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Climate Change And Its Impact On Human Health

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Abstract

Climate plays a significant role in people's health. Environmental consequences of climate change, such as extreme heat waves, rising sea-levels, changes in precipitation, intense hurricanes, and degraded air quality, affect directly and indirectly the human health. Climate change brings an increase in malnutrition, mental health conditions, infectious disease spread and even death. Appropriate mitigation and adaptation strategies will positively affect both climate change and the environment, and thereby positively affect human health. This paper focuses on the impacts of climate change on the physical, social, and psychological health of humans.

Keywords:- Climate change, human health, Global warming, Weather, Temperature

Introduction

In the last decade, the interest in the effect of climate change on human health has increased. The impact of Homo sapiens and his activities on the Earth's complex ecosystem have started since the beginning of farming, but it is only with the industrial revolution in the 18th century that the changes produced by human activities on planet Earth have been accelerating exponentially. Precisely, elements), the presence of clouds, precipitation and the presence of special phenomena, such as thunderstorms, dust storms, tornados and others. Climate is defined as the average weather, or as the statistical description in terms of the mean and variability of relevant quantities over a period of time ranging from months to thousands or millions of years.2 because of the role played by Homo sapiens in changing the ecosystem in order to ensure his survival and his development, the actual geological era, which follows the Holocene, is called the Anthropocene .Good health of population depends on the continued stability and functioning of the biosphere's ecological and physical systems, referred to as life-support systems. The earth's climate is an integral part of this complex of life-supporting systems.

Climate change can be defined by the differences between average weather conditions at two separate times. Climate may change in different ways, over different time scales and at different geographical scales. The world's climate system is now coming under pressure from the increasing average global temperature (McMichael et al., 2003). Natural events and human activities are believed to be contributing to global warming and climate change, through the enhancement of the natural 'greenhouse effect'. This is caused primarily by increases in greenhouse gases (GHGs) such as Carbon Dioxide (CO2), water vapours (H2O), Methane (CH4), Chlorofluorocarbons (CFCs) etc.

A warming planet due to high concentrations of GHGs leads to a change in climate. The climate change affects weather in various ways claiming human lives from diseases, heat and extreme temperature conditions. Global climate change is, therefore, threatening the ongoing efforts to protect human health. Stresses on the climate system are already causing impacts on Earth's surface. These include not only rise in surface temperatures, but also increasingly frequent floods and droughts, and changes in natural ecosystems, such as earlier flowering of plants, and Poleward shifts in the distribution of several species.

Impacts of climate change on the physical health

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The changes in the climatic conditions affect human health and well-being both directly, through the physical effects of climatic extremes, and indirectly, through influences on the levels of pollution in the air, on the agricultural, marine and freshwater systems that provide food and water, and on the vectors and pathogens that cause infectious diseases. There is a well-studied relationship between rainfall and diseases spread by insect vectors which breed in water. The main species of interest are mosquitoes, which spread malaria and viral diseases such as dengue and yellow fever. Vector-borne disease transmission is sensitive to temperature fluctuations also. Increases in temperature reduce the time taken for vector populations to breed. Increases in temperature also decrease the incubation period of the pathogen (e.g. malaria parasite, dengue or yellow fever virus) meaning that vectors become infectious to human health more quickly (WHO,1998). The direct effects of fires on human health are burns and smoke inhalation.

Loss of vegetation on slopes may lead to soil erosion and increased risk of landslides, often exacerbated when an urban population expands into surrounding hilly and wooded areas. Global climate change is likely to be accompanied by an increase in the frequency and intensity of heatwaves, as well as warmer summers and milder winters. Extreme summer heat's impact on human health may be intensified by increases in humidity. Heatwaves as responses to very high temperatures can kill the people. During heatwaves, excess mortality is greatest in the elderly and those with pre-existing illness.

Much of this excess mortality is due to cardiovascular, cerebrovascular and respiratory disease. The elderly (aged 75 and over) are also vulnerable to winter death due to cardiovascular, cerebrovascular, circulatory and respiratory diseases (Sakamoto, 1977). Many epidemiological studies have implicated UV radiations due to stratospheric ozone depletion as a cause of skin Cancer (IARC, 1992; WHO, 1994). High intensity UVR also damages the eye's outer tissues causing "snow blindness", the ocular equivalent of sunburn.

Chronic exposure to UVR causes both local and whole-body immuno-suppression. Globally, there is an increasing trend in natural disaster impacts. The health effects of natural disasters are difficult to quantify because secondary effects and delayed consequences are poorly reported and communicated. Developing countries like India are poorly equipped to deal with weather extremes. Changes in climate and global warming may require population to migrate, which can lead to acculturation stress. It can also lead to increased rates of physical illnesses, which secondarily would be associated with psychological distress. In the last decade, the interest in the effect of climate change on human health has increased. The impact of Homo sapiens and his activities on the Earth's complex ecosystem have started since the beginning of farming, but it is only with the industrial revolution in the 18th century that the changes produced by human activities on planet Earth have been accelerating exponentially.

Precisely, elements the presence of clouds, precipitation and the presence of special phenomena, such as thunderstorms, dust storms, tornados and others. Climate is defined as the average weather, or as the statistical description in terms of the mean and variability of relevant quantities over a period of time ranging from months to thousands or millions of years.2 because of the role played by Homo sapiens in changing the ecosystem in order to ensure his survival and his development, the actual geological era, which follows the Holocene, is called the Anthropocene.

Impacts of climate change on social life

As a society, human beings have structured their day-to-day lives around historical and current climate conditions. We are accustomed to a normal range of conditions and may be sensitive to extremes that fall outside of this range. Climate change could affect social life through impacts on a number of different social,

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cultural, and natural resources contributing to rising inequality. Similarly, some types of professions and industries may face considerable challenges from climate change. Ultimately, the way climate change impacts weather, the environment, animals, and agriculture effects humanity as well. But there's more. Around the world, our ways of life—from how we get our food to the industries around which our economies are based—have all developed in the context of relatively stable climates. As global warming shakes this foundation, it promises to alter the very fabric of society. At worst, this could lead to widespread famine, disease, war, displacement, injury, and death. For many around the world, this grim forecast is already their reality. In this way, climate change poses an existential threat to all human life.

Human health

Climate change worsens air quality. It increases exposure to hazardous wildfire smoke and ozone smog triggered by warmer conditions, both of which harm our health, particularly for those with pre-existing illnesses like asthma or heart disease. Insect born diseases like malaria and Zika become more prevalent in a warming world as their carriers are able to exist in more regions or thrive for longer seasons. In the past 30 years, the incidence of Lyme disease from ticks has nearly doubled in the United States, according to the U.S. Environmental Protection Agency (EPA). Thousands of people face injury, illness and death every year from more frequent or more intense extreme weather events. At a 2-degree in global average temperature, an estimated one billion people will face heat stress risk. In the summer of 2022 alone, thousands died in record-shattering heat waves across Europe.

Weeks later, dozens were killed by record-breaking urban flooding in the United States and South Korea—and more than 1,500 people perished in the flooding in Pakistan, where resulting stagnant water and unsanitary conditions threaten even more. Professions that are closely linked to weather and climate, such as outdoor tourism and agriculture, will likely be especially affected. Adaptation and mitigation measures Adaptation and mitigation measures aim to make individual adept to the changing environment and attempt to reduce environmental change in the future, respectively. Mitigation of greenhouse gases involves less reliance on fossil fuels, developing and using alternate efficient power sources, reducing encroachment on green cover and other similar measures.

There is a developing global perspective about the need to reduce the carbon footprint per person over the next few decades, and to cover the inequities between the rich and the poor countries. Countering the challenge of climate change requires inter-sectoral and international collaboration to implement policies for reducing the emission of greenhouse gases (Rosswall,1991). Developing countries like India have also developed and articulated their policies toward challenging the impact of climate change. The National Action Plan on Climate Change (NAPCC) documents the Indian government's plan to deal with the issue of climate change (Pandve, 2009) Each of the missions aims at mitigating the process or reducing the impact of climate change. The effect of implementation of these policies needs to be seen. The provision of adequate treatment facilities for managing mental health problems should be undertaken. This is especially required for natural disaster-related problems, when the vulnerability to stress is acute. Promoting positive mental health is another way to mitigate the psychological distress due to climate change. Human resilience and coping can reduce the effect of mental health stress due to climate change. Utilization of strategies like yoga can be indigenous and acceptable ways to deal with stress

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Climate change and effect on mental health

Societies dependent on agriculture are likely to be quite impacted by the changing climate. Agricultural land may be encroached upon by rising sea levels, desiccation or flooding. Moreover, extreme heat makes agricultural work less productive due to fatigue of the workers. Decreasing agriculture produce also hampers the production in agricultural support industries which also employ the manual labours during the lean season. These can lead to economic hardship which can result in an increase in mental health problems. It has been observed that drought prone areas are vulnerable to lower socioeconomic status and higher levels of distress and helplessness. Long duration droughts have been associated with deterioration of economic conditions, which has been associated with depression and demoralization. Distress due to prolonged droughts have been found in adolescents and have been seen to increase with time. Social capital which combines social cohesion and community participation is strained under economic pressure situations. Decrement in social capital can lead to a reduction in wellbeing and may influence genesis of mental health problems. Women are more likely to be affected than men with the reduction of social capital especially when they have to migrate for employment or other reasons, which is likely to secondarily impact the family wellbeing. Economic constraints can also have an adverse impact of healthcare seeking, especially for mental health. The ability of the society to provide treatment may be reduced during periods of economic hardships. Individual's payment for treatment, which is the more common mode of payment of treatment in developing countries, can be affected due to economic adverse situations, leading to inadequate treatment opportunities and suboptimal treatment.

Climate change is likely to be related to changes in habitat and ecosystems all over the world. Submergence of coastal areas, hurricanes and floods, and prolonged droughts are likely to be associated with migration of population, regionally and internationally. Previous mental health literature suggests that migration of individuals is related to acculturation stress, which is likely to act in the genesis of psychiatric disorders. For example, migrants are more likely to suffer from schizophrenia than the host population or the population of their origin. It has been suggested that the reasons of migration also influence the propensity to develop psychological problems in individuals. Those individuals forced to migrate after strife and disasters are more likely to suffer from psychiatric illness as compared to those individuals who choose to migrate voluntarily.

Conclusion

Climate change is already a threat to community well-being. It is not only an economic issue; it is a threat to our support systems. In the coming decades, doctors who are interested in the long-term health of their patients and communities will have a central role in the mitigation of climate change and in preparing for and managing its adverse health impacts. Interdisciplinary and intersectoral partnerships from the local to international level that seek to improve health through rapid deployment of mitigation strategies to stabilize climate change and development of proactive adaptation programmes to minimize health impact of climate change are fundamental. We must act now because the rate at which the human environment is changing is alarming and the impact of climate change on human health is getting worrisome. All tiers of government, health professionals and other stakeholders should be able to marry the socioeconomic development of our generation and the global ecosystems. Protecting Health from Climate Change depends on how we address the challenges posed by climate change and ozone layer depletion.

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