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Rethinking Heat Risk in India: Why Felt Heat Matters More Than Temperature Alone

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The summer of 2024 marked a turning point in global climate awareness, with the year officially recorded as the hottest on record. India, already grappling with extreme weather events, experienced record-breaking heatwaves, not just in terms of daytime temperatures but also through a sharp increase in very warm nights. This trend, as highlighted by the World Meteorological Organization, is especially dangerous as it eliminates the body's chance to recover from daytime heat stress, compounding health risks across communities.

Yet, India continues to rely heavily on dry temperature-based thresholds for its heat warnings and mitigation strategies. While helpful, this approach omits a critical component: humidity. In a tropical country like India, where relative humidity frequently exceeds 70% during peak summer months, ignoring this factor results in a severe underestimation of the population's heat exposure. The concept of "felt heat" addresses this gap. It combines air temperature and relative humidity to better reflect the actual thermal discomfort experienced by the human body. Agencies like National Oceanic and Atmospheric Administration (NOAA) in the United States already use this metric to communicate health risks more effectively.

In cities like Kolkata, where average summer humidity reached 74.4% in 2023 and peaked at 81.3% in 2020, the combined effect of high humidity and temperature makes the heat not only uncomfortable but lethal. Recent reporting by the Times of India notes that Kolkata now ranks among the most dangerous metros in India during summer, due to this exact heat-humidity punch.

Felt heat has deeply unequal consequences for India's vulnerable populations. Outdoor workers, including construction labourers, sanitation workers, and gig economy delivery personnel, are on the frontlines of exposure, often working without shade, hydration, or rest. Elderly individuals, children, and pregnant women suffer disproportionately due to reduced thermoregulation. People living in informal settlements face additional burdens: overcrowded housing, poor ventilation, limited access to water, and lack of cooling mechanisms all amplify the impact of extreme heat.

The response to this crisis cannot be confined to healthcare institutions alone. What India needs is a whole-of-society, inter-sectoral approach that links heat mitigation with urban planning, labour policy, water and sanitation, and housing. While cities like Ahmedabad have pioneered low-cost interventions such as reflective cool roofs and shaded bus stops under their Heat Action Plans, these efforts must now evolve into systemic policies that build resilience across sectors.

Felt heat should be the standard metric guiding India's heat response. Incorporating it into early warning systems and city planning will allow for a more realistic understanding of urban thermal stress and enable targeted interventions. Heat resilience must be embedded into affordable housing design, public space development, and infrastructure planning.

India's climate future demands that we stop treating heat as a seasonal nuisance and start recognizing it as a structural hazard. With 2024 serving as a stark warning, the time to adopt a felt heat lens in our risk frameworks is now. Failure to do so would mean continuing to overlook the invisible yet intensifying crisis at our doorstep.

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