

# WATER POLLUTION, HUMAN HEALTH AND PREVENTIVE MEASURES

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**Abstract** – The information concerning pollution and human health was obtained and compile through a review of assorted printed analysis articles of international acknowledged journal and relevant books. Water covers concerning seventieth Earth's surface. Safe drink could be a basic want for all humans. The United Nations agency reports that eightieth diseases area unit waterborne. Manufacture, discharge of domestic waste, radioactive material, and increase, excessive use of pesticides, fertilizers and escape from water tanks area unit major sources of pollution. These wastes have negative effects on human health. Totally different chemicals have dissimilar have an effect on reckoning on their locations and sorts. Bacterial, infectious agent diseases like infectious disease, cholera, hepatitis, skin infection area unit spread throughout impure water. It's urged to examine the water quality on regular basis to evade its negative effects on human health. Unit and crop growing waste mustn't be disposed with no treat.

**Key Words:** Pollution, Sources of pollution, Dangerous Chemicals, Disease, Prevention.

## 1. INTRODUCTION

Water pollution happens once unwanted materials enter in to water, changes the standard of water and dangerous to surroundings and human health.[3] Water is a crucial resource used for drinking and alternative organic process functions in our lives.[4] Safe drink is critical for human health everywhere the planet. Being a solvent, water may be a major supply of infection. consistent with world health organization (WHO) eightieth diseases area unit water borne. 3.1% deaths occur thanks to the unsanitary and poor quality of water. [1]

Discharge of domestic and industrial effluent wastes, outflow from water tanks, marine selling, radioactive material and part deposition area unit major causes of pollution.[5] serious metals that disposed off and industrial waste will collect in lakes and watercourse, proving dangerous to humans and animals.[6]

Communicable diseases, like infectious disease, typhoid and alternative diseases gastro, vomiting, skin and urinary organ drawback area unit spreading through impure water. Human health is stricken by the direct deface of plants and animal nutrition. [7]

Water pollutants area unit Killing Ocean weeds, marine birds, fishes, and alternative ocean organisms that function food for human. These pesticides area unit dangerous for humans. [2]

## 1.1 Main Sources of Water Pollution

1. Domestic sewerage
2. Industrialization
3. Inhabitants development
4. Pesticides and fertilizers
5. Urbanization
6. Weak managing system

It is rumoured that seventy five to eightieth pollution is caused by the domestic sewerage. Waste from the industries like, sugar, textile, and electroplating, pesticides, pulp and paper square measure polluting the water. [11] Contaminated stream have unendurable smell and contains less flora and fauna. Eightieth of the world's population is facing threats to water security.

Large amount of domestic sewerage is drained in to stream and most of the sewerage is untreated. Domestic sewerage contains toxicants, solid waste, plastic litters and microorganism contaminants and these harmful materials causes pollution. Totally different industrial effluent that's drained in to stream while not treatment is that the major reason for pollution. [12] Hazardous material discharged from the industries is in command of surface water and spring water contamination. Contamination depends upon the character of industries. Harmful metals enter in to water and reduced the standard of water. Twenty fifth pollution is caused by the industries and is additional dangerous.

Increasing population is making several problems however it additionally plays negative role in polluting the water. Increasing population ends up in increase in solid waste generation. Solid and liquid waste is discharged in to rivers. Water is additionally contaminated by human body waste. In contaminated water, an oversized variety of microorganisms also are found that is dangerous for human health.

## 1.2 Effect of Water Pollution on Human Health

There is a bigger association between pollution and pathological state. illness inflicting microorganisms area unit called pathogens and these pathogens area unit spreading illness directly among humans. Some pathogens area unit worldwide some area unit found in well-defined space. [13] several water borne diseases area unit spreading man to man. significant downfall and floods area unit associated with extreme weather and making completely different diseases for developed and developing countries. 100% of the population depends on food and vegetables that area unit fully grown in contaminated water. [10] several waterborne communicable diseases area unit joined with faecal pollution of water sources and ends up in faecal-oral route of infection. Health risk related to contaminated water includes completely different diseases like disease, cancer, diarrhoeal illness, neurological disease and disorder. chemical element chemicals area unit in charge of cancer and infant syndrome. death rate because of cancer is higher in rural areas than urban areas as a result of urban inhabitants use treated water for drinking whereas rural individuals don't have facility of treated water and use unprocessed water.[14] Poor individuals area unit at bigger risk of illness because of improper sanitation, hygiene and facility. Contaminated water has massive negative effects in those ladies UN agency area unit exposed to chemicals throughout pregnancy; it ends up in the raised rate of low birth weight as a result vertebrate health is affected. [15]

Poor quality water destroys the crop production and infects our food that is venturesome for aquatic life and human life. Pollutants disturb the organic phenomenon and significant metals, particularly iron affects the system respiratory of fishes. [8] associate degree iron clog in to fish gills and it's fatal to fishes, once these fishes area unit devoured by human ends up in the most important health issue. Metal contaminated water ends up in hair loss, liver cirrhosis of the liver, nephrosis and neural disorder. [9]

## 1.3 Bacterial Diseases

Unprocessed potable and unclean contamination of water is that the major reason behind symptom. Fever, abdominal pain, nausea, headache area unit major symptoms of symptom. sensible hygienically practices and use of antibiotics will forestall this sickness. sickness Indian cholera is caused by the contaminated water. vibriion {cholera|Asiatic cholera|Indian cholera|epidemic cholera|infectious sickness} is in control of this disease. This bacteria produces toxins in biological process tracts. The symptoms of this sickness area unit watery symptom, nausea, disgorgement and watery symptom ends up in dehydration and renal disorder. Anti-microbial treatment is employed to urge obviate this sickness. [8]

Shigellosis could be a microorganism sickness caused by microorganism bacteria. It affects the digestive tube of

humans and damages the viscus lining. Watery or bloody symptom, abdominal cramps, disgorgement and nausea area unit symptoms and it will be cured with antibiotics and sensible hygienically observe. gastrointestinal disorder infects the viscus tract. Microorganism bacteria area unit found in contaminated water and it ends up in inflammation of gut and infrequently death happens. Antibiotics area unit prescribed for this sickness. [9]

## 1.4 Viral Diseases

Unprocessed drinkable and soiled contamination of water is that the major reason for diarrhoea. Fever, abdominal pain, nausea, headache area unit major symptoms of diarrhoea. sensible hygienically practices and use of antibiotics will stop this unwellness. unwellness Asiatic cholera is caused by the contaminated water. true bacteria {cholera|Asiatic cholera|Indian cholera|epidemic cholera|infectious unwellness} is answerable for this disease. This microorganism produces toxins in organic process tracts. The symptoms of this unwellness area unit watery diarrhoea, nausea, physiological reaction and watery diarrhoea ends up in dehydration and kidney disease. Anti-microbial treatment is employed to induce eliminate this unwellness. [8]

Shigellosis could be a microorganism unwellness caused by microorganism bacteria. It affects the canal of humans and damages the internal organ lining. Watery or bloody diarrhoea, abdominal cramps, physiological reaction and nausea area unit symptoms and it are often cured with antibiotics and sensible hygienically follow. gastrointestinal disorder infects the internal organ tract bacteria area unit found in contaminated water and it ends up in inflammation of viscus and infrequently death happens. Antibiotics area unit prescribed for this unwellness. [9]

## 1.5 Preventing Water-Borne Diseases

Clean water could be a requirement for reducing the unfold of water-borne diseases. it's well recognized that the prevalence of water-borne diseases is also greatly reduced by providing folks with safe, sanitary disposal of ordure and provision of fresh water. Water is disinfected to kill any pathogens which may be gift within the installation and to forestall them from growing once more in distribution systems. [14]

Disinfection is then utilized in order to forestall the expansion of unhealthful organisms and to safeguard people's health. folks would like clean water and installation systems. while not medical care, the chance of water-borne unwellness will increase. the two most typical strategies of killing microorganisms within the installation ar irradiation with ultra-violet radiation, or oxidation chemically like blanching agent or gas, or chemical element. [15]

## 1.6 Ways to Avoid Waterborne Diseases

In order to forestall communicable water borne diseases, it's necessary to require necessary precautions. The standard of water ought to be improved at the supply itself. In sure areas, the standard of water system can be of question. In such cases, it's essential to clean the water before use. Water that's used for all functions like drinking, cooking, and brushing of teeth ought to be germ-free properly. [1] The overall domestic ways in which to avoid water borne diseases by medical aid include:

Enthusiastically boiling water for one minute will kill most microorganisms.

Common domestic things like atomic number 17 bleach, tincture of iodine, and iodine tablets will be accustomed clean water.

Another necessary live that ought to be taken to avoid the spreading of pathological microbes is that the disturbance of route of transmission like defensive food from flies, chlorination of water, and maintaining correct cleanliness, etc. it's crucial to vary guarantee correct sanitation so as to remain aloof from waterborne diseases. [2]

- Drink solely filtered/bottled water.
- Wash hands properly before consumption.
- Wash the containers daily.
- Eat parched, warm foods.
- Keep your fingernails short and clean.
- Use of correct bogs for elimination.
- Wash food before cookery and cook food at high temperature thus on kill dangerous bacterium.
- Avoid flies by disposing animal and organic wastes properly.
- Ensure to require correct care in putting off kid and tike faces.
- Avoid overwhelming foods, fruit juices, and milkshakes from wayside vendors.
- Always keep foods and beverages closed.
- Avoid drinkable at parks and alternative such leisure places. It's best to shop for drinking water or carry your own water.
- Another common place wherever one will place oneself in danger of constricting water borne

sicknesses is hospitals as they will be copy grounds of moribific organism.

- Always wash your hands and tub once visiting a hospital.
- Rivers and creeks will be sex grounds for microbes; avoid swimming in such waters.
- Washing hands is that the most vital technique of interference of waterborne diseases. One ought to wash hands before making ready food and before consumption.
- Ensure to drink solely drinking water. Guarantee for any sign of meddling.
- Avoid ice cubes as this square measure a main supply of infected water.
- Avoid consumption raw food.

## CONCLUSION AND RECOMMENDATIONS

Water pollution could be a world issue and world community is facing worst results of contaminated water. Major sources of pollution square measure discharge of domestic and agriculture wastes, growth, excessive use of pesticides and fertilizers and urbanization. Bacterial, infective agent and parasitic diseases square measure spreading through contaminated water and moving human health. it's counseled that there ought to be correct waste disposal system and waste ought to be treated before coming into in to stream. instructional and awareness programs ought to be organized to regulate the pollution.

## REFERENCES

- 1) Water Pollution: Causes, Treatments and Solutions by Dr. Luxmy Begum, P. Eng., 1st Edition, October 2015
- 2) Environmental Pollution and Human Health by V K Ahluwalia
- 3) Alrumman SA, El-kott AF, Kehsk MA. Water pollution: Source and treatment. American journal of Environmental Engineering. 2016; 6(3):88-98.
- 4) Briggs D. Environmental pollution and the global burden of disease. British medical bulletin. 2003; 68:1-24.
- 5) Pawari MJ, Gawande S. Ground water pollution & its consequence. International journal of engineering research and general science. 2015; 3(4):773-76.
- 6) Juneja T, Chauhdary A. Assessment of water quality and its result on the health of residents of

Jhunjhunu district, Rajasthan: A cross sectional study. *Journal of public health and epidemiology*. 2013; 5(4):186-91.

- 7) Khan MA, Ghouri AM. Environmental Pollution: Its effects on life and its remedies. *Journal of arts, science and commerce*. 2011; 2(2):276-85.
- 8) Salem HM, Eweida EA, Farag A. Impurities in drinking water and their environmental impact on human health. *ICEHM*. 2000:542-56.
- 9) Chowdhury S, Annabelle K, Klaus FZ. Contamination of drinking water and mental health. 2015:1-28.
- 10) Khurana I, Sen R. Drinking water quality in rural India: problems and approaches-Water Aid. *India water Portal*. 2008
- 11) P M: Prasad, "Environmental Protection: The Role of Regulatory System in India"
- 12) FW Pontius, "Water quality and treatment", New York: McGraw-Hill, Inc.
- 13) P. H. McGauhey, "Engineering Management of Water Quality," 1968.
- 14) H. Peavy, D. Rowe, and G. Tchobanoglous, "Environmental Engineering," 1986.
- 15) W. H. Organization "Hazardous chemicals in human and environmental health: a resource book for varsity, faculty and university students," 2000.