

Climate Change Due to Human activities, and its Health impact.

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Abstract:

Humankind and animal life as well is being constantly subjected to the impacts of rapid environmental changes in the past few decades. The accelerated changes resulting from industrialization and significant increase in global population over the last century have resulted in irreversible damage and loss of resources. The interrelated factors involved in the climatic changes through natural calamities and human interference is reflected in the form of impacts on human health. Direct effects comprise changes in stress response of humans, atmosphere pollution, water quality and availability. Indirect effects include different factors that cause various diseases and infections, especially that are spread through vectors. Precautions and specificity about the climate change impacts on health is quite complex. It is because populations have different vulnerabilities to change and susceptibility to disease. However, the coordinating efforts between the economic growth, social development, environmental protection and individual attempts, could help reduce the health impacts and implement the measures towards better management.

Keywords: *Climate, Health, Diseases.*

Introduction

The drastic variations caused in the environmental conditions affect adversely the implications and interactions of climatic factors. This is scientifically called the 'Climatic change' which is a continuous and never-ending process in today's world. The variability in weather conditions lead to the chain of fluctuations in earth temperatures, melting points, and sea levels. The changes resulting due to the rise and fall of the climatic parameters interfere with human health showing adverse impacts. Though the health responses for many of such impacts is well known by the people, but the unpredictable climate changes increase the complexity.

The changing climatic condition and human health are always correlated. Different conditions of the climate create different problems in human population like, hyperthermia is caused by heat and hypothermia by cold, and droughts cause famine. Diseases and death results from floods, hurricanes, tornadoes, and forest fires. The risk and spread of vector-borne diseases in living organisms, such as malaria, Rift valley fever, plague, and dengue fever is affected by the change in climate. Risk of food borne, air borne and water-borne diseases are also increased by weather resulting in emerging infectious diseases caused by Hantavirus, Ebola virus, and West Nile virus. Thus, climate change show direct effect on human health, alongwith the decreased status of social determinants of health, and alarming threats to the environmental compatibility provided by nature and its sources. (Reiter *et al.*, 2004; Semenza, 2009).

The multiple harmful effects due to climate change interact with the already existing vulnerabilities, thereby causing worse health impacts. Most important fact is that almost all of the health status is affected by the intense health systems, and its capability manage and cope with the health hazards, exclusively sensitive due to climate change. The climate-affected health risks occur due to the gradual alterations in the normal environmental conditions, but the variability is also influenced, such as heat waves, storms, and floods. These are far less predictable than the normal or average set of conditions, but have the capacity to hinder the health facilities, affect social systems, and disturb the key infrastructure. Their irreversible consequences are more harmful, for example the storm surges flood, that in turn influences both the inhabited areas and natural ecosystems.

Climate change as Health threat to Humans.

The fact change in the climate, has significantly turned into an alarming threat to human health. Many of the human activities itself is responsible for the ill-impact on their health. The green house gases, carbon dioxide and methane affects the global climate intensely. The variation in temperature and irregularities in rainfall, which is heavy in some areas and less in others, have upset the climate status globally. Frequency in snowfall and the rise in sea level, worsen the weather mechanisms, with severe impact on environment and on human life. The world’s major climate trends and environmental factors are deteriorating due to this climate change.

Direct and Indirect effects of Climatic change on Human health

Climatic change is the global problem that has both local and regional impact that profoundly affects the people and their health. The relatively direct effects may cause injury, illness or even death, examples being the harsh heat waves or cruel hurricanes (Kalkstein, 1996). The less direct effects of the climate change involve the health impacts through the alteration in the surrounding environment. This cause physiological and reproductive disorders in the form of harmful diseases. For example, the lifecycle of insects and vectors is affected by the temperature and rainfall variations, and hence the transmission of diseases is also influenced. Thus, the climatic fluctuations, directly or indirectly, not only exhibit impacts on human health, but also influence the social and economic systems. (Table CC 1).

Table CC 1: Direct and Indirect effects on Human Health and Economic Systems

1	Direct effect on human health	Involves adverse effects on human physiology (influence of heat waves or intense hurricanes), and physical traumas (caused by natural disasters, such as, storms and floods).
2	Indirect effects on human health	Includes the effects on the production of crops, on the quality of the water, the atmosphere, and the ecology of vectors of the infectious diseases.
3	Effects on social welfare, and economic systems	Includes the effects of, for instance, prolonged drought or heavy floods, that cause migration of population, that lead to burden for resources affecting economic systems and also the social safety mechanisms.

Climate changes due to Human activities

Climatic changes are not only influenced by the natural calamities, but also the human activities that affects more adversely. In urban areas, the urban heat island and urban warming are caused by the human activities. Mostly the changes in land use is brought about through activities such as deforestation, construction of buildings and malls, the storage and excessive use of water, as well as consumption of fuel and energy. The heat stored up from the sun by the buildings and streets during the day and thereafter released slowly at night, makes the night-periods warmer than in neighboring rural regions. Heat is also generated from the other sources such as tube-lights, air-conditioners, appliances and furnaces. The buildings and roads are so constructed that the rainfall quickly runs off, curtailing the moisture requirement of the land. As in the open fields, the retention of water and moisture, on the contrary, cools down the atmosphere. In some places, a reverse of urban warming occurs, and the sub-urban cooling effects occur when the lawns and golf courses are excessively watered. Thus the changes caused in the properties of the land use give rise to different climatic changes. The climatic changes are brought about by the human activities, by causing changes in Earth's atmosphere in the amount of Greenhouse gases, aerosols and cloudiness. The pollution is also caused from the burning of fuels and from industries, that contaminate the atmosphere by releasing carbon-di-oxide into it. Beside Carbon dioxide, Methane, Nitrous oxide and the Halocarbons are also released as a result of human activities, that accumulate in the atmosphere resulting in Greenhouse effects and Global warming (Bateson and Schwart, 2004; Michael Mc *et al.*, 2006).

Discussion and Conclusion

Climate change in routinary way, according to the cyclic weather change is quite normal. It ought to be so, in order to keep the ecosystems balanced and also for sustenance of living creatures. However, the forced climate change, due to the human activities for their own selfish purposes, harms the normal physiological processes of animals and human beings themselves, causing overall disruption. Changes in climate, particularly the weather extremes, interfere with the environmental and ecosystem equilibrium, which is responsible in providing us with the basic essentialities of life, i.e., pollution-free air and water, food, shelter and security. All these factors show up adversely on human health. Also the stress sources, either natural or human-made, alongwith the climate change threaten human health and fitness, thereby risking their life.

The rapid industrialization and urbanization are consistently increasing the changes in climate, and so are its impacts on human health. The shooting pollution in the atmosphere and its resultant toxicity is the root cause of respiratory disorders, skin infections and cancers. The contaminated water and the temperature fluctuation give rise to many microbes and vectors. These, then become the significant cause of many pathogenic conditions, that lead to the development of dreadful diseases. The psychological problems also arise in the consequent chain.

Connecting our understanding about how our activities are changing the climate and how these changes are causing ill-impact on our health and survival, is the basic attempt to be followed for the welfare of humans and society. In a nutshell, the climate changes causes severe harm to the environment, health and biodiversities. Studies and research in this direction should emphasize on the serious actions to prevent the climate change. Otherwise, the life supporting planet, the Earth, will get worsen, and lead to chronic ailments and violence in the future generation.

So, the actions and the activities of human beings should be in attempt of protecting the environment and life-support system. The continued stability and proper functioning of the biosphere's ecological and physical systems, is undoubtedly responsible for the long-term good health status of populations. (Kovats *et al.*, 2005; Kalkstein, 1991)

References

- Bateson T F and Schwartz J (2004). W.H.O. is sensitive to the Effects of Particulate Air Pollution on Mortality? A case-cross over analysis of the effect modifiers. *Epidemiology*, 15: 143-149.
- Kalkstein L S (1991). A new approach to evaluate the impact of climate upon human mortality. *Environmental Health Perspectives*, 96: 145–150.
- Kalkstein L S (1996). A new spatial synoptic classification: application to air-mass analysis. *International Journal of Climatology*, 16: 983–1004.
- Kovats RS, Campbell-Lendrum D and Matthies F (2005). Climate change and human health: estimating avoidable deaths. *Risk Anal*, 25: 1409–1418.
- Mc Michael, A J Woodruff, RE, and Hales S (2006). Climate change and human health: present and future risks. *Lancet*. 367: 859–869
- Nerlander L (2011). *Climate Change and Health*, Commission on Climate Change and Development. www.ccdcommission.org/Filer/commissioners/Health.pdf .
- Reiter P , Thomas C and Atkinson P (2004). Global warming and malaria: a call for accuracy. *Lancet Infectious Diseases*, 4: 323 – 324.
- Semenza J and Menne B (2009). Climate change and infectious diseases in Europe. *Lancet*, 9: 365 –375.