



# Against the current: Addressing climate-induced health disparities in India's transgender community

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## ABSTRACT

This study inspects the unique climate change insights and vulnerabilities experienced by transgender individuals, with an emphasis on how gender identity intermediates environmental awareness and adaptive capacity. A cross-sectional quantitative survey was conducted between January and March 2025 in Chennai, Tamil Nadu, involving 167 self-identified transgender individuals recruited through convenience and snowball sampling methods, accomplishing a response rate of 91 %. Data were collected using a structured questionnaire and analysed using descriptive statistics, *t*-tests, and Pearson's correlation via SPSS v26. The results showed a health decline score among participants ( $M = 5.93, SD = 1.27$ ) that was higher than general population norms ( $t(166) = 5.39, p < 0.001$ ), signifying a discriminating health burden attributable to climate-related stressors. Besides, 79.04 % of respondents articulated a lack of sureness in healthcare provider's competency concerning transgender-specific health concerns, and 60.47 % reported recurrent or persistent experiences of social isolation. Pearson's correlation analysis identified a statistically significant positive relationship between transgender identity-related stressors and increased apprehension toward climate threats ( $r = 0.61, p < 0.01$ ).

In addition to quantitative findings, qualitative insights from open-ended responses highlighted three emergent themes: (1) Intersecting Marginalities in Climate Vulnerability, reflecting the layered disadvantages faced during environmental disruptions; (2) Systemic Healthcare Exclusion, emphasizing institutional unpreparedness to meet transgender health needs during crises; and (3) Identity-Driven Climate Awareness, representing a delicate sensitivity to climate risks shaped by social and political marginalization. These findings underscore the importance of recognizing transgender individuals as a distinct demographic within climate vulnerability assessments. The study advocates for the combination of marginalized voices in climate adaptation approaches and public health guidelines to guarantee inclusive, equitable, and responsive frameworks in the aspect of mounting environmental challenges.

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Figures and tables

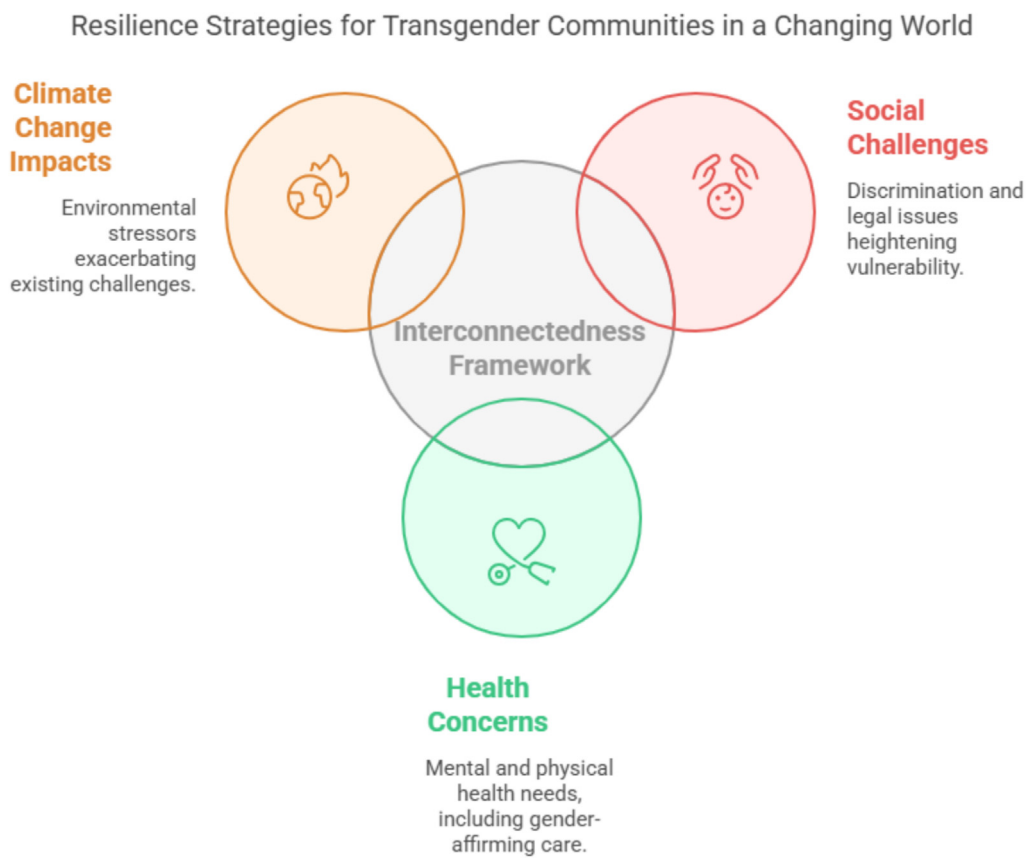


Fig. 1. Conceptual framework.

Climate Change's Impact on Transgender Communities in India

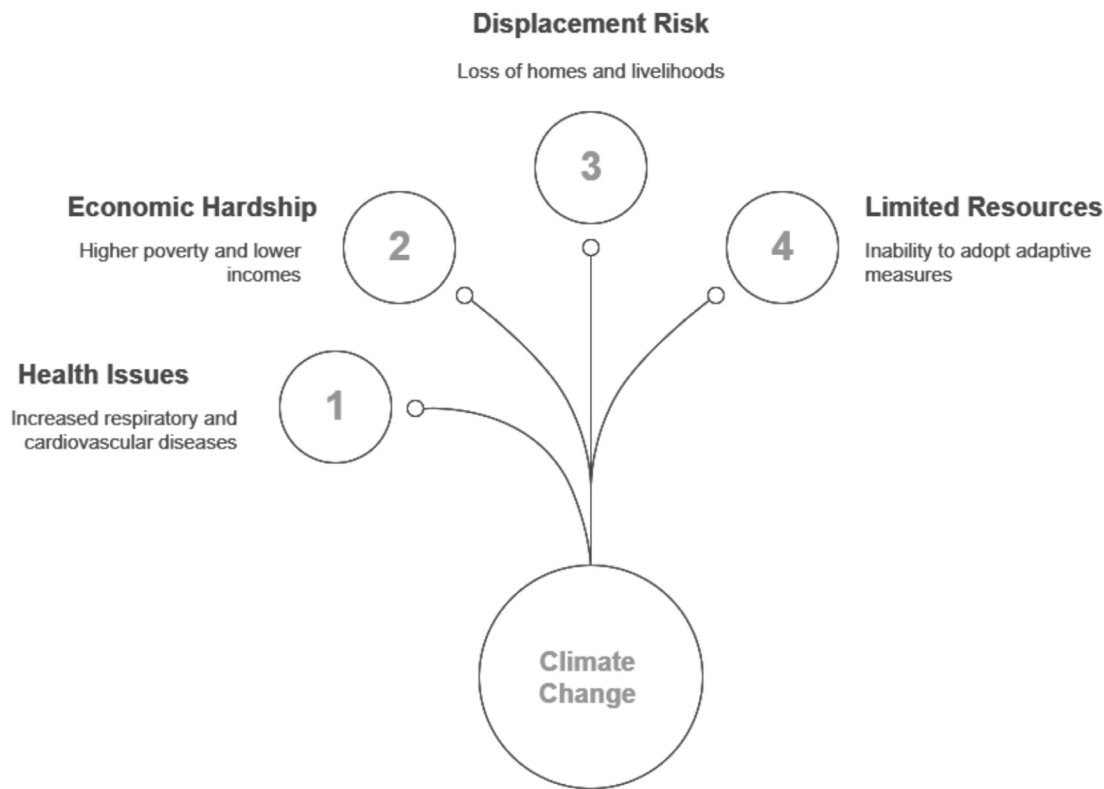


Fig. 2. The impact of climate change.

Table 1  
Transgender health decline.

Metric	Value
Chi-square Statistic	0.632
Degrees of Freedom	2
p-value	0.739
Interpretation	Not statistically significant (p = 0.05)

The distribution of responses to the question regarding healthcare provider knowledge revealed that only 40.15 % of participants believed providers were adequately informed about transgender health needs, while 35.29 % responded “No” and 44.56 % indicated “Not Sure.” Although the chi-square goodness-of-fit test ( $\chi^2 = 0.642$ ,  $df = 2$ ,  $p = 0.739$ ) found no statistically significant deviation from a uniform distribution, the practical implications of these findings are substantial.

The collective political engagement within the transgender community may serve as a powerful force in shaping climate perceptions. Through activism and advocacy, transgender individuals are often exposed to discussions about environmental justice, climate vulnerability, and the need for systemic change, which primes them to be more aware of climate-related threats. This heightened awareness, combined with the lived experiences of marginalization, may explain why transgender identity is such a strong predictor of climate change beliefs and concerns. The political and social activism within the transgender community not only makes individuals more conscious of the issues but also encourages them to take these threats seriously, translating into increased worry about the future impacts of climate change.

This connection between transgender identity, activism, and climate awareness suggests that social identity plays a critical role in shaping

how people perceive global challenges. Transgender individuals, by virtue of their marginalized status, may be more likely to identify with other vulnerable populations, such as those disproportionately affected by climate disasters, including low-income communities and people of color. This sense of shared vulnerability may foster empathy and solidarity, further strengthening their commitment to addressing climate change and environmental justice. The findings of this study emphasize the need for future research to delve deeper into the specific climate views of transgender individuals, as well as the broader LGBTQ+ population. While the current study identifies important trends, there is much more to explore regarding how different aspects of transgender identity, such as race, socio-economic status, and geographical location, may influence climate perceptions. Additionally, understanding the role of intersectionality in shaping these views could provide valuable insights into how multiple forms of marginalization interact to influence public opinion on climate change.

**CRedit authorship contribution statement**

**S. Gnana Sanga Mithra:** Methodology, Investigation, Conceptualization.

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## Declaration of interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

## Data availability

Data will be made available on request.

## Further reading

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