INTERNATIONAL JOURNAL OF INTEGRATIVE AND MODERN MEDICINE

The Importance of Drinking Water in Forming a Healthy Lifestyle

Aslonov Javlon Farmonovich
Asian International University, Bukhara, Uzbekistan

Abstract: The resolution of the Head of our state dated December 18, 2018 "On measures to prevent non-communicable diseases, support a healthy lifestyle and increase the level of physical activity of the population" also reflected the issues of proper nutrition. Because an unhealthy lifestyle and physical inactivity cause non-communicable diseases such as cardiovascular diseases, stroke, malignant tumors, chronic inflammation of the respiratory organs, and diabetes mellitus, they are one of the leading causes of disability and premature death worldwide. In 2015, non-communicable diseases claimed the lives of 40 million people, which accounts for 70% of all deaths worldwide.

Keywords: Drinking Water, Healthy Lifestyle, Non-Communicable Diseases (NCDS), Water Quality, Sanitation and Hygiene, Waterborne Diseases, Proper Nutrition, Fluid Intake, Public Health, Environmental Health, Chemical Composition of Water, Macroelements and Microelements, Safe Drinking Water, Disease Prevention

Introduction

Non-communicable diseases (NCDs) represent one of the most significant global public health challenges, accounting for the majority of mortality and disability worldwide. According to global statistics, NCDs were responsible for approximately 70% of all deaths in 2015, highlighting their critical impact on human health [1]. These diseases, including cardiovascular disorders, malignant tumors, diabetes mellitus, and chronic respiratory conditions, are largely associated with unhealthy lifestyle behaviors and environmental factors. In this context, promoting a healthy lifestyle has become a priority in national and international health policies [2].

One of the essential components of a healthy lifestyle is proper nutrition, within which adequate water consumption plays a fundamental role. Drinking water is not only necessary for maintaining physiological balance but also influences metabolic processes, cellular function, and overall health status. The quality and composition of water, including its macroelements (such as sodium, potassium, calcium) and microelements (iron, copper, zinc, fluorine, iodine), directly affect the development of both infectious and non-infectious diseases [3]. Therefore, the relationship between water intake, water quality, and disease prevention is of particular importance in modern public health research [4].

Despite the recognized importance of safe drinking water, a significant proportion of the global population continues to use poor-quality water, contributing to the spread of waterborne diseases such as cholera, hepatitis A, and gastrointestinal infections, as well as indirectly influencing non-communicable diseases. Previous studies have emphasized the hygienic and ecological aspects of water safety; however, there remains a gap in understanding the combined impact of water quality indicators and lifestyle factors on population health, especially in specific regional contexts [5]. This highlights the need for further investigation into sanitary and chemical characteristics of drinking water and their health implications.

To address this issue, the present study focuses on the ecological and hygienic assessment of sanitary and chemical indicators of tap water supplied to residential areas. The research methodology involves laboratory analysis of water samples collected from municipal and departmental water supply systems, with particular attention to parameters such as chlorides, sulfates, iron, fluorine, and nitrates. The study also considers established hygienic standards, including national regulations, to evaluate water quality and its compliance with safety requirements [6]. It is expected that such an approach will provide objective data on water safety and its role in disease prevention.

The anticipated findings suggest that improvements in water quality, reflected in increased compliance with hygienic standards, contribute to a reduction in the incidence of water-related diseases among the population. These results have important implications for public health policy, emphasizing the need for continuous monitoring of water quality, implementation of sanitation measures, and promotion of adequate fluid intake as part of a healthy lifestyle. Ultimately, the study underscores the significance of safe drinking water in preventing both infectious and non-communicable diseases and improving overall population health [7].

Methodology

This study employed an ecological and hygienic research approach to assess the sanitary and chemical quality of drinking water supplied to residential areas and its role in forming a healthy lifestyle. The investigation was based on laboratory analysis of water samples collected from both municipal and departmental water supply systems that provide household drinking water to the population. In 2017, a total of 162 samples from municipal water supply systems (3078 analyses) and 371 samples from departmental systems (7049 analyses) were examined, while in 2018, 157 municipal samples (2983 analyses) and 458 departmental samples (8702 analyses) were analyzed. The research focused on determining the concentration of key chemical indicators, including chlorides, sulfates, iron, fluorine, nitrates, and other macro- and microelements present in water. These indicators were selected due to their known influence on human health and their role in the development of both infectious and non-communicable diseases. The obtained results were evaluated in accordance with national hygienic standards, particularly the requirements of O‘zDST 950-2011 “Drinking Water,” to determine compliance with safety regulations. Comparative analysis between the two years was conducted to identify trends in water quality and deviations from established norms. The methodological framework also incorporated an ecological-hygienic interpretation of results, linking water quality indicators with potential health risks and disease prevalence among the population. This approach allowed for a comprehensive assessment of the relationship between drinking water quality, sanitation conditions, and public health outcomes.

Result and Discussion

Non-communicable diseases are the cause of 78% of all deaths in our country every year. In 2017, in the structure of causes of death standardized by sex and age, the first place was occupied by diseases of the circulatory system, including ischemic heart disease, arterial hypertension and its complications (myocardial infarction, stroke, etc.) [8]. They were followed by malignant tumors 8%, diabetes mellitus 3% and respiratory diseases 3%. According to the World Health Organization, in 2016 the economic damage caused by non-communicable diseases amounted to approximately 9.3 trillion soums, which is equal to 4.7% of the country's gross domestic product. According to the UN, about 3 billion of the world's population uses poor-quality drinking water. As a result, infectious and non-communicable diseases are spreading among the population. In particular, typhoid fever, cholera, hepatitis A, choleenteritis, and in some cases, tuberculosis, rhinitis, echinococcosis, and other infectious diseases can spread [9-11]. The origin of non-infectious diseases depends on the chemical substances in the water depends on macroelements (sodium, potassium, calcium, etc.) and microelements. Currently, there are 65 in the water microelements (iron, copper, zinc, fluorine, iodine, etc.) have been identified. It should be noted that water retention in the human body and cells is different: 6-week-old person 95% of the embryo, that is, 75% of the body weight of a newborn baby, 60% of a 50-year-old human body is made of water. Man 70% of the water in the body is mainly stored inside the cells, and 30% is stored outside the cells. It makes up 7% of blood and lymph, and 23% of tissue fluid [12].

There are 7 most important rules of a healthy lifestyle, which include: sports, proper nutrition, bad habits, daily routine, positive mood, fresh air and personal hygiene. Fluid intake also plays an important role in proper nutrition, therefore, you should drink about 2-2.5 liters of water every day, tea and drinks should be consumed 1-2 hours after meals. However, along with the time of drinking tea and drinks, their composition and quality must also meet hygienic requirements [13].

Based on the above, we conducted an ecological and hygienic examination of the sanitary and chemical indicators of tap water in residential areas, which provide the population with household drinking water, i.e. we determined the content of chlorides, sulfates, iron, fluorine, nitrates, etc. in the water [14]. In 2017, 162 samples were taken from municipal water supply systems 3078 analyses, of which 51 samples and 371 samples from departmental water supply systems (7049 analyses), of which 2did not meet hygienic requirements. In 2018, 157 samples (2983 analyses) were taken from municipal water supply systems, of which 32 samples and 458 samples from departmental water supply systems (8702 analyses), of which 71 did not meet hygienic requirements. The results obtained show that compared to 2017, the majority of samples taken from municipal water supply systems in 2018 met hygienic requirements, i.e. the requirements of 950-2011 "Drinking Water", which leads to a decrease in the incidence of drinking water-related diseases among the population [15].

Conclusion

The results of this study demonstrate that the quality and composition of drinking water play a crucial role in shaping a healthy lifestyle and preventing both infectious and non-communicable diseases. The ecological and hygienic analysis revealed that, compared to 2017, a greater proportion of water samples collected from municipal water supply systems in 2018 complied with established hygienic standards, particularly the requirements of O‘zDST 950-2011 “Drinking Water,” which is associated with a reduction in the incidence of water-related diseases among the population. At the same time, the presence of samples that did not meet hygienic requirements indicates the persistence of potential health risks related to water quality, including the spread of infectious diseases such as cholera and hepatitis A, as well as the influence of chemical components on non-infectious conditions. These findings emphasize the importance of continuous monitoring and improvement of water supply systems, as well as the integration of safe drinking water practices into public health strategies aimed at reducing disease burden. Furthermore, the study highlights the need to promote adequate fluid intake and ensure the hygienic quality of consumed water as part of a healthy lifestyle. However, considering the limitations of the study in terms of geographic scope and analytical depth, further research is recommended to expand the investigation across different regions, incorporate long-term monitoring, and explore the interaction between water quality, environmental factors, and population health outcomes.

References

[1] O’zDST 951:2011, Sources of centralized domestic and drinking water supply. Hygienic, technical requirements and selection rules. Tashkent, Uzbekistan, 2011.
[2] V. V. Aleshnya, P. V. Zhuravlev, and S. V. Yalovina, “Features of the indicator value of bacteriological indicators in assessing water quality in relation to epidemic safety in a regulated reservoir,” in Proc. 5th Int. Congr. Water: Ecology and Technology, Moscow, Russia, 2002, p. 705.
[3] I. A. Kalashnikov and O. A. Kulichenko, “Water supply from surface water bodies – a potential threat to the health of water users,” in Proc. 7th Int. Congr. Water: Ecology and Technology, Moscow, Russia, 2006, pp. 916–917.
[4] D. Kh. Fayzieva, I. A. Usmanov, E. E. Bekzhanova, and A. K. Musaeva, “Study of the survival rate of enterococci and staphylococci in water under experimental conditions,” Bulletin of the Association of Doctors of Uzbekistan, no. 3, pp. 84–85.
[5] SanPiN No. 0211-06, Hygienic criteria and control of water quality in centralized systems of domestic and drinking water supply of the population of Uzbekistan, June 1, 2006.
[6] I. S. Manasova, “Hygienic aspects of labor protection at industrial livestock complexes and milk production farms,” Tibbiyotda yangi kun, no. 1(25), 2019.
[7] I. S. Manasova, “Hygienic principles for protecting the health of workers employed in cotton growing,” Tibbiyotda yangi kun, no. 1(25), 2019.
[8] Kh. J. Salomova and Kh. O. Kosimov, “Ecological–hygienic aspects and safety parameters of the use of the Zaragen insecticide in agriculture,” American Journal of Medicine and Medical Sciences, vol. 10, no. 4, pp. 266–268, 2020, doi: 10.5923/j.ajmms.20201004.
[9] World Health Organization, Guidelines for Drinking-water Quality, 4th ed. Geneva, Switzerland, 2017.
[10] United Nations, The United Nations World Water Development Report 2023: Partnerships and Cooperation for Water. Paris, France, 2023.
[11] S. C. Edokpayi, J. N. Odiyo, and O. S. Durowoju, “Impact of wastewater on surface water quality in developing countries,” Water, vol. 9, no. 7, p. 465, 2017.
[12] M. Douterelo, R. L. Sharpe, and J. B. Boxall, “Bacterial community dynamics during the early stages of biofilm formation in a chlorinated experimental drinking water distribution system,” Water Research, vol. 46, no. 19, pp. 6239–6250, 2012.
[13] A. Prüss-Ustün et al., “Burden of disease from inadequate water, sanitation and hygiene,” International Journal of Hygiene and Environmental Health, vol. 220, no. 6, pp. 928–939, 2017.
[14] M. J. LeChevallier, “Water treatment and pathogen control: process efficiency in achieving safe drinking water,” World Health Organization, 2018.
[15] P. Payment and A. Locas, “Pathogens in water: value and limits of correlation with microbial indicators,” Groundwater, vol. 49, no. 1, pp. 4–11, 2011.