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The Problems of Drinking Water Shortage and Public Health at the Present Stage

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ABSTRACT: The problem of the shortage of drinking water and the health of the population at the present stage are becoming more and more problematic. This problem is common to all mankind, because the movement of water masses does not know state borders. The problem of drinking water and the health of the population associated with it on the globe is becoming more and more urgent every year. The global problem of drinking water scarcity and public health is that there is no replenishment of water resources, the consequence of which may adversely affect the health of the population. The main goal of this work is to find the relationship between the shortage of drinking water and public health. In this article, we examined methods for analyzing the deficit of drinking water and related issues of public health at the present stage.

KEY WORDS: drinking water shortage, intellectual analysis of the problem of drinking water shortage and public health.

I. INTRODUCTION

As you know, one of the dangers threatening modern civilization and humanity is an environmental catastrophe with its many components, including a change in the global climate and a shortage of drinking water. At the present stage of the development of mankind, perhaps the most urgent problem has been faced - how to preserve nature and civilization, since no one knows when or in what form this or that catastrophe can happen.

Along with an increase in the world's population, the process of manufacturing industrial goods and agricultural products is increasing. As a result, there is a rapid increase in the consumption of drinking water in all regions of the world, and the used drinking water is returned by humans to rivers as wastewater, and then it enters the seas and oceans. The growth of wastewater treatment plants today lags behind the norm of water consumption. The problem of drinking water on Earth is becoming more and more urgent every year. This problem is common to all mankind, because the movement of water masses does not know state borders. The global problem of fresh water is that there is no replenishment of water resources.

At the present stage, the world community faces a number of problems that threaten the existence of humanity and civilization. This is, first of all, the demographic problem caused by overpopulation, migration, aging and is one of the root causes of a number of other global problems of our time. For thousands of years, people have lived, worked, developed, but he did not suspect that perhaps the day will come when it will become difficult or impossible for him to breathe clean air, drink clean water, grow anything on the ground, since the air is polluted , water is poisoned.

It is known that the state of the environment in many respects determines the life expectancy of a person, his state of health, his ability to work, and much more. But we did not directly address this issue, since this was not our task. This requires more in-depth research and, in particular, in-depth medical research. This article has studied only issues related to the dependence of the state of public health on the shortage of drinking water.

Currently, the most vulnerable part of nature is drinking water. Wastewater, pesticides, fertilizers, mercury, arsenic, lead and much more in large quantities fall into rivers and lakes. 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 substandard water. If we take into account that water intake facilities, water supply systems, which, as a rule, receive water from open



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water bodies, show in samples nearly 30 percent of contaminants both in microbial and chemical conditions, which, in turn, directly affect the state of public health.

Today, there is a shortage of drinking water all over the world. The problem of shortage of drinking water on the Earth every year becomes more and more urgent. Along with other global problems of our time, there is the problem of drinking water shortage and public health. The global problem of fresh water is that the process of replenishment of water resources does not occur. The shortage of drinking water since the last decade of the twentieth century is considered as one of the global problems of our time, and with the growth of the population of our planet, the scale of water consumption and, consequently, water shortages increased significantly, which subsequently led to worsening living conditions and slowed down the economic development of countries. lacking water resources.

According to experts, the supply of drinking water is considered limited, and they are already coming to an end. According to 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 are experiencing a very acute shortage of drinking water, and in India the process of shortage of drinking water has reached a critical level. All this can lead to fraught consequences in all areas of the national economy - from economic development and the deterioration of the health of the country's population. Countries such as Pakistan, Botswana, Turkmenistan and Eritrea also experience extreme water shortages.

It should be noted that no living creature on Earth can live without water. Thanks to drinking water, the inhabitants of the globe exist in their current form - with oceans, vegetation and various living creatures. Fresh water reserves make up only 2.5% of the total volume of water on the globe (about 1.35-1.4 billion m³). Almost all of the water consumed by man comes from lakes, rivers, and shallow underground sources, while its main reserves are contained in glaciers (Antarctica, Arctic, Greenland) and deep aquifers. An option was proposed for using glaciers as an alternative source of fresh liquid, but according to experts, such an option to solve the problem can lead to irreversible climate changes.

As you know, the main reason for the aggravation of the water problem of all mankind is urbanization. To adapt the Earth to its needs, humanity violates and pollutes the ecosystem, which leads to a worsening of the situation. The problem is also affected by population growth, and it is in the regions with the most unfavorable situations. The greenhouse effect also makes its contribution - water open spaces evaporate without a trace from the surface of the planet. In addition, each person consumes thoughtlessly water in much larger volumes than he needs.

II. SYSTEM VALUE

This article focuses on what the problem of drinking water shortage is and the health of the population at the present stage. A study of the literature review is presented in section III, the methodology is explained in section IV, and section V discusses future research and conclusions.

III. LITERARY STUDY

All living organisms, including the human body, need clean drinking water as the main component for their cells and tissues. We need not only 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 effects on human health.

A definite and constant water content is the necessary condition for the existence of a living organism. When the amount of consumed water and its salt composition changes, the processes of digestion and assimilation of food, hematopoiesis, etc. are disturbed. Without water, it is impossible to regulate the body's heat exchange with the environment and maintain body temperature. A person extremely acutely senses a 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 the body weight (1-1.5 L), a feeling of thirst appears, with a loss of 6-8%, a fainting state occurs, with 10% - hallucinations, impaired



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swallowing. It turns out that the loss of 10-20% of water is dangerous to human life. Animals die with the loss of 20-25% of water.

According to experts, water has no nutritional value, but it is an indispensable component 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. Speaking in more detail, then the bones are only 22% of the water, but the brain is already 75%, the muscles are also 75% of the water (they contain about half of all body water), the blood consists of water as much as 92%. The primary role of water in the life of all living things, including humans, is related to the fact that 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.

The materials of the 8th World Water Forum by UN experts noted that the world is on the verge of a water disaster. Along with this, it was stated that every tenth inhabitant of the Earth experiences an acute shortage of drinking water, which is almost 884 million people. According to UN experts, by 2050 water demand will increase by 20%. Many countries have already reached their limit on water use. And in the near future, the problem of water shortages will turn into a political problem, UN experts point out. If nothing is done, almost 5 billion people will remain without satisfactorily treated water by 2030 (about 67% of the world's population). Lack of water in desert and semi-desert regions will cause intense population migration. It is expected that this will affect from 24 million to 700 million people. In 2017, over 20 million people worldwide left 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 he achieved through the World Water Forum. This water forum serves as a stepping stone to global cooperation on water issues, the Forum is a unique platform where the water community and policy makers and decision makers from all regions of the world can come together to discuss and try to find solutions to achieve water security.

According to Danilov-Danilyan V.I. 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 controls its quantity in order to bring vitamins and minerals to the cells that do their work every day. The body has large reserves of water, but it lasts only 5 days. Drinking water is not an ordinary and simple liquid, in fact, with the help of this liquid all metabolic processes in cells and body tissues are carried out. A day you need to drink about 2 liters of purified water, trying to replace its population, drink energy drinks, teas, juices, beer. When a person consumes these liquids, he first of all receives the chemical composition of these products (preservatives, caffeine, artificial sugar, etc.). In this case, water will not participate in the exchange, and the ingredients have a diuretic effect and remove pure water from the tissues. If a person does not receive enough water, the cells not only do not produce new energy, they give back what they have accumulated. 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 violation of public health - obesity, which is considered an extremely negative process, develops.

- Markov V.V. et al. They believe that the importance of drinking water cannot be overestimated: the life and health of all the inhabitants of the globe depend on its quality. Lack of drinking water can have consequences for the health of the population in a variety of ways: from the deterioration of living conditions and the development of diseases up to dehydration and death. Contaminated water may contain various pathogenic microorganisms that are capable of initiating the most dangerous diseases. Based on the data of these authors, we can state that if water is not supplied enough and in case of pollution of water bodies the following negative processes in the human body can begin:
 - coronary heart disease, atherosclerosis, as well as diabetes mellitus caused by viscous "thick" blood, which is devoid of enough water;
 - renal disease;
 - the process of thickening bile, which leads to the formation of sand and stones in the gall bladder, which irritates the liver;
 - some metabolic products may linger in the bones and joints, which causes crunching and severe pain (for example, pain with gout);



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- the state of chronic dehydration threatens with osteochondrosis, arthritis, arthrosis, as well as problems with the spine;
 - dehydration of the lens and disturbance of blood microcirculation in the vessels of the eyeball is the cause of cataracts, hyperopia, and even retinal detachment;
 - allergy occurs against the background of dehydration, and a lack of enzymes;
- bronchial asthma (you need to drink clean water, sputum liquefies and goes outside).

The same authors in their studies cite 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, back and joint pain high stress level. 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 WHO (World Health Organization), nearly 3 billion people on the planet use low-quality drinking water. In this regard, approximately a quarter of the world's population is at risk of getting sick each year, approximately one in ten people on the planet is 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 water, an excess or deficiency of which can lead to the following serious consequences:

- the ingestion of excessive fluoride compounds into the body through drinking water can cause fluorosis, which affects the teeth and bones;
- prolonged exposure to arsenic can lead to cancer and skin lesions;
- in addition to iron deficiency, an important factor in the occurrence of anemia is a number of infectious diseases associated with poor hygiene of drinking water and sanitation. Also, waterborne diseases are hepatitis A, diarrhea, typhoid fever, and cholera.

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

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

IV. METHODOLOGY

According to global statistics, the world is experiencing 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 to reduce unscheduled water consumption is no longer possible, since in this case the production process for the production of material goods would have to be drastically reduced and many of the benefits of civilization would have to be abandoned. Contamination factors also affect the fresh water shortage, because the volume of water suitable for consumption is reduced. Therefore, more attention should be paid to maintaining clean water. In this regard, we can note that the life and health of all the inhabitants of planet Earth depend on its quality.

Analysis of the study of problems associated with the lack of drinking water shows that over a long historical period in regions with natural reserves of fresh water, a person fully satisfied his water needs without feeling a lack of water. However, due to the intensive population growth 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 areas, an acute problem of the lack of drinking water has arisen. There is another problem: pollution by effluents and industrial emissions, the washing away of fertilizers from the fields and the penetration of salt water in coastal zones into aquifers due to the pumping of groundwater. This also significantly reduces the supply of drinking water. There is evidence that 1.5 billion people on the globe do not have access to clean water.

Lack of drinking water can have consequences for the health of the population in a variety of ways: from the deterioration of living conditions and the development of diseases to dehydration and death. Contaminated water may



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contain pathogens that cause the most 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 guarantee the avoidance of dangerous pathogens entering the body.

V. CONCLUSION AND FUTURE WORK

The process of reducing water consumption is no longer possible, since for this it will be necessary to reduce the production of material assets and abandon many of the 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 clean water. There is an opinion that the supply of water is inexhaustible. In the end, the world's oceans occupy 71% of the Earth's surface and contain the largest share of the planet's water reserves. 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 resolved on its own, and the issue will be removed from the agenda. However, fresh water is, and will remain over the next few centuries, one of the most important resources worldwide.

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

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