

Impact of Climate Change On Human Health: An Overview

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Abstract: All the life which we see on this planet is shaped by environment. Human health is also affected by environment. Human health is encouraged by peaceful environment whereas ill health, morbidity and general shortening of one's life span, mental anxieties are a result of stressful environment. Human health, energy, & comfort are affected more by climate rather by any other element of physical environment directly or indirectly. Physiology function of human body respond to changes in weather & certain diseases varies with climate and the season. This paper will throw some light on the effect of weather, sunshine and air pollution on human health and also cite few major diseases and their causes which arise due to climate change.

Keywords: Pollution, hyperthermia, diseases, weather, nutrition, climate, season, heat exhaustion.

INTRODUCTION

Human health, energy and comfort are affected more by climate rather than any other physical environment. Physiology function of the human body respond to change in weather, and the incidence of certain diseases vary with climate and the season. Our clothes and food selection also reflect weather and climate. The state of atmosphere even influences our mental and emotional outlook.

Different human beings do not react to identical climates in the same way; however, the relationship is complicated by individual physical difference, age, diet, past climatic experience and cultural influence. All individuals are not equally adaptable to varying atmospheric conditions of all life forms; nevertheless, humans are the most adaptable to varying conditions. Climate has been blamed for human failure more than the facts justify, especially, in the tropics, but it is unquestionable a factor in efficiency.

Among the climatic elements that affect the human body the more important are temperature, sunshine and humidity. Wind exerts an influence largely

through its effect on skin temperature and body moisture, the circulatory, respiratory, and nervous system register changes in atmospheric pressure. Such elements as cloudiness, visibility and storm induce psychological reactions that range from positive reinforcement to physiological disturbances. Acting together the climatic elements constitute the climatic environment that directly influences our comfort and well being.

DIRECT EFFECT OF UNHEALTHY ENVIRONMENT ON HUMAN HEALTH

The air we breathe contain dust, smoke, settleable particles and some amount of toxic gases. Contaminated water with little amount of salts of mercury. Foods with pesticides content enter human body and cause damage. Eyes may be affected by contaminants of air and water. Skin and eyes may be affected by radiations. There are two main routes of entry of environmental contaminants into the human system.

1. **Entry of contaminants through respiratory tract:** It enters in form of settleable particles or aerosols or toxic gases, fumes, and vapors which causes diseases like silicosis, asbestosis. Tuberculosis is one such disease which is quite frequent in dirty, dusty, and crowded cities in India.(Notari 1975,klassen 1986)
2. **Entry of contaminants through gastrointestinal tract:** It enters the body along with food and water which we take.

INDIRECT EFFECT OF UNHEALTHY ENVIRONMENT ON HUMAN HEALTH

1. **DUE TO GROWTH OF DISEASE CAUSING ORGANISM:** like microbes, bacteria, algae, fungi, protozoan, helminthes, annelids, larval stage of various insects, pests etc which are generated from organic waste, sewage effluents, excreta, exudates & faecal matter. These cause diseases of man, animals and plants. Typhoid caused by salmonella typhii and cholera caused by vibrio cholerea spread through contaminated water. Violent air current may

contain virus and bacterial aerosols while a number of resistant spores or cyst survive in dried sewages. Wind blows them as dust. With air current diseases causing organism are carried to distant places. (Camp & Meserve 1974, Lenihan & Fletcher 1976, Swayer 1966)

2. **DUE TO GROWTH OF DISEASE CAUSING VECTORS:** biodegradable waste causes growth mosquitoes, houseflies, and rodents etc which enter in human body through saliva when insects bite. Malarial parasite is transferred by bite of female mosquito anopheles. Mosquito of genus aedes transmit virus causing dengue fever, yellow fever. (Camp and Meserve 1974, Lenihan & Fletcher 1976, Voznaya 1981)
3. **DUE TO DEPLETION OF NATURAL RESOURCES:** it reduce productivity of agriculture, animal husbandry, fisheries etc causing shortage and result in competition, conflicts, malnutrition, ill health and starvation. The adjustment, which we shall have to make in our lives, habits health care & the agricultural practices, shall be enormous, affecting our well being and health drastically. (Clapham 1981, Duffus 1980, Miller 2002, Silver & De Fries 1991).

EFFECT OF WEATHER ON HUMAN HEALTH

Hyperthermia – Extreme temperature causes heat stroke or hyperthermia when body is unable to maintain its high relative humidity and air temperature above the body, it may lead to death.

If deep temperature rises above the critical level of 42 degree Celsius. Symptoms: fever, nausea, dizziness, headache. Treatment: reducing body temperature by means of cold bath.

Heat exhaustion is milder form of hyperthermia identified by dizziness, lassitude and perhaps fainting.

Heat cramps- when body suffers an excessive loss of salts and water in perspiration. Adequate liquid and salt intake prevents heat cramp. Due to change in metabolism and blood circulation, the appetite and digestion are impaired in hot weather.

Frostbite: a common direct effect of low temperature. The extremities and exposed portions of the body are, most likely to suffer and the dangers is heightened by increased movements. Perspiration, especially from the feet, accelerates

conductive heat loss, as does the accumulation of condensed moisture about the face. Precautions: adequate clothing and moderation of physical activity. Prolonged exposure to low air temperature can alter the body's heat balance, producing hypothermia and causing death eventually.

Low temperature is an aggravating factor in a number of ailments such as arthritis, swollen sinuses, chilblains and stiff joints. Sudden lowering of temperature puts severe strain on person with cardiac disorders. Virtually, all physiological functions react in some manner to temperature changes.

EFFECT OF SUNSHINE ON HUMAN HEALTH

The visible part of spectrum (light) affects mainly the eyes. The intense sunlight of arid tropics or that reflected off snowfields can cause forms of blindness and headache. Ultraviolet radiations can cause premature aging of the skin or sunburn to the point of illness.

Skin cancer is caused when Ultra violet radiations are greater and ozone content in atmosphere is less. U.V. rays with intense heat causes cataract in eyes.

EFFECT OF AIR POLLUTION ON HUMAN HEALTH

High temperature can cause photochemical air pollution with impacts on respiratory diseases. Hot, dry conditions increase potential for bush and forest fires, where smoke impacts on people with cardio respiratory diseases. Possible impact of allergic conditions with changes in plant distribution, flowering and pollen production.

DISEASES RELATED TO CLIMATE CHANGE

Other than cleanliness, nutrition, physical activity, social contact determines causes, severity and spread of diseases. Climate is also a factor which causes diseases when it varies. It is necessary to determine the role of climate in causing modifying or facilitating recovery from specific diseases. Many diseases are associated primarily with certain climate or season because of temperature, moisture and requirement of microscopic organism that causes them.

Numbers of parasites which attack humans are found in tropics and subtropics, where they find suitable condition of warmth and moisture.

E.g. Yellow fever and malaria spread by mosquito that need warm humid climate. Pneumonia and

influenza is common in mid latitudes. Measles and scarlet fever is common in spring. Infectious diseases occur chiefly in winter and spring. Fresh air, sunshine, mild temperature and moderate relative humidity all have therapeutic values. Fresh air and sunlight is recognized on treatment of tuberculosis. Sunshine is necessary for skin diseases and rickets.

EFFECT OF NUTRITION ON HUMAN HEALTH

Health is a function of nutrition. Human physiology is indirectly affected by change in diet, weather and climate, availability of different types of food in different climate, selection of food and effect on appetite is most important.

In cold weather, the body requires greater food intake to maintain heat, increased amount of fats and carbohydrates.

In hot weather, more water, salt and vitamins are needed. The main reason for malnutrition in tropics is suppression of appetite.

CONCLUSION

From the above content it is concluded that climate change, directly or indirectly plays a very significant role on human health other than any other element of physical environment. Weather, ultraviolet radiation, and pollution negatively effect the human health, to get rid from them appropriate precautions along with proper nutrition is very essential for human health.

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