

“ENVIRONMENT AND HUMAN HEALTH”

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Abstract

Our mother earth is the most precious gift of the universe. It is the sustenance of “nature” that is a key to the development of the future of the mankind. It is the duty and responsibility of each one of us to protect nature. It is here that the understanding of the environment comes into the picture. The degradation of our environment is linked with the development process and the ignorance of people about retaining ecological balance. It is, therefore, essential that the study of the environment becomes an integral part of the education processes.

Key words: Environment and Human Health, Human Health

ENVIRONMENT AND HUMAN HEALTH

Environment – related issues that affect our health have been one of the most triggers in the increasing awareness of the need for better environmental management. The changes in our environment induced by human activities in nearly every sphere of life have had an influence on our health patterns. The assumption that the only indicator of human progress is economic growth is not true. We expect urbanization and industrialization to bring in prosperity, but on the downside, it leads to diseases related to overcrowding and poor quality drinking water resulting in an increase water borne diseases like infective diarrhea and air – borne bacterial diseases like tuberculosis. High – density city traffic leads to an increase in respiratory diseases like asthma. Agricultural pesticides that enhanced food supplies during the green revolution have affected both the farm worker and all of us who consume the produce. Modern medicine promised to solve many health problems, especially associated with infectious diseases through antibodies, but bacteria have found ways to

develop resistant strains, frequently even changing their behavior in the process, making it necessary to keep on creating newer antibodies. Many drugs have been found to have serious side effects. Some times, the cure is as damaging as disease process itself.

Thus, development has created several long – term health problems, while better health care has led to longer life – spans, coupled with lowered infant mortality. It has also led to an unprecedented growth in our population which has negative implications on environmental quality. A better health status of society will bring about a better way of life only if it is coupled with stabilizing population growth.

Environmental Health:

Environment health, as defined by WHO, comprises those aspects of human health, including the quality of life that are determined by physical chemical, biological, social and psychosocial factors in the environment. It also refers to the theory and practices of assessing, correcting, controlling and preventing those factors in the environment that adversely affect the health of present and future generations.

Our environment affects health in a variety of ways. Climate and water affect human health. Public health depends on sufficient amount of good quality food, safe drinking water, and adequate shelter. Natural disasters such as storms, hurricanes and floods still kill many people every year. Unprecedented rainfall triggers epidemics of malaria and water – borne diseases.

Global climate change has serious health implications. Many countries will have to adopt to uncertain climate conditions due to global warming. As our climate is changing, we may no longer know what to expect.

- i) Millions of people, mainly children, have poor health due to parasite infections, such as amoebiasis and worms. This occurs from eating infected food, or using poor quality water for cooking food. It is estimated that 36% of children in low – income countries 12% in middle income countries are malnourished. In India, about half the children under the age of four are malnourished and 30% of newborns are significantly under weight.

- ii) Hundreds of millions of people suffer serious respiratory diseases, including lung cancer and tuberculosis, from ill – ventilated homes and public places. Motor vehicle exhaust fumes, industrial fumes, tobacco smoke and cooking food on improper chulas, contribute respiratory diseases.
- iii) Millions of people are exposed to hazardous chemicals in their work place or homes that lead to poor health due to industrial products where controls are not adhered to.
- iv) Tens of thousands of people in the world die due to traffic accidents owing to inadequate management traffic conditions. Ineffective first aid at the accident site and the frequent inability to reach a hospital within an hour causes a large number of deaths, especially from head injuries.
- v) Basic environmental needs – such as clean water, clean air and adequate nutrition – which are related to environment goods and services do not reach over thousand million people living in abject poverty.
- vi) Population growth and the way resources are being exploited and wasted, threaten environment integrity and directly affects the health of every individual.
- vii) Health is an outcome of the interactions between people and their environment. Better health can only come from more sustainable environmental management.
- viii) Several million people live in inadequate shelters or have no roof over their heads especially in urban settings. This is related to high inequalities in the distribution of wealth and living space.

Important strategic Concerns:

- i) The world most addresses people's health care needs and the sustainable use of natural resources, which are closely linked to each other.
- ii) Strategies to provide clean potable water and nutrition to all people are an important part of a healthy living environment.
- iii) Providing clean energy sources that do not affect health is a key to reducing respiratory diseases.
- iv) Reducing the environmental consequences of industrial and other pollutants, such as transport emissions, can improve public health.

- v) The key factors are to control human population and consume less environmental goods and services which could led to “health for all”.

Climate and Health:

Centuries of human civilization have helped mankind to adapt to living in a wide variety of climates from the hot tropics to the cold arctic, in deserts, marsh land and in the high mountains. Both climate weather have a powerful impact on human life and health issues.

Natural disasters can severely affect the health of a community. Poor people are more vulnerable to the health impacts of climate variability than the rich of approximately 80,000 deaths which occur world – wide each year as a result of natural disasters, about 95% are in poor countries. In weather – triggered disasters hundreds of people and animals die, homes are destroyed, crops and other resources are lost. Public health infrastructure like sewage disposal systems, waste management,, hospitals and roads, are damaged. The cyclone in Orissa in 1999, caused 10,000 deaths. The total number of people affected was estimated at 10 to 15 million!

Human physiology can adapt to changes in weather within certain limits. However marked short – term fluctuations in weather lead to serious health issues. Health waves cause heat – related illness and death. The elderly and persons with existing heart or respiratory diseases are more vulnerable. The heat wave in India in 1998 was associated with many deaths.

Climate place an important role in vector – borne diseases transmitted by insects like mosquitoes. These diseases transmitters are sensitive to the direct effects of climate such as temperature, rainfall patterns and wind. Climate affects their distribution and abundance through its affects on hosts plants and animals.

Malaria transmission is particularly sensitive to weather and climate. Unusual weather conditions, for ex. a heavy downpour, can greatly increase the mosquitos population and trigger an epidemic. In the desert and at the high land fringes of malarial areas, malaria transmission is unstable and the human population lacks inherent protective immunity. Thus, when weather conditions (rain fall and temperature) favour transmission,

serious epidemics occur in such areas. The fluctuations in malaria over the years have also been linked to changes in rainfall associated with the EL Nino cycle.

Infectious Diseases:

Many infectious diseases have re – emerged with a vengeance the loss of effective control over diseases such as malaria and tuberculosis, have led to a return of these diseases decades after being kept under stringent control.

Other diseases, which were not known to science earlier, seem to have suddenly hit our health and lives during the last few decades. Two examples are Acute Immune – Depressive Syndrome (AIDS), due to the human Immunodeficiency virus (HIV) caused through sexual transmission and severe Acute Respiratory Syndrome (SARS). While these can not be directly related to environment change, they affect the environment in which we live by forcing a change in life styles and behavior patterns.

The newer broad – spectrum antibiotics, antiseptics, disinfectants, and vaccines once thought of as the complete answer to infectious diseases have thus failed to eradicate infection diseases. In fact, experts now feel that these diseases will be the greatest killers in the future and not diseases such as cancer or heart diseases.

While antibiotic resistant is a well known phenomenon there are other reasons for the re - emergence of diseases overcrowding due to the formations of slums in the urban setting leads to several health hazards including easier spread respiratory diseases. Inadequate drinking water quality, poor disposal of human waste due to the absence of a closed sewage system and poor garbage management are all urban health issues. This has led re appearances of diseases such as cholera and increased incidence of diarrhea and dysentery as well as infectious hepatitis (jaundice).

With increasing global warming diseases patterns will continue to change. Tropical diseases spread by vectors like mosquitoes will undoubtedly spread malaria further away from the equator. Global warming

will also change the distribution of dengue, yellow fever, encephalitis, etc. warmer wetter climates could serious epidemics of diseases such as cholera.

Globalization and Infectious Diseases:

Globalization is a world – wide process which includes the internationalization of communication, trade and economic organization. It involves parallel changes such as rapid social economic and political adjustments whilst globalization has the potential to enhance the lives and living standards of certain population groups, for the poor and marginalized populations in both the non - formal as well as formal economic sectors of developing countries, globalization enhance economic inequalities.

Tuberculosis kills approximately 2 million people each other. In India the diseases have re- emerged and are now more difficult to treat. In 1993, the WHO declared that TB had become a global emergency. It is estimated that between 2002 and 2020, approximately 1000 million people will be newly infected, over 150 million people will get sick, and 36 million will die of TB if its control is rapidly strengthened.

TB is a contagious diseases that is spread through the air. Only people who are seek with pulmonary TB are infectious. When infectious people cough, sneeze, talk or spit they emit the tubercle bacilli into the air. When a healthy person inhales these, s/he gets infected by the disease. The symptoms include prolonged fever, coughing, spells and weight loss.

It is estimated that, left untreated, each patient of active tuberculosis will infect, on an average between 10 - 15 people every year. But people infected with TB will not necessarily get sick with the diseases. The immune system can cause the TB bacilli, which is protected by a thick waxy coat, to remain dormant for years. When an individual's immune system is weakened, the changes of getting active TB are greater.

Water Related Diseases:

Water supply, sanitation and hygiene development: Among the main problems are a lack of priority given to this sector, lack of financial resources, erratic water supply and sanitation services, poor hygiene – related behavior patterns, and inadequate sanitation in public places such schools, hotels, hospitals, health centers etc.

One of the most important aspects is a lack of environmental education and awareness that these diseases process are related to poor environment management in various sectors.

Providing access to sufficient quantities of safe water, facilities for the sanitary disposal of excreta, and introducing sound hygiene – related behavior can reduce the morbidity and mortality caused by these risk factors.

Environmental sanitation and hygiene development: Globally, about 2, 4 billion people live under highly unsanitary conditions. Poor hygiene increases the exposure to risk of incidence and spread of infectious diseases. Water improperly stored in homes is frequently contaminated by inadequate management at the house hold level. This can be easily reduced through education and awareness about how water – borne diseases are transmitted.

Health and water resources development: An important aspect of water – related disease is the way water resource are developed and managed. In many parts of the world the adverse health impacts of dam construction, irrigation development and flood control is related to increased incidence of malaria, Japanese encephalitis, schistosomiasis, lymphatic filariasis, and other conditions. Other heal issues indirectly associated with water resources development include nutritional status, exposure to agriculture pesticides and their residues

There are four major types of water related diseases

- i) **Water – borne disease:** These are caused by dirty water contaminated by human and animal wastes especially from urban, or by chemical wastes from industry and agriculture. Some of the diseases, such as cholera and typhoid, cause serious epidemics, diarrhea, dysentery, polio, meningitis, and hepatitis A & E are caused due to improper drinking water. Excessive levels of Nitrates causes blood disorders when they pollute water sources. Pesticides entering drinking water in rural areas causes cancer, neurological diseases infertility. Improving sanitation and providing treated drinking water reduce the incidence of these diseases.

- ii) **Water – based diseases:** Aquatic organisms that live a part of their life cycle in water and another part as a parasite in man, lead to several diseases in India, guinea worm affects the feet, Round worms live in small intestine especially of children.
- iii) **Water related vector diseases:** Insects like mosquitoes that breed in stagnant water spread diseases such as malaria, and filariasis malaria, once effectively controlled in India has returned as the mosquitoes have become resistant to insecticides. In addition, anti-malaria drugs are now unable to kill the parasites as they have become resistant to drugs. Changes in climate are leading to the formation of new breeding sites. Other vector diseases in India include dengue fever and filariasis. Dengue fever carries a high mortality, filariasis leads to fever and chronic swelling of the legs.
- iv) **Water Scarcity Diseases:** In areas where water and sanitation is poor, there is a high incidence of diseases, such as tuberculosis, leprosy, tetanus etc. which occur when one's hands are not properly washed. In other words, the lack of water leads to poor hygiene.

Risks due to chemicals in food:

Food contaminated by chemicals is a important public health concern. This contamination may occur through environment pollution of the air, water and soil, toxic metals, PCBs and dioxins are the international use of various chemicals, such as pesticides, animal drugs and other agro chemicals have serious consequences on human health. Food additives and contaminants used during food manufacture and processing also adversely affect human health.

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