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Review Article

Impact of Climate Change on Health in Zambia

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Abstract

Climate change in recent years has continued to pose a great danger to human health. This phenomenon affects human life and the physical environment in which they live. According to the WHO (2023), changing climatic conditions have a significant impact on the frequency and intensity of weather and climate events. These climatic events include: storms, extreme heat, floods, droughts, and wildfires. All the mentioned hazards directly and indirectly affect human health by increasing the likelihood of health emergencies, the spread of infectious diseases, and the occurrence of non-communicable diseases, ultimately leading to death.

It is reported that the most severe harms caused by climate change greatly affect communities that are least able to prepare for and recover from heat waves, poor air quality, flooding, and other impacts. This includes people living in low-income communities and migrants whose work and living conditions are exacerbated by climate change (Shivani, 2021).

Therefore, there is a great need for a multi-sectoral approach in reducing the impact of this global hazard. Governments must develop more potent policies to address the health challenges posed by climate change. The international community's efforts to deal with climate change must be more robust and implemented rapidly to prevent further impact on the health of the world population.

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1. INTRODUCTION

The Climate change phenomenon is a global emergency with an enormous peril to human life. It continues to pose the most inevitable threat to human health in the 21st Century. It is reported that the threat to human health by climate change has affected nearly half of the world's population. Notably, the negative impacts on health can be found worldwide (Kerry, 2024) [2].

It has been observed that the increase in the severity of climate events is a result of the relentless rise in greenhouse gas (GHG) emissions that trap the sun's heat in the atmosphere and push Earth's temperature ever higher. These emissions have continued to grow steadily since the pre-industrial days, with a particularly rapid acceleration since the 1970s. There has not been a year since the turn of the millennium when the level of emissions plummeted, except 2020, the year the global economy was upended by the COVID-19 pandemic and most of the economic activities came to a standstill for months (World Economic Forum, 2024) [11].

Climate change is creating a huge impact on the health workforce and infrastructure by reducing the capacity to provide universal health coverage (UHC) for the World Health

Organization. Additionally, climate shocks and growing stresses such as changing temperature and precipitation patterns, drought, floods and rising sea levels degrade the environmental and social determinants of physical and mental health globally. It has been recorded that all aspects of health are affected by climate change, from clean air, water, and soil to food systems and livelihoods. The further delay in dealing with climate change will only increase health risks, undermine decades of improvements in global health, and contravene our collective commitments to ensure the human right to health for all (World Health Organization, 2023) [10].

This article discusses the impact caused by climate change on the health of the Zambian population. Determining the severity of the phenomenon and the most affected people.

2. REVIEW OF LITERATURE

A great resource of literature is available internationally on the effects of climate change on various aspects of our world's ecosystem, including human health. In the Zambian context, not much literature is available to explain the effects of climate change on health. However, the impact of climate change on human health has been explained through the literature available.

1. Cholera Outbreaks: Zambia is experiencing one of its most severe cholera outbreaks in two decades, with over 23,000 cases and 740 deaths reported since October 2023. The outbreak is linked to climate change-induced flooding, which contaminates water sources and overwhelms sanitation systems, facilitating the spread of Vibrio cholerae. Additionally, inadequate access to clean water and sanitation, with 6.4 million Zambians lacking clean water, exacerbates the situation (World Reports, 2025) [9].

2. Malaria Transmission: According to the Lusaka Times (2025) [4], Climate change is altering the transmission dynamics of malaria in Zambia. Rising temperatures and increased rainfall create favorable conditions for mosquito breeding, leading to higher malaria transmission rates. This is particularly concerning for vulnerable populations, including children under five and pregnant women.

3. Food Insecurity and Malnutrition: The 2023–2024 drought, declared a national disaster, has severely affected food production, with maize yields dropping by 53.6% (ACAPS, 2025) [1]. Approximately 5.8 million people are projected to face food insecurity, leading to increased malnutrition and related health issues (UNICEF, 2025).

4. Mental Health Impacts: Extreme weather events and climate-related stressors are contributing to mental health challenges in Zambia. Communities affected by droughts and food insecurity report increased levels of anxiety, depression, and post-traumatic stress disorder (PTSD), highlighting the need for integrating mental health support into climate adaptation strategies (Lusaka Times, 2025).

5. Zoonotic Diseases: According to the Scoop Newspaper (2024), Climate change is influencing the emergence and spread of zoonotic diseases in Zambia. Shifts in animal habitats and behaviors due to changing temperatures increase the risk of diseases being transmitted from animals to humans, posing additional public health threats.

In response, Zambia is implementing multi-sectoral strategies, including improved water, sanitation, and hygiene (WASH) initiatives, strengthening health systems, and integrating mental health considerations into climate policies to mitigate the health impacts of climate change.

3. METHODOLOGY

This study adopts a qualitative desk-review approach, drawing primarily on secondary sources of data. Information was synthesized from international organizations such as the World Health Organization (WHO), United Nations Children's Fund (UNICEF), and the World Economic Forum, as well as regional sources including the Zambian Ministry of Health and local media reports (2021–2025). The literature reviewed included journal articles, policy briefs, institutional reports, and newspaper publications. A thematic analysis was conducted to identify recurring patterns related to the impacts of climate change on human health in Zambia. The key themes analyzed include: (i) water- and vector-borne diseases, (ii) food insecurity and nutrition, (iii) mental health, and (iv) zoonotic disease risks. Emphasis was placed on the Zambian context, while drawing comparative insights from global and regional experiences to highlight gaps in policy and research.

4. DISCUSSION

The review highlights that climate change poses complex and interlinked health challenges in Zambia. Flooding events, exacerbated by erratic rainfall, have intensified cholera outbreaks, revealing the fragility of Zambia's water and sanitation infrastructure. Similarly, rising temperatures and altered rainfall patterns have created favorable breeding conditions for mosquitoes, sustaining malaria as a major public health threat, particularly for children under five and pregnant women. These findings align with global studies that project climate variability as a driver of vector-borne diseases in sub-Saharan Africa.

Food insecurity, driven by prolonged droughts, has further aggravated malnutrition and undernutrition, threatening the country's progress toward Sustainable Development Goal 2 (Zero Hunger). Malnutrition, in turn, increases vulnerability to infectious diseases, creating a vicious cycle of poor health outcomes. Moreover, the emerging evidence of mental health burdens—such as anxiety, depression, and post-traumatic stress—illustrates that climate change is not only a physical health crisis but also a psychosocial one.

Another significant concern is the rising threat of zoonotic diseases. Shifts in animal habitats due to changing temperatures increase human–animal interactions, raising the risk of cross-species disease transmission. This underscores the importance of adopting a "One Health" approach that integrates human, animal, and environmental health.

Despite some efforts—such as multi-sectoral strategies and WASH (Water, Sanitation, and Hygiene) initiatives—Zambia's response remains constrained by limited resources, inadequate

infrastructure, and weak policy enforcement. Strengthening climate-resilient health systems, investing in early warning mechanisms, and integrating mental health support into national climate adaptation plans are critical next steps. Regional cooperation and global financing mechanisms, including the Green Climate Fund, must also be leveraged to build resilience.

5. CONCLUSION

In conclusion, the impacts of climate change on health in Zambia are diverse and multifaceted, ranging from the increased incidence of infectious diseases to food insecurity, to water and sanitation challenges, and mental health issues. Addressing these challenges requires a holistic approach that integrates climate change adaptation strategies into public health planning. Further research is needed to better understand the long-term health impacts of climate change in Zambia and to develop effective mitigation and adaptation strategies.

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