

Extreme Weather and Society

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# Climate, Vulnerability and Health

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# Social Vulnerabilities and Community Responses in India: Extreme Weather and COVID-19 Pandemic



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**Abstract** The health of populations is inseparably linked with weather and climate and disease epidemiology. Extreme weather events like heat waves, storms, droughts, and dangerous flooding bring destruction in their wake. Damage to infrastructure and other built environments is easily visible after an extreme weather event. Extreme weather events bring physical injury and death, creating mental health consequences in their wake. A new realization has captured the imagination of the world, that of extreme weather events along with disease pandemics, like the COVID-19 crisis. Weather extremes and disease pandemics, together, present challenging problems particularly for governments and communities alike. Poor and vulnerable populations are the most affected. The capacity of a community to plan and prepare for extreme weather and pandemics is a new and important determinant of health consequences and their severity. Existing public health and safety systems are significant factors in responding to such combined emergencies. Other factors include the age, gender, education, medical conditions, and socioeconomic status of the populations affected. Such double events affect most, if not all, elements of life, including agriculture yields and the long-term food security of nations. Therefore, governments, community institutions, nongovernmental organizations, international agencies, and individual citizens must consider preparation for all such combined extreme events a priority. This chapter presents an overview of mental health consequences of the combined effects of a pandemic (COVID-19) and extreme weather events—heat waves, droughts, floods, rains, and their unpredictable intermittency—when they happen together.

Mental health following such combined events is a challenge. Government, community, and agencies extant, rush to help, to deal effectively with the present and future combined events and their known and potential consequences. Best practices in response to this combined, continuing, extreme weather events with a pandemic are also considered.

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## **1 Introduction: Climate Change and Vulnerable Mental Health**

Extreme weather events caused by climate change take a heavy toll on human life and influence mental health and the psychosocial well-being of those affected. Weather extremes in a changing climate and the COVID-19 pandemic combined have had a mental impact on those who rely on their experience of a relatively stable climate and relatively stable system in environmental health. This chapter brings important known population vulnerabilities into focus and ideas for action.

Every community hit by COVID-19 across the world has been impacted, but the statistics of mental health are few and slow to emerge. The COVID-19 pandemic has affected the Indian economy and society in many ways including impact on mental health, affecting it adversely. The setback suffered in terms of psychosocial well-being of people, apart from economic impacts, is immeasurable, and it will take time to even fathom the extent of dent on the human psyche.

The combined impact of the climate-change-induced extreme weather with the COVID-19 pandemic has significantly affected farmers and surrounding communities in India. While the world was still struggling to resolve the debate around human action linked to global warming, climate change, and extreme weather events, the global population confronted with the COVID-19 pandemic. In similarity with extreme weather events, it affected the entire population, especially the vulnerable, poor, and farmers, who work most collaboratively with, and in, nature. The combined impact of the extreme weather and the pandemic on these groups can only be imagined as additional disciplines and studies become engaged and more socioeconomic-environmental data pour in. Physical and mental health and the psychosocial well-being of vulnerable populations are affected globally. The need to rethink the future in terms of environment, climate change, and pandemic is urgent as new strains of diseases emerge from an already changed and still changing climate and environment.

My personal experience with COVID-19 attests to the severe impact of the disease on local communities and livelihoods, as I lived through it, and the pandemic across India. This chapter focuses on these influences on physical health, social well-being, and community responses in rural India.

## **2 Extreme Weather, COVID-19, and India**

Extreme weather events are rare stochastic events. Easterling et al. (2000) defines two categories of extreme weather. The first refers to extremes in terms of very low or very high temperatures, and the second refers to more complex event-driven extremes such as droughts, floods, or hurricanes. We show that both categories place a considerable burden upon people and their ability to cope with.