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Editorial

Environmental and Climatic Conditions Impacting Cardiovascular Health in Low-Income Countries like Pakistan

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Abstract

The relationship between environmental conditions, climate change, and public health is becoming increasingly critical, especially in low-income countries like Pakistan. Severe air pollution, driven by industrial emissions and vehicular exhaust, poses significant health risks, particularly to cardiovascular health. Prolonged exposure to pollutants like PM2.5 is linked to higher rates of cardiovascular diseases (CVDs) such as stroke and ischemic heart disease. Additionally, climate change has exacerbated these issues, with extreme weather events like heatwaves and floods further straining cardiovascular systems. Addressing these challenges requires coordinated public health initiatives, stricter environmental regulations, and community engagement to raise awareness and promote sustainable practices. Enhanced research and international collaboration are essential to mitigate the adverse health impacts of climate change and environmental degradation on Pakistan's population.

Keywords: Air pollution, Cardiovascular health, Climate change, Public health, Environmental regulations, Pakistan

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EDITORIAL

The intricate relationship between environmental conditions, climate change, and public health is increasingly recognized as a global concern. In countries like Pakistan, where economic and infrastructural challenges abound, the impact of these factors is particularly acute, with profound implications for cardiovascular health.

Urban areas in Pakistan face severe air pollution due to industrial emissions, vehicular exhaust, and the burning of biomass. These pollutants contribute significantly to poor air quality, posing a grave risk to public health. According to the World Health Organization (WHO) [1], such pollutants are major drivers of respiratory illnesses, particularly in children, who are vulnerable to the harmful effects of particulate matter (PM2.5) and other airborne toxins. These tiny particles, which can penetrate deep into the lungs, are not only linked to respiratory issues but also to a higher incidence of non-communicable diseases, including cardiovascular diseases (CVDs) such as stroke, ischemic heart disease, and hypertension. Prolonged exposure to air pollution triggers systemic inflammation, oxidative stress, and impaired vascular function—conditions that significantly elevate the risk of CVDs [2,3].

The specter of climate change has further compounded these challenges, leading to an increase in extreme weather events across Pakistan. Heatwaves, floods, and droughts are becoming more frequent and severe, with heatwaves, in particular, causing dehydration and heat stress—both of which strain the cardiovascular system [4]. The convergence of overpopulation, resource scarcity, and economic instability exacerbates these issues, amplifying the adverse effects of climate change on human health [5,6].

In low-income countries like Pakistan, where resources are scarce and infrastructure is limited, the impact of environmental and climatic conditions on cardiovascular health is especially pronounced. The need for urgent and coordinated action cannot be overstated. Addressing this complex issue requires a multifaceted approach that includes policy changes, public health initiatives, improvements in healthcare infrastructure, and robust community engagement, particularly in rural and underserved areas.

Healthcare professionals must be trained to recognize and treat conditions exacerbated by environmental factors, and the availability of essential medications and emergency services must be ensured. Moreover, the government must enforce stricter environmental regulations to curb air pollution, monitor industrial and transportation emissions, and promote the use of renewable energy sources.

Raising public awareness about the impact of environmental factors on cardiovascular health is crucial. Public health campaigns should educate communities about the risks of air pollution and extreme weather events while promoting lifestyle changes that can mitigate these risks. Engaging local communities in climate adaptation and health initiatives is essential. Community-based programs that promote sustainable practices, such as tree planting and conservation efforts, can help improve local environments and reduce pollution levels.

Enhanced research efforts are needed to better understand the specific ways in which environmental and climatic factors affect cardiovascular health in Pakistan. Collaboration with international organizations and research institutions can provide valuable insights and resources [7,8]. By adopting these measures, policymakers can mitigate the adverse health impacts of environmental and climatic changes, ultimately improving the cardiovascular health of Pakistan's population.

As we look to the future, the intersection of environmental and climatic conditions with cardiovascular health will pose significant challenges, particularly for low-income countries like Pakistan. However, with concerted effort and meaningful action, these challenges can be met head-on, paving the way for a healthier, more resilient population.

AUTHORS' CONTRIBUTION

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REFERENCES

1. World Health Organization. Indoor air pollution and child health in Pakistan. Available from: https://www.who.int/maternal_child_adolescent/documents/9241594169/en/. Accessed 2021 Jan 29.
2. Kovats S, Akhtar R. Climate, climate change and human health in Asian cities. Environ Urban. 2008;20(1):165-75.
3. Baumgartner J, Brauer M, Ezzati M. The role of cities in reducing the cardiovascular impacts of environmental pollution in low- and middle-income countries. BMC Med. 2020;18:39.
4. Iqbal MP. Effect of Climate Change on Health in Pakistan: Climate Change and Health in Pakistan. Proc Pak Acad Sci B Life Environ Sci. 2020;57(3):1-12.
5. Weber H, Sciubba JD. The effect of population growth on the environment: evidence from European regions. Eur J Popul. 2019;35(2):379-402.
6. Fazal O, Hotez PJ. NTDs in the age of urbanization, climate change, and conflict: Karachi, Pakistan as a case study. PLoS Negl Trop Dis. 2020;14(11):e0008791.
7. Malik SM, Awan H, Khan N. Mapping vulnerability to climate change and its repercussions on human health in Pakistan. Global Health. 2012;8:31.
8. Ahmed T, Scholz M, Al-Faraj F, Niaz W. Water-Related Impacts of Climate Change on Agriculture and Subsequently on Public Health: A Review for Generalists with Particular Reference to Pakistan. Int J Environ Res Public Health. 2016;13(11):1051.