Pushing for a climate-resilient mental health ecosystem in India

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As the impacts of climate change continue to escalate, the importance of addressing its effects on mental health is increasingly being recognized. In the Indian context, vulnerable populations are disproportionately affected by climate-related disasters. This paper attempts to take the existing body of research on the mental health impacts of climate change forward by propagating the need for a climate-resilient mental health ecosystem. Preliminary research on climate change and its effects on human health highlights the limited focus on building mental health ecosystems resilient to climate shocks, especially in India. Further, the paper describes the barriers to safe and affordable uptake of mental health services in India. The paper also outlines the resource availability and preparedness of the Indian healthcare system to tackle climate-induced mental health challenges, especially in the post-Covid era.

The paper identifies key hurdles to achieving resilience within the current mental health infrastructure and outlines potential strategies for overcoming these challenges in the Indian context. Recognizing the regulatory framework already established by the Government for mental health services, the paper emphasizes the importance of strengthening mental healthcare services being provided under the District Mental Health Programme in India. The paper advocates for integrating mental health considerations into climate adaptation and disaster response policies. The need for fostering enhanced collaboration between government agencies, civil society organizations, and local communities has also been highlighted. Additionally, the criticality of more profound research to inform evidence-based approaches to building climate-resilient mental health systems has been underlined in the paper.

Keywords: climate change, climate resilience, mental health, health system strengthening, climate-resilience framework, climate-resilient health systems

Introduction

Well before the COVID-19 pandemic disrupted global health systems and moved the needle for adopting a focused approach to the intersectionality of climate change and health, climate change had been proclaimed as a medical and health emergency by leading organizations devoted to public health, environmental health, patient advocacy, medical practice, and nursing services.

There have been numerous dialogues, both at the policy and operational levels, with supportive research on the adverse effects of climate change on human health, thus driving the One Health agenda forward. These dialogues and research have largely been limited to the physical manifestations of climate shocks on human and animal health. However, the lesser-known effects of climatic events on mental and psychosocial well-being, especially on vulnerable populations, have not been well explored.[1]

Land-vulnerable persons (either due to occupation or geographic location), indigenous persons, women, children, older adults, and climate migrants are traditionally among the most

vulnerable populations whose mental health is impacted by climate change. Environmental, social, and public health determinants mediate the effects of climate change on health.

A detailed review of 130 research papers on gender and climate change by the Global Gender and Climate Alliance (GGCA) found that women are more likely to be affected than men by climate impacts on health.2 Females are also more vulnerable to the health impacts of climate change due to several factors, including limited access to resources such as land, credit, agricultural inputs, decision-making structures, technology, training, and extension services.[3]

Indigenous populations are uniquely vulnerable to the mental health impacts of climate change due to historical trauma, strong connections to the natural environment, limited adaptive capacities, and threats to cultural continuity and identity.[4 5 6]

Children and older adults are more vulnerable to the mental health impacts of climate change due to factors such as disrupted physiological development, cognitive abilities, and emotional skills in children, intersecting with other threats like parental health, depression, anxiety, racism, poverty, and inadequate access to care. In comparison, older adults face greater physiological susceptibility to climate-related health effects, such as extreme weather events and heat waves, compounded by factors like physical disabilities, poor mental health, and limited access to resources and care. [7 8 9]

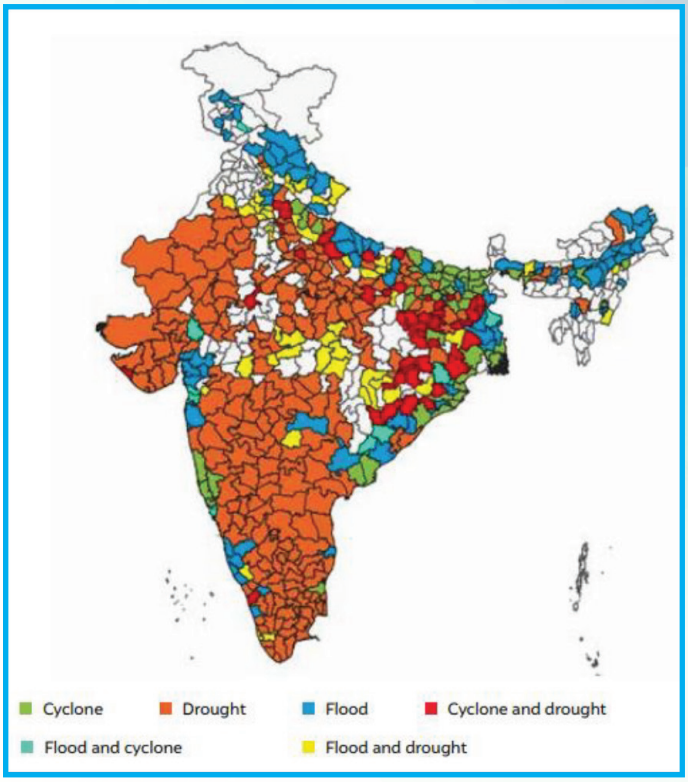


Figure 3: More than 75% of Indian districts are extreme climate event hotspots. Source: Abinash Mohanty, Council on Energy, Environment and Water (CEEW): Preparing India for Extreme Events

As the impacts of climate change intensify, including extreme weather events, rising temperatures, and environmental degradation, the psychological toll on individuals and communities is becoming increasingly evident. However, India's mental health infrastructure often lacks the necessary resources and strategies to address these challenges. Limited resources, inadequate training of mental health professionals in dealing with climate-induced psychological distress, and a general lack of awareness about the nexus between climate change and mental health further compound the issue.

Marginalized and vulnerable populations, including those living in low-lying coastal areas, urban slums, and rural regions, are particularly susceptible to the adverse mental health impacts of climate change due to their heightened exposure and limited access to mental health services.

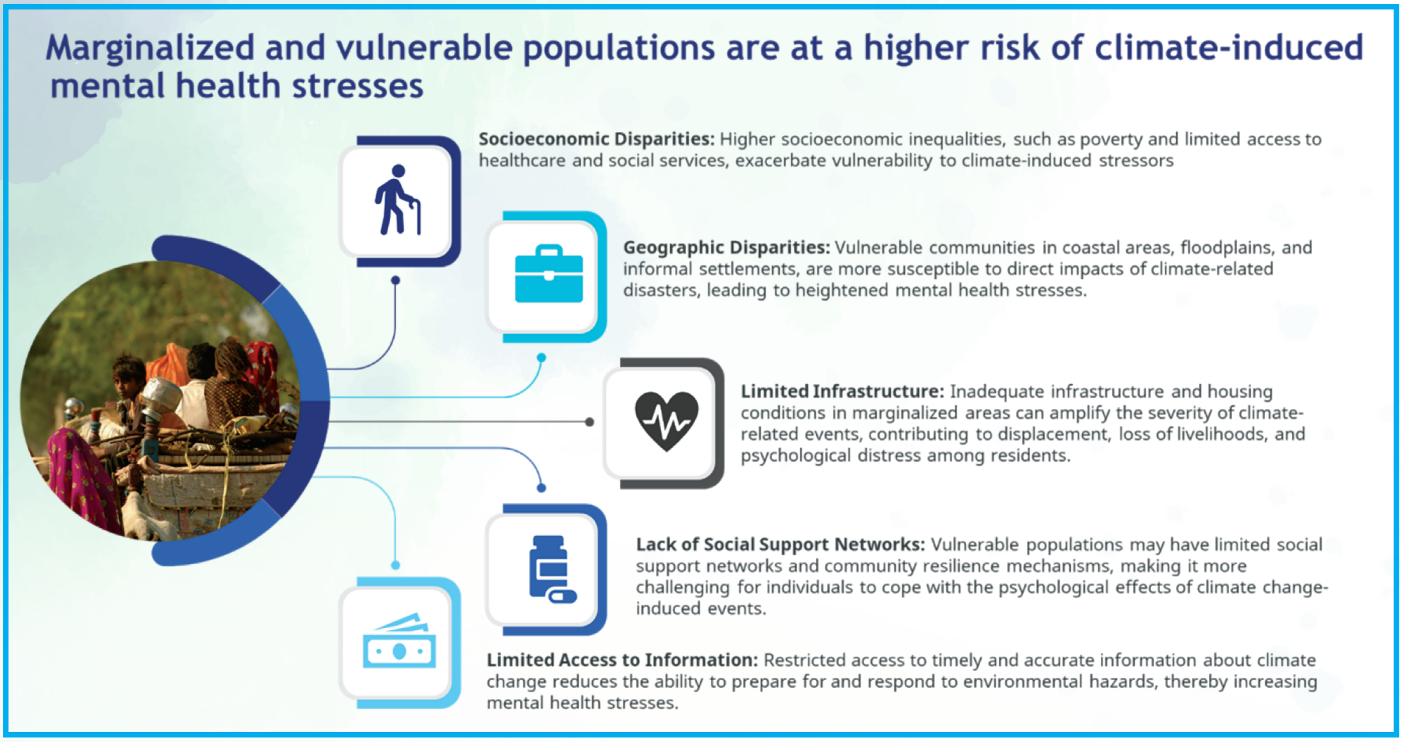


Figure 1 Higher risk of climate-induced mental health stresses for marginalized and vulnerable communities

The need for resilient health systems and institutional frameworks to enable care provisions for mental health challenges for their captive communities has been stressed by the World Health Organization in its World Mental Health Report 2022.[10]

The United Nations' Paris Agreement has already elucidated the global actions critical to creating a sustainable planet. The Intergovernmental Panel on Climate Change (IPCC) has also noted in its sixth report that "healthy ecosystems are more resilient to climate change."[11]

However, most countries have failed to translate these directives into tangible frameworks. The World Economic Forum has highlighted the absence of a "global plan for the resilience of people, including those nearly 4 billion people living in communities most vulnerable to the impacts of the climate crisis". This has also been underscored by the WHO Health and Climate Change Survey Report 2021, published at the COP26 UN climate conference in November 2021.[12]

❑ Dual burden of health risks and catastrophic financial expenditure due to climate change

Climate change has diverse impacts on health, manifesting in various ways, such as heightened risks of mortality and illness due to more frequent extreme weather occurrences like heatwaves, storms, and floods. Additionally, it disrupts food systems, contributes to the rise of zoonotic diseases, and exacerbates issues related to food, water, and vector-borne illnesses, alongside mental health concerns. Moreover, climate change erodes key factors that promote good health, such as stable livelihoods, societal equality, and accessibility to healthcare and support networks. These health hazards exacerbated by climate change disproportionately affect marginalized and vulnerable groups, including women, children, ethnic minorities, impoverished communities, migrants, older individuals, and those with pre-existing health conditions.

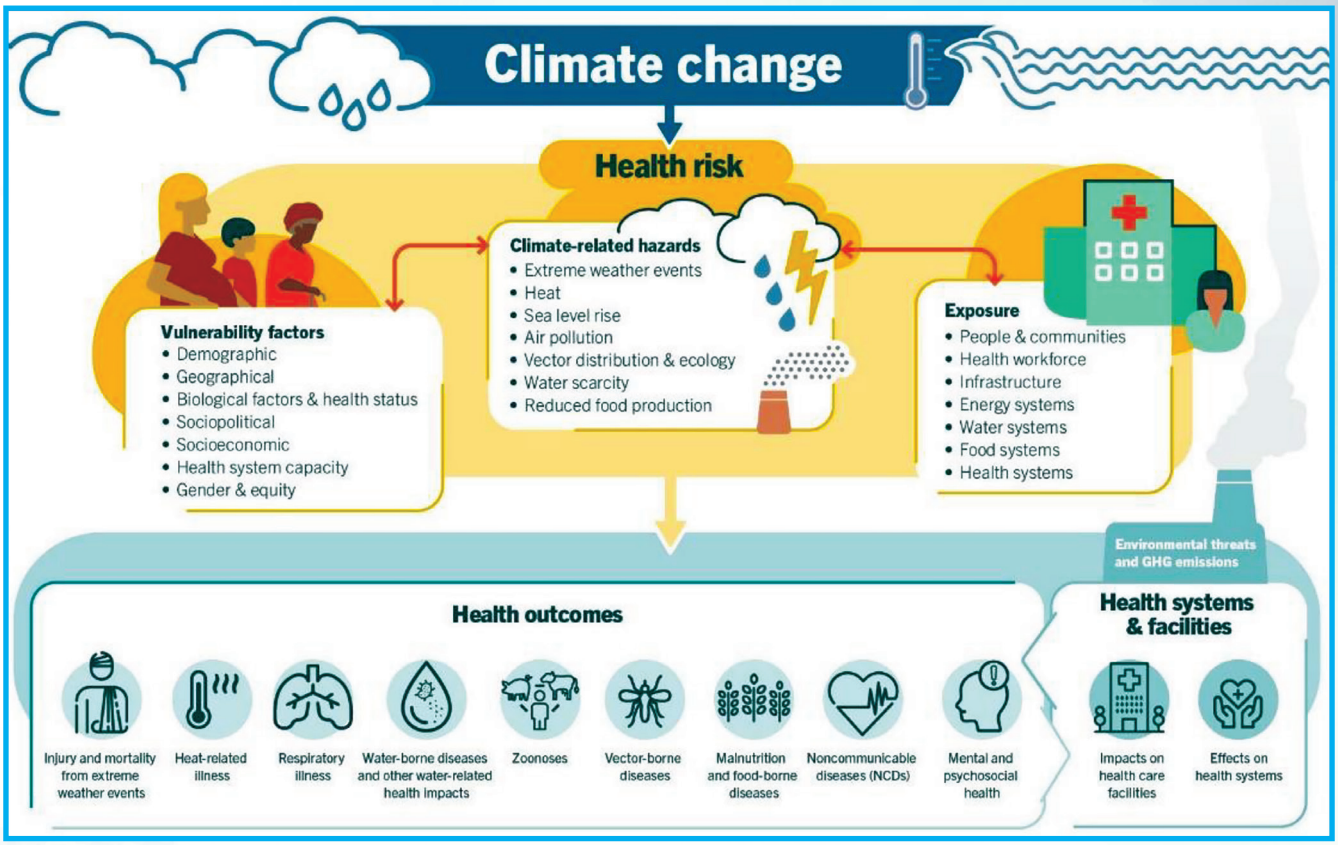


Figure 2: Overview of climate-sensitive health risks, their exposure pathways and vulnerability factors. Source: WHO Fact Sheet on Climate Change and Health

Extreme climatic events also impose a significant financial burden on vulnerable communities. These communities, already grappling with limited resources and socioeconomic challenges, bear the brunt of the economic fallout from climate-related disasters. The United Nations highlights how climate change accelerates financial burdens, particularly affecting those most vulnerable and impoverished.13 For instance, when extreme weather events strike, such as hurricanes, floods, or wildfires, these vulnerable groups often lack adequate insurance coverage or financial reserves to cope with the damages to their homes, businesses, and livelihoods.

The cost of rebuilding and recovery further exacerbates their financial instability, perpetuating a cycle of poverty and vulnerability.

Additionally, studies on reducing the inequitable health and financial burdens of climate change point out that government-provided financial assistance can help compensate individuals for medical expenses incurred during climate events.[14]

❑ Climate change and mental health: evaluating the existing evidence

The evidence indicates that climate change substantially and diversely influences mental health and emotional well-being. The relationship between experiencing the effects of climate change – such as rising temperatures or more frequent and severe extreme weather events – and worsening mental health, even resulting in more suicides, has been well-documented, especially after the COVID-19 pandemic.[15 1]

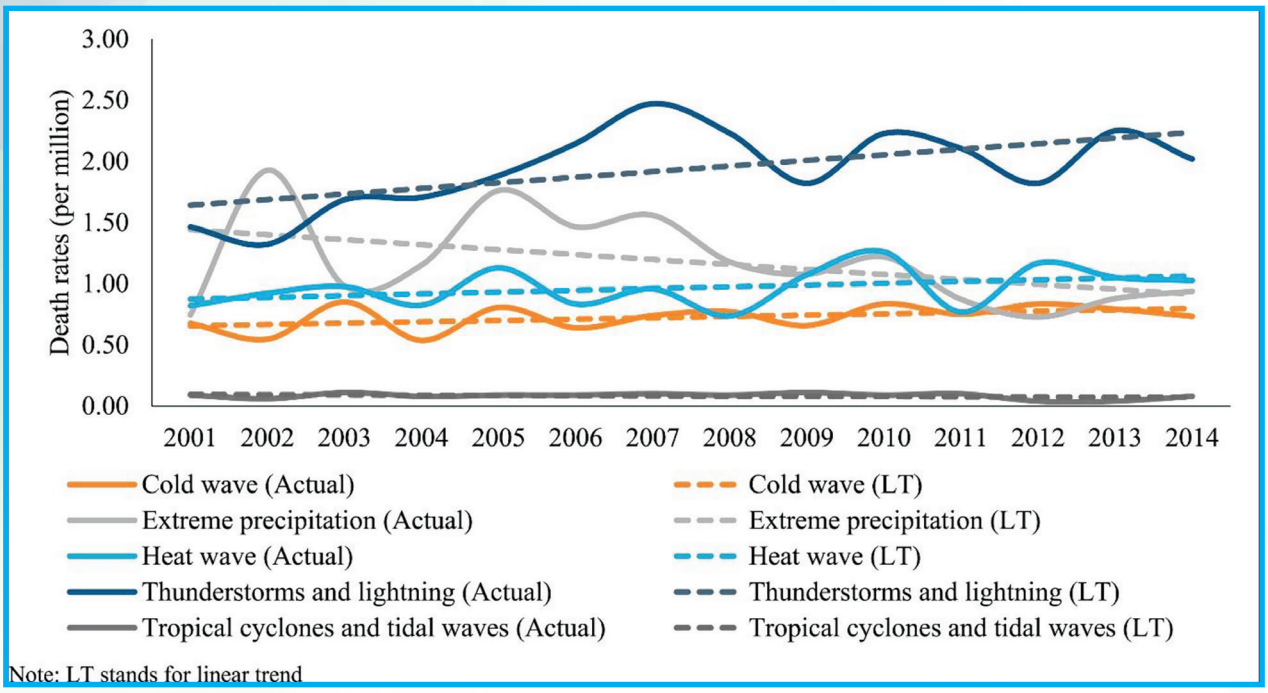


Figure 4: Trend of actual and adjusted death rates (per million) due to different extreme weather events. Source: Mahapatra et al, Weather and Climate Extremes 21, 2018

Other significant impacts of climate change on mental health range from minimal stress and distress symptoms to clinical conditions such as anxiety, depression, post-traumatic stress, and suicidal thoughts.[16]

The impact of climate change on mental health is likely to increase with rising temperatures, which can lead to aggression, violent suicides, and malnutrition.17 Similarly, prolonged winters and reduced sunlight exposure have been shown to result in seasonal affective disorder (SAD) driven by reduced levels of serotonin.[18]

The effects of climate change on mental health are unequally distributed, with vulnerable communities and groups of people who are less able to adapt to climate change being more likely to experience mental health problems.19 That being said, climate change does affect major social determinants of mental health, such as poverty, displacement, and access to mental health services.[20]

Natural disasters such as floods and wildfires can significantly increase the number of people experiencing mental health problems, including post-traumatic stress disorder, depression, and addiction issues.[21]

The delay in studies on climate change and mental health consequences is largely due to the complexity and novelty of this issue. It is also exacerbated by a significant lack of country-level commitments to refine existing health systems that can adapt to mental health and psycho-social well-being concerns. The 2021 WHO survey of 95 countries on health and climate change found that only nine have thus far included mental health and psychosocial support in their national health and climate change plans.[12]

❑ Utilization of mental health solutions by the Indian population

India has a significant mental health burden, with more than 14% of the total population suffering from some form of mental disorder and requiring active therapeutic interventions, as reported in the National Mental Health Survey (NMHS) conducted by the National Institute of Mental Health and Neurosciences (NIMHANS)22. According to a study published in The Lancet, India's contribution to global suicide deaths increased from 25.3% in 1990 to 36.6% in 2016

among women and from 18.7% to 24.3% among men.23 India reported a total of over 1.7 lakh suicides in 2022, nearly one-third of whom were daily wage earners, agricultural laborers, and farmers, according to the National Crime Record Bureau's (NCRB) Accidental Deaths and Suicides in India (ADSI) 2022 report. The National Mental Health Survey (NMHS) found the overall weighted prevalence for any mental morbidity in India to be 13.7% over a lifetime and reported that more than 80% of people in India struggling with mental illness receive no care due to a dearth of capacity and proper infrastructure.[22]

However, the utilization of mental health solutions in India is low, with only 30% of mental health patients receiving help.22 The mental health treatment gap in India varies from 70 to 92% across a range of psychiatric disorders. The mental health infrastructure in India is mainly restricted to large, semi-permanent facilities that serve a small number of people, with only 0.329 mental health outpatient services per 100,000 people and 0.75 psychiatrists for every 100,000 population.[22 23]

The overall availability of qualified mental health personnel in the public and private sector is scarce, with only 898 clinical psychologists and 1,500 psychiatric nurses compared to a demand of 3,000, as reported to the Lok Sabha in 2018. The Indian Psychiatric Society estimates 9,000 psychiatrists in India, with 700 psychiatrists graduating yearly. If India targets having three psychiatrists per lakh people, it will need 27,000 more psychiatrists.24 The demand-supply gap is similarly steep for other mental health professionals such as psychologists, psychiatric social workers, and psychiatric nurses. The cost of accessing mental healthcare in India is high, with private therapy costing anywhere between INR 1,500 to 3000 (USD ~20 to 40) per session. Access to care is limited, particularly in rural areas, which struggle with a deeper stigma associated with mental health. The Government of India has made several policies and programmatic steps to address these concerns, such as the Mental Healthcare Act 2017 of 2017 and the District Mental Health Programme (DMHP), built on the Bellary model, to detect, manage, and treat mental health concerns.

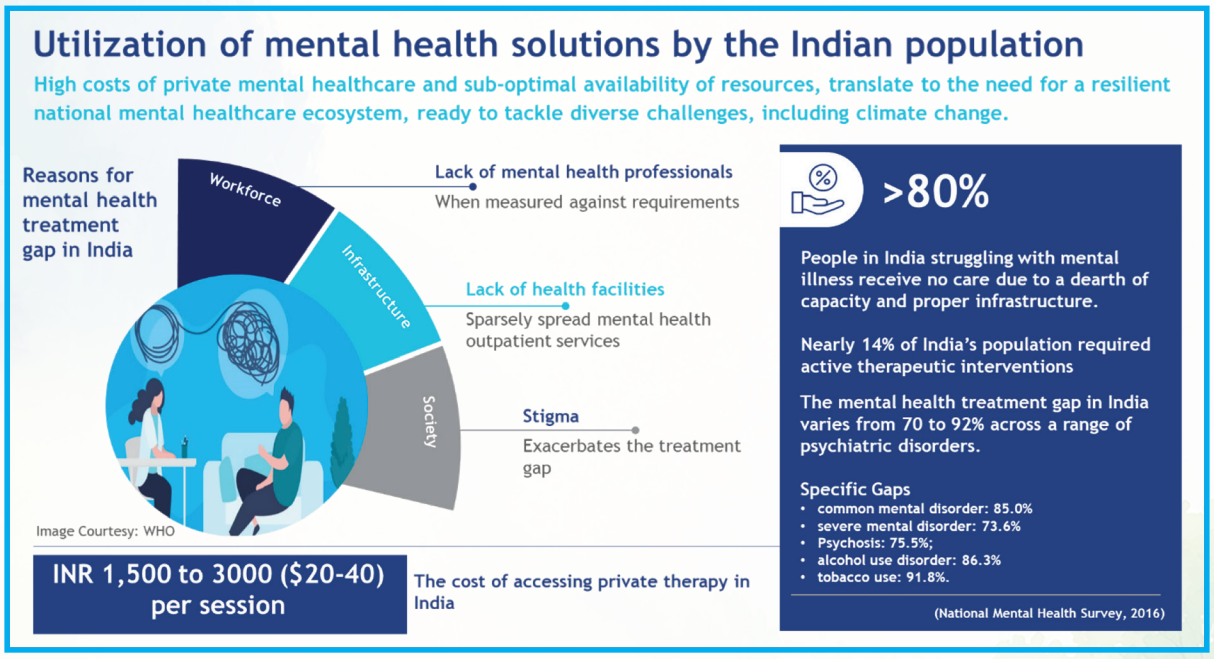


Figure 5: Utilization of mental health solutions by the Indian population, some facts and figures.

However, much more must be done to improve mental health in all aspects of society. The Ministry of Health & Family Welfare Standing Committee, in its report on Mental Health and its Management in Contemporary Times, observed that 'the issues highlighted in the 2015-16 NMHS have remained the same in 2023'. The report noted that there is considerable scope to improve the treatment gap in

the country and identified a lack of mental health professionals, weak mental health infrastructure, and stigma as the reasons for the gap.[24]

The Mental Healthcare Act of 2017 requires the Central Government to establish a Central Mental Health Authority (CMHA) tasked with overseeing the quality of mental health services across India. Similarly, state-level authorities are mandated by the Act. These state authorities are required to form Mental Health Review Boards (MHRBs) to safeguard the rights of certain patients. However, the MoHFW Standing Committee noted that many states have not yet filled essential positions within their Mental Health Authorities or established MHRBs. The Committee suggested developing a tracking system to monitor progress on both fronts to address this.

❑ Post-Covid preparedness of mental health systems for climate risks in India

The COVID-19 pandemic and climate change have intertwined to create a complex and multifaceted challenge for India's mental health system. This section explores the interactions between climate change and COVID-19 and the implications for mental health preparedness in India.

The pandemic coincided with one of the hottest years globally (2020). The effects of climate change have also been observed globally, with implications for community vulnerability to diverse threats.25 COVID-19 has given rise to mental health risks, as physical and mental health illnesses have caused increased risks of survival to millions of people.

The current strategies for preparedness and response to mental health impacts of climate change in India operate in distinct silos. Developing and implementing programs and practices for monitoring and treating mental health issues, training community health workers to deliver services, conducting inventories of available resources, and assessing at-risk populations do not systematically consider the climate change lens. In fact, health system responses to climate shocks such as extreme heat, cold waves, and natural calamities have limited mental components, resulting in sub-optimal to practically non-existent on-ground implementation.

❑ Adaptability of climate-resilient health systems to mental health challenges

The COVID-19 pandemic and climate change have created a complex and multifaceted challenge for India's mental health system. To address these challenges, India must invest in strengthening its mental health system, including developing a robust climate-resilient mental health infrastructure. This will require a multifaceted approach that includes capacity building, public awareness, and the deeper integration of mental health services into primary healthcare systems.

It is imperative to promptly discover avenues for translating climate change and mental health research findings into tangible policies and actions, reinforcing advocacy efforts with empirical evidence and scientific knowledge.

It is also essential for private and public actors and agencies to co-create comprehensive and integrated solutions that tackle the intricate aspects of how climate change affects mental health and well-being, considering the various contexts in which these challenges arise. Addressing these problems requires a policy context managing disaster risk's political and social aspects. Advocacy for climate change mitigation policies and programs, adaptation of existing programs, and implementing evidence-based risk communication interventions are necessary.

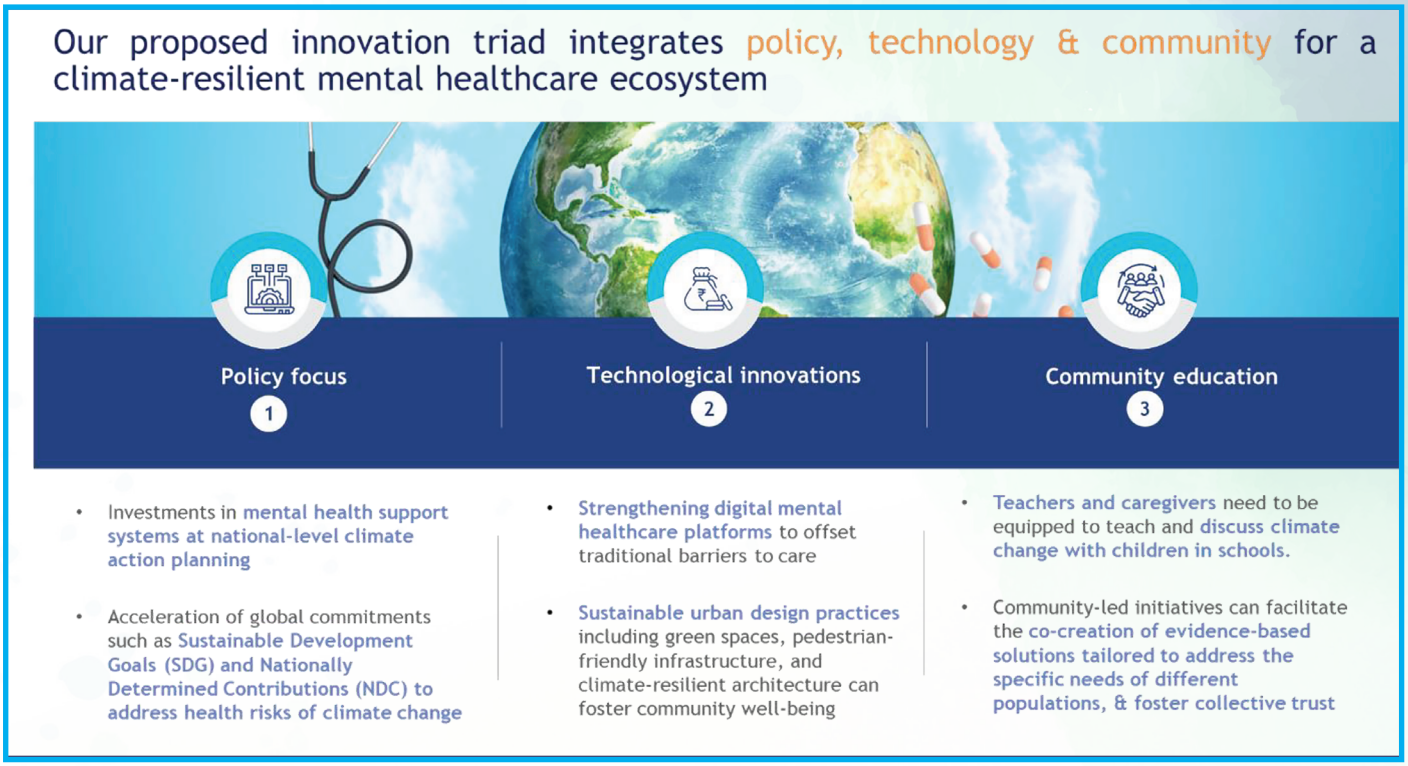


Figure 6: Proposed framework for a climate-resilient mental healthcare ecosystem

Mental health services need to be agile and responsive to the variable mental health effects that disaster survivors may experience. Integrating technological innovations in the healthcare ecosystem can bolster mental health solutions in resource-constricted geographies. For example, Geographic Information Systems can enable mental health providers to locate specific at-risk locations and groups more effectively.26

A comprehensive effort to prevent and treat these problems would also involve advocacy for climate change mitigation by promoting the mental health benefits of environmental conservation and promoting psychological growth and resilience.

❑ Conclusion & Way Forward

In the Indian context, establishing a climate-resilient mental health ecosystem encounters several challenges. Firstly, there exists a pervasive stigma surrounding mental health issues, which inhibits individuals from seeking support and hampers the development of comprehensive mental health policies. High costs of private mental healthcare and sub-optimal availability of resources point to the need for a resilient mental healthcare ecosystem ready to tackle diverse challenges, including climate stressors. Furthermore, the disparate impact of climate change on vulnerable populations, such as those residing in low-lying coastal areas or rural regions lacking adequate healthcare access, underscores the need for targeted interventions to address their unique mental health needs.

Moving forward, several key actions are imperative to foster a climate-resilient mental health ecosystem in India. Firstly, there must be a concerted effort to destigmatize mental health issues through widespread public awareness campaigns and community-based initiatives. Secondly, investments in mental health infrastructure, including expanding mental health services and training healthcare professionals in trauma-informed care, are crucial to enhancing the resilience of the mental health system to climate-related challenges. A comprehensive community-driven, locally-led adaptation of the directives contained in the Mental Health Act,

2017, spearheaded by the State Governments and district administrations, will initiate a much-needed feedback mechanism for impact.

Additionally, integrating mental health considerations into climate change adaptation and disaster response policies will ensure that mental health needs are prioritized and addressed in times of crisis. Lastly, fostering collaboration between government agencies, civil society organizations, and local communities is essential to developing holistic and culturally sensitive approaches to mental health resilience in the face of climate change.

There is also a pressing need for more profound research on climate-resilient mental health systems in the Indian context. Comprehensive studies exploring the intersection of climate change impacts and mental health outcomes are essential to inform evidence-based policies and interventions. This research should investigate the specific vulnerabilities of different population groups, assess the effectiveness of existing mental health services in mitigating climate-induced stressors, and identify best practices for building resilience at individual, community, and institutional levels.

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