

WATER POLLUTION AND THEIR EFFECTS ON HUMAN HEALTH

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ABSTRACT

The information that was gathered and compiled on the connection between water pollution and human health was attained by an exhaustive review of a number of research papers that were published in journals that are held in high regard on a global scale, in addition to books that were related to the subject matter. It is estimated that water covers around 70 percent of the planet's surface. Drinking water that is free of impurities is an essential need for all forms of life, including humans. The World Health Organization (WHO) reports that water is responsible for the transmission of eighty percent of all illnesses. Industrialization, the discharge of domestic rubbish, radioactive waste, and population growth, excessive use of pesticides and fertilizers, and leakage from water storage tanks are some of the most major causes to water pollution. These wastes have the potential to have a detrimental effect on the health of humans. The effects that chemicals have may be affected not only by the types of chemicals but also by the surroundings in which those chemicals are present. Several infectious diseases, including cholera, typhoid fever, encephalitis, poliomyelitis, hepatitis, skin infections, and gastrointestinal disorders, are being passed about by ingesting contaminated water. Infectious agents such as bacteria, viruses, and parasites are to blame for these diseases. It is highly recommended that the quality of the water be checked on a regular basis in order to reduce the risk that it will have a negative impact on human health. It is unacceptable to dispose of waste from private residences and farms without first treating the waste.

Keywords: *Water Pollution, Human Health*

INTRODUCTION

The introduction of substances that aren't wanted into water may lead to water pollution, which is characterized by a decline in water quality and poses risks to both the health of humans and the health of the environment. Consumption is only one of the many ways in which our society makes use of water, which is a precious natural resource that is put to use in the pursuit of many forms of progress. The availability of water that is fit for human consumption is essential for maintaining human health in every part of the world. One of the most important factors in the development of disease is water's property of acting as a universal solvent. According to the World Health Organization (WHO), water is responsible for the transmission of eighty percent of all diseases. In many countries, the drinking water does not meet WHO standards. 3.1% of all deaths may be traced back to unclean environments and poor product quality the discharge of pollutants from residential and industrial effluent systems, leakage from water tanks, dumping of radioactive waste in marine settings, and deposition from the atmosphere are the chief causes to water pollution. Other factors include.

Heavy metals that have been discarded as well as rubbish from companies have the potential to accumulate in water bodies such as lakes and rivers, which may be hazardous to the health of both humans and animals. Toxins that are present in industrial waste are the major cause of compromised immune systems, problems

with reproduction, and acute poisoning. Environments that are polluted are a significant factor in the propagation of infectious diseases such as cholera and typhoid fever, in addition to other diseases that may cause gastroenteritis, vomiting, diarrhea, skin issues, and kidney difficulties. It is possible that the direct damage done to the nutrition of plants and animals will have an adverse effect on human health. As a consequence of the presence of toxins in the water, a number of seaweeds, mollusks, marine birds, fishes, and crabs as well as other marine species that supply food for people are becoming extinct. There has been a rise in the concentration of pesticides, such as DDT, all the way up the food chain. It is important for people to stay away from these chemicals and not come into touch with them.

Right To Access to Clean Water

The use of potable water is fundamental to the survival of human beings. It is one of the fundamental components that is required in order for human beings to maintain their existence. Water is important for many different things that we do in our day-to-day lives. Consumption is only one of many possible uses for this versatile substance; additional applications include washing, cleaning, irrigation, and bathing. There are a variety of basic water sources, including lakes, rivers, oceans, ponds, and groundwater, from which one may get water for drinking or for use in other contexts.

The state is responsible for delivering water to the local population as well. One of the most essential rights that humans are afforded is the right to consume unadulterated water. In a vote that took place on July 28, 2010, the United Nations General Assembly decided that having access to clean water and sanitation should be recognized as basic human rights. The Bolivian Representative to the United Nations, Mr. Pablo Solon, said that "Drinking water and sanitation are not simply parts or fundamental components of other rights such as "the right to an adequate quality of life." This was made when Mr. Solon was delivering the Resolution to the United Nations. The right to drink clean water and the right to appropriate sanitation are two different rights that should each be recognized for what they are: unique and distinct rights.³ The Indian government acts as the trustee for all natural resources that are meant for public use and enjoyment derived from nature. Water is regarded to be one of these natural resources, and the Indian government serves in this capacity.

OBJECTIVES

1. The study Water Pollution and Their Effects on Human Health.
2. The study These wastes have negative effects on human health. Different chemicals have different.

Cause And Effects of Water Pollution

When we talk about water being contaminated, we are referring to the fact that its natural quality has been changed to the point that it is no longer fit for human consumption because of the risks involved. There are several circumstances in which the concept of "water pollution" might be interpreted. It is usually an indication that one or more contaminants have collected in the water to such a degree that they are detrimental to the health of animals or people. In certain situations, it may signify that the water itself is polluted. The word "pollutant" may be used to refer to a wide range of different entities, such as chemicals, illnesses, or changes in the physical chemistry or sensory experiences. A significant proportion of the chemical substances in question are carcinogenic. Pathogens might be the underlying cause of diseases that are transmitted via the water. Alterations are possible to a variety of characteristics of the water's physical chemistry, including its

temperature, electrical conductivity, acidity, and eutrophication levels. One of the most devastating effects of dirty water is that it may facilitate the transmission of infectious diseases to people.

The metropolitan areas of India are responsible for the yearly production of around 50,000,000,000 liters' worth of wastewater, which comprises waste from both industrial and domestic sources. The overall tally is going to be quite a bit higher when it is taken into account that the data from rural areas must also be included. According to a study that was published by the United Nations on March 22, 2010, World Water Day, eighty percent of urban garbage in India ends up in the rivers of the nation. Furthermore, unrestrained urban expansion throughout the country combined with weak government monitoring means that the situation is only getting worse.

World Water Day was celebrated on March 22, 2010. The 22nd of March is observed globally as World Water Day every year. A growing number of bodies of water in India are unfit for human use as a direct consequence of uncontrolled pollution, and the River Ganga, which is regarded holy by the country's 82 percent Hindu majority, is degrading at an alarming pace. In addition, the number of bodies of water in India that are unfit for human use is expanding. The pollution of water supplies presents India with a significant obstacle to overcome. About ten percent of the waste water that is produced is treated, while the other ninety percent is simply discharged into our water bodies in its untreated form. As a consequence of this, toxins get up in the groundwater, rivers, and other bodies of water.¹⁸ The human body is very susceptible to the negative consequences that might arise from ingesting polluted water. In order to identify the factors that lead to water pollution, one category that may be utilized is referred to as direct causes, while another group may be referred to as indirect causes.

Major sources of water pollution

- i. Domestic sewage
- ii. Industrialization
- iii. Population growth
- iv. Pesticides and fertilizers
- v. Plastics and polythene bags
- vi. Urbanization
- vii. Weak management system

It is believed that sewage from homes is responsible for between 75 and 80 percent of the pollution of water around the globe. Water contamination is caused in part by waste products produced in industries such as sugar production, textile manufacture, electroplating, pesticide manufacturing, and paper and pulp manufacturing. A polluted river smells terrible and has a less variety of plant and animal life than a river that has not been polluted. The water supply for eighty percent of the world's population is at risk due to various contaminants. In spite of the fact that it is disposed of in significant amounts, the most majority of the domestic sewage that is discharged into the river has not been subjected to any kind of treatment. Domestic sewage

contains potentially harmful compounds, solid waste, plastic litters, and bacterial contaminants; the presence of these hazardous materials adds to the contamination of water sources. The dumping of a variety of different forms of industrial waste directly into rivers without first subjecting the material to any sort of treatment is the most important cause of water pollution.

The discharge of hazardous compounds into the environment by industries is the primary contributor to pollution of both ground water and surface water. The quantities of pollutants are determined by the many sorts of industries that create them. The industrial sector is the biggest contributor to pollution, which is produced when toxic metals get into the water and reduce its quality by a factor of 25. This pollution is caused when poisonous metals enter into the water and creates contamination. The ever-increasing human population is the root of a wide range of issues, and it is also one of the primary contributors to the deterioration of the natural world in a number of negative ways. A rise in the number of people in a given area results in a corresponding rise in the quantity of waste generated. It is legal to dump rubbish into rivers, including both solid garbage and waste in liquid form. In addition to this, human waste has the potential to contaminate water systems. The water that has been polluted has a large number of germs, some of which are harmful to human health, and this water also contains a high concentration of bacteria. The government is unable to provide the basic needs of the citizens as the population continues to increase at an alarming rate. Sanitation facilities are more likely to be located in urban areas as opposed to more rural areas. Trash that is formed of polythene and plastic is a major factor that contributes to the degradation of the environment.

To begin the process of getting rid of the rubbish, it is first placed in plastic bags. It is estimated that one individual out of every three who lives in urban regions discharges themselves in public places. Pit latrines are used by 8% of the population, whereas flush latrines are used by 77% of the population. The urbanisation of a region is associated with an increased risk of contracting a variety of infectious diseases. Overcrowding, conditions that are not hygienic, and the use of contaminated water are the three factors that pose the biggest risks to the general population's health in urban settings. One-fourth of the people living in the metropolitan area are at risk of being exposed to Bacteria, insects, and other sorts of diseases may all be eliminated by the use of pesticides. The quality of the water is decreased as a direct result of the widespread use of pesticides and other chemical chemicals, which are important contributors to water pollution. If an insufficient amount of pesticides were managed, or if an excessive amount of pesticides were utilised, agriculture may be placed in peril. Only sixty percent of the soil has been fertilised, and the other forty percent has been fertilised with additional chemicals that have the potential to leach into the soil and poison the water. Polluted water is ideal for the growth of cyanobacteria, and excessive phosphate discharge is the root cause of eutrophication. Flooding, extreme rainfall, and excessive irrigation are all factors that lead to the mixing of chemical waste with river water, which then finds its way into the food chain. It is possible to find the presence of these compounds, which are harmful to living beings, in a broad range of foods, including fruits and vegetables. These chemicals are hazardous. Even the presence of trace amounts of medicines in public water sources may lead to dangerous levels of water pollution, which can have negative effects on human health.

Effects of water pollution on human health

There is a strong correlation between pollution and health issues in this day and age. Microorganisms that cause illness are referred to as pathogens, and these pathogens are directly responsible for the spread of disease among people. Some diseases are distributed all across the globe, whereas others are restricted to well-defined areas. There are several illnesses that are carried by water that are affecting man. Extreme weather, such as

heavy rainfall and flooding, is linked to the spread of several illnesses in both developed and poor countries. 10 percent of the population is reliant on fruits and vegetables that were produced using polluted water. The connection between faecal contamination of water sources and the fecal-oral mode of transmission of several aquatic infectious illnesses has been established.

There are a variety of disorders that are linked to the use of dirty water, including those that affect the respiratory system, the digestive system, the nervous system, and the cardiovascular system. Cancer and the blue baby syndrome are both caused by substances containing nitrogen. Because rural people don't have access to treated water and consume unprocessed water instead, the cancer mortality rate in rural regions is greater than in urban areas. This is because urban residents drink water that has been treated before consumption, whereas rural people drink water that has not been treated. People living in poverty have a higher chance of contracting diseases as a result of inadequate sanitation, hygiene, and water. Those pregnant women who are exposed to chemicals throughout their pregnancies are more likely to have babies with low birth weights, which has a detrimental impact on the health of the foetus. Contaminated water has a wide range of adverse impacts. The destruction of agricultural production and the infection of our food, which is harmful for both aquatic life and human beings, is caused by water of poor quality. Pollutants have a negative impact on the food chain, and heavy metals, particularly iron, have an adverse effect on the respiratory systems of fish. The consumption of fish that have had their gills clogged with iron, which kills the fish, may result in serious health problems for humans. These problems include hair loss, liver cirrhosis, renal failure, and brain dysfunction.

Bacterial diseases

The most common reason for diarrhoea is use of untreated drinking water or contamination of water by faeces. *Campylobacter jejuni* was the cause of 4% to 15% of diarrhoea cases globally. The most prominent symptoms of diarrhoea are a fever, stomach discomfort, nausea, and headache. This illness is preventable by using proper hygiene practises as well as antibiotics when necessary. The cholera disease is brought on by water that is tainted with bacteria. This illness is caused by the bacterium known as *Vibrio Cholerae*. Toxins may be produced by this bacteria that lives in digestive systems. The symptoms of this condition include nausea, vomiting, and diarrhoea that is watery. Watery diarrhoea may lead to dehydration as well as failure of the kidneys. Treatment with anti-microbial agents is used in order to eradicate this illness. The *Shigella* bacteria are the culprits behind the bacterial illness known as shigellosis. It causes damage to the lining of the intestinal system and affects the digestive tract of people. Diarrhoea that is either watery or bloody, cramping in the stomach region, vomiting, and nausea are all symptoms, and the condition may be healed with antibiotics and by practising proper hygiene. Salmonellosis is an infection that affects the digestive system. *Salmonella* bacteria are discovered in water that has been tainted, and drinking this water may cause inflammation of the bowel, which can lead to death. Antibiotics are often recommended for treatment of this illness.

Viral diseases

Hepatitis is a viral illness that is acquired by drinking water that has been tainted, and it affects the liver. Hepatitis may cause a number of symptoms, including jaundice, lack of appetite, weariness, pain, and high fever. If it lasts for an extended period of time, it might become lethal and lead to the individual's death. There is a vaccine available for hepatitis, and those who follow proper hygiene may eliminate their risk of contracting the disease. Inflammatory encephalitis is transmitted from person to person by the bite of an

infected mosquito. The Culex mosquito is responsible for spreading disease by laying its eggs in stagnant water. Headache, high temperature, muscular stiffness, and convulsions are some of the symptoms, however the majority of patients don't display any symptoms at all. However, in extreme instances, coma and paralysis follow. There is currently no vaccination available for this. Poliomyelitis is an illness that is caused by the poliomyelitis virus. Symptoms of poliomyelitis include a painful throat, fever, nausea, alternating periods of constipation and diarrhoea, and sometimes paralysis. There is now a vaccine for this condition. There are a number of viruses that may be responsible for gastroenteritis, including rotaviruses, adenoviruses, calciviruses, and the Norwalk virus. The symptoms of gastroenteritis include nausea and vomiting, along with a temperature and headache. After being infected, symptoms often develop one to two days later. Illness poses a significant threat to the health of newborns, young children, and people with disabilities.

Parasitic diseases

The parasite known as cryptosporidium parvum is the causative agent of the condition known as cryptosporidiosis. This condition affects people all around the globe, and its symptoms include loose or watery stools, stomach pains, and upset stomach. In addition to having an effect on the immune system and being resistant to disinfection, cryptosporidium is responsible for gastrointestinal illness in humans, including nausea, vomiting, and diarrhoea. The Entamoeba histolytica parasite is responsible for galloping amoeba, which is a condition that damages the lining of the stomach. There is a cyst form and a non-cyst form that this parasite may take. When a cyst that has been identified in polluted water is ingested, it might cause an infection. The symptoms include a fever, chills, and a runny nose. According to the World Health Organisation, there are around 4 billion instances of diarrhoea each year, which leads in 2.2 million deaths. Giardia lamblia is the organism that is responsible for giardiasis. It is possible for cells that line the digestive tract to get injured. Giardia may withstand cold temperatures and disinfectants without succumbing. It is often referred to as the "traveler's disease." People who have giardiasis often have symptoms such as bloating, diarrhoea that is watery, excessive gas, and weight loss.

CONCLUSION

Pollution of water is a worldwide problem, and communities all over the globe are now dealing with its worst effects. The discharge of pollutants from home and agricultural activities, population increase, excessive use of pesticides and fertilisers, and urbanisation are among the most significant contributors to water pollution. Diseases caused by bacteria, viruses, and parasites are contagious and spreading via dirty water, which is having an adverse effect on human health. It is strongly suggested that there should be an adequate trash disposal infrastructure, and that garbage should be processed before it is allowed to enter rivers. In order to curb the effects of the pollution, educational and awareness-raising initiatives need to be implemented. According to the findings of this research, the right to obtain clean water is not expressly guaranteed in either the Constitution of India or in any of the Acts that have been passed since then. The provision of clean water, as well as the prevention and management of water contamination, are duties placed on the state. According to the findings of the current research, water pollution is a significant problem in India. The authority granted to the Supreme Court by Article 32 is not only injunctive in ambit, meaning that it prevents the infringement of fundamental rights, but it is also remedial in scope, meaning that it gives remedy against a violation of fundamental rights that has already been committed. In other words, the power protects fundamental rights both before and after they have been violated. The findings of this article reveal that the treatment facilities for waste water in India are inadequate.

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