to 700 million people. In 2017, more than 20 million people worldwide fled their homes due to a shortage of drinking water.

The main achievement of the World Water Council is its contribution to raising awareness of global water issues and political mobilization, which it has achieved through the World Water Forum. This water forum serves as stepping-stones to global cooperation on water issues, the Forum is a unique platform where the water community and policy and decision makers from all regions of the world can come together, discuss and try to find solutions to achieve water security.

According to Danilov-Danilyan V.I. [2] a person needs clean fresh water, since it is water that is responsible for all the most important functions in the human body, and the human body intelligently manages its amount in order to deliver vitamins and minerals to the cells that do their job every day. The body has a large reserve of water, but it only lasts for 5 days. Drinking water is not an ordinary and simple liquid, in fact, with the help of these liquid, metabolic processes in the cells and tissues of the body are carried out. You need to drink about 2 liters of purified water a day, trying to replace its population, they drink energy drinks, teas, juices, beer. In the process of using these liquids by a person, he first receives the chemical composition of these products (preservatives, caffeine, artificial sugar, etc.). In this case, not, the water will participate in the exchange, and the ingredients have a diuretic effect and remove clean water from the tissues. If a person does not receive a sufficient amount of water, the cells not only do not generate new energy, they also give back what they managed to accumulate.

Then the cells begin to depend on food. In order to accumulate energy again, the body begins to store fat, one of the problems of human health disorders develops - obesity, which is considered an extremely negative process.

V.V. Markov [3] believes that the importance of drinking water cannot be overestimated: the life and health of all inhabitants of the world depends on its quality. The lack of drinking water can have fraught consequences for the health of the population in various forms: from the deterioration of living conditions and the development of diseases to dehydration and human death.

Contaminated water can contain various pathogenic microorganisms that are capable of inducing the most dangerous diseases. Based on the data of this author, we can state that if water is not supplied enough and in case of pollution of water bodies, the following negative processes can begin in the human body:

- Ischemic heart disease, atherosclerosis, as well as diabetes mellitus caused by viscous "thick" blood, which is deprived of sufficient water;
- Kidney disease;
- The process of thickening of bile, which leads to the formation of sand and stones in the gallbladder, which irritates the liver;
- Some metabolic products can be retained in bones, joints, which causes crunching and severe pain (for example, pain with gout);
- The state of chronic dehydration threatens with osteochondritis, arthritis, arthrosis, as well as problems with the spine;
- Dehydration of the lens and impaired microcirculation of blood in the vessels of the eyeball is the cause of cataracts, age-related farsightedness and even detachment of the retina;
- Allergy occurs against the background of dehydration of the body, and a lack of enzymes;
- Bronchial asthma (you need to drink clean water, the sputum liquefies and goes out).

Further, the author, in his research, cites facts related to the symptoms of dehydration of the human body, in particular, it is noted that these include dry skin, fatigue, poor concentration, headaches, increased pressure, poor kidney function, dry cough, pain in the back and joints, high stress levels. If the body receives a sufficient amount of water, then the person becomes more energetic and resilient, improves digestion, the circulatory system, reducing the likelihood of a heart attack

According to the WHO (World Health Organization) [4], nearly 3 billion inhabitants of the planet use poor-quality drinking water. In this regard, about a quarter of the world's population is at risk of getting sick every year, about every tenth inhabitant of the planet gets sick and for this reason, about 4 million children and 18 million adults die every year. An important indicator is the balance of the mineral composition of the water, an excess or deficiency of which can lead to the following serious consequences:

- Ingestion, through drinking water, of excessive amounts of fluoride compounds, can cause fluorosis, which affects teeth and bones;
- Long-term exposure to arsenic can lead to the development of cancer and skin lesions;
- In addition to iron deficiency, a number of infectious diseases associated with non-observance of drinking water hygiene and sanitation are important factors in the occurrence of anemia. In addition, waterborne diseases are hepatitis A, diarrhea, typhoid fever, cholera.

According to the UN, nearly 80% of diseases in developing countries, which kill nearly 3 million people every year, are associated with poor water quality.

As noted in the materials of the source <http://www.circleofblue.org/2010/> [5] issues related to the problem of drinking water scarcity and public health are discussed around the world, and many ideas have been proposed on how to prepare for the projected shortage of drinking water resources, water in many countries if climate change continues at the same rate.

In the work of the author [6], it is noted that the demographic explosion is causing an increase in the danger to the Earth's biosphere. In the pre-industrial era, the area of exploited land was less than 5% of the land area, on which man used no more than 20%. As a result, the total anthropogenic share of the consumption of biosphere products did not exceed 1%.

The modern share is an order of magnitude higher than this value. Deforestation, desertification of land (up to 35% of the land is under the threat of desertification), pollution of soil, water, air, etc. are taking place at an accelerated pace. Thus, over 150 million tons of sulfur dioxide, 250 million tons of dust, etc. are emitted into the atmosphere annually. Over the past century, the concentration of carbon dioxide in the atmosphere has increased by about 15%, and by the middle of the 21st century, it may double, becoming one of the reasons for the "greenhouse" effect that can cause melting of snow, glaciers and flooding of a large part of the land. As you can see, the main reason for the aggravation of the water problem of all humanity is urbanization, population growth also affects the problem, and it is in the regions

with the most unfavorable situation. The greenhouse effect also makes its contribution - water spaces evaporate without a trace from the planet's surface. In addition, each person consumes water thoughtlessly in much larger volumes than he needs.

In the studies of the authors Adilov T.T., Sarikulov M.Kh. [7] noted that the biggest medical threat to civilization and humanity at the present stage should be called COVID-19 - a pandemic that spreads around the world with the speed, if not an explosive, then a fiery wave. A fire called COVID-19 is raging over our planet, and each individual person and the human population as a whole are a combustible material for it. Can a fire be extinguished?

Will civilization not perish - now not in the all-consuming fire of a nuclear war, but from a small, but vicious virus, so far uncontrollable? Before COVID-19, humanity felt defenseless, as in the face of an unfamiliar and amazingly insidious enemy. In this regard, we would like to note that along with the problem of the shortage of drinking water on the globe, another problem has emerged - a pandemic of fear.

## METHOD

According to world statistics, in the whole world there is an excessive and unplanned consumption of drinking water. The main reasons for this are the rapid development of production and the growth of the world's population. The process of reducing unplanned water consumption is no longer possible, since in this case it would be necessary to drastically reduce the production process for the production of material goods and would have to abandon many of the benefits of civilization. The shortage of fresh water is also influenced by pollution factors, because the volume of water suitable for consumption is decreasing. Therefore, more attention should be paid to maintaining the purity of water resources. In this regard, we can note that the life and health of all inhabitants of the planet Earth depends on its quality.

An analysis of the study of the problems associated with the shortage of drinking water shows that for a long historical period in regions with natural reserves of fresh water, a person fully satisfied his needs for water, without feeling a shortage of it. However, due to the intensive growth of the population and its production activities, the need for water has steadily increased. At present, it has reached such proportions that in many regions of the planet, and especially in developed industrial regions, there is an acute problem of lack of drinking water. There is also another problem: pollution by runoff and industrial emissions, washing off of fertilizers from fields and the penetration of salt water in coastal zones into aquifers due to pumping of groundwater. This also significantly reduces the supply of drinking water. There are reports that 1.5 billion of the world's population do not have access to clean water.

It should be noted that no living creature on Earth could live without water. It is thanks to drinking water that the inhabitants of the globe exist in their current form - with oceans, vegetation and various living things. Fresh water reserves account for only 2.5% of the total volume of water on the globe (about 1.35-1.4 billion m<sup>3</sup>).

Almost all of the water consumed by humans comes from lakes, rivers and shallow underground sources, while its main reserves are found in glaciers (Antarctica, Arctic and Greenland) and deep aquifers. The option of using glaciers as an alternative source of fresh liquid was proposed, but according to experts, such a solution to the problem can lead to irreversible climate changes.

The lack of drinking water can have negative consequences for human health in the form of various kinds of dangerous diseases. The possibility of a dangerous infection began to be realized not only by specialists, but also by ordinary residents. This is evidenced by the increasing demand for purified bottled and bottled water around the world. People buy such water in order to ensure that no dangerous pathogens enter the body.

## CONCLUSION

The process of reducing water consumption is no longer possible, since for this it will be necessary to reduce the production of material values and abandon many benefits of civilization. Pollution factors also influence, because the volume of water suitable for consumption is reduced.

Therefore, more attention should be paid to maintaining the purity of water resources. There is an opinion that the supply of water is inexhaustible. After all, the world's oceans cover 71% of the Earth's surface and contain the largest share of the planet's water resources. It is assumed that one-day scientists will find a way to turn ocean salt water into drinking water and we can assume that the problem will be solved by itself, and the issue will be removed from the agenda. In our opinion, fresh water will be a source in the next few centuries, one of the most important resources in the world [4-10].

Thus, we can conclude that drinking water may become a strategic resource in the near future. Experts are seriously talking about the likelihood of water wars and conflicts. In addition, a lack of drinking water can lead to hunger, disease, political instability and armed conflict. To ensure that future generations do not experience a shortage of fresh water, we all must urgently fight for the purity of water resources. Each of us can contribute to solving this problem.

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