

## RESEARCH BRIEF SERIES

# HEALTH AND EXTREME WEATHER

*This research brief is part of an award program designed to address gaps in knowledge related to extreme weather disasters—such as wildfires, floods, extreme heat, and severe storms—that pose significant health risks, particularly for populations already experiencing health challenges.*

## AWARD RECIPIENTS

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**AWARD AMOUNT:**  
\$50,000

## MENTAL HEALTH IMPACTS OF THE 2024 OHIO TORNADOES ON PEOPLE WITH SOCIOECONOMIC DISADVANTAGES

### OVERVIEW

Between January and May 2024, Ohio experienced some of the most severe weather in its history, with 66 confirmed tornados, 123 other damaging wind events, and 65 severe hailstorms impacting the region. This study explored the mental health impacts of these events, with a focus on anxiety, depression, and post-traumatic stress disorder (PTSD) among socioeconomically disadvantaged communities. The mixed-methods approach involved surveys (N=521) and interviews (N=20) with adults from low-income households in Franklin County, Ohio.

### KEY FINDINGS

- Participants who experienced greater impacts from the 2024 weather events—which included directly experiencing physical harm or property damage or knowing someone who did—reported higher levels of anxiety, depression, and PTSD symptoms.
- Highly impacted participants also had higher perceptions of risk severity and risk possibility in comparison to those experiencing fewer impacts.
- Interview data suggest that weather-related stress was compounded by financial strain and inadequate access to mental health resources.
- Participants described several coping mechanisms to manage their mental health challenges, including mindfulness



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and deep breathing exercises. Some residents also reported using alcohol, drugs, or other substances to deal with stress.

### RESEARCH IMPLICATIONS

People in low-income communities are at higher risk for adverse mental health outcomes after severe weather events. A multi-faceted approach is needed to address their mental health needs during disasters: First, barriers that prevent people in low-income communities from accessing existing mental health resources should be removed. Second, community-based organizations and local government agencies should be strengthened so that they can deliver culturally competent mental health services and enhance healthy coping skills. Third, during severe weather seasons, community resources—including food pantries and utility assistance programs—should be expanded so that they are able to alleviate financial pressures and ensure that residents have consistent access to essential services.

**Full Report:** Abukhalaf, A. H. I., Chavan, V. D., & Kodela, H. (2025). *Mental Health Impacts of the 2024 Ohio Tornadoes on People With Socioeconomic Disadvantages*. (Natural Hazards Center Health and Extreme Weather Report Series, Report 3). Natural Hazards Center, University of Colorado Boulder. [hazards.colorado.edu/health-and-extreme-weather-research/mental-health-impacts-of-the-2024-ohio-tornadoes-on-people-with-socioeconomic-disadvantages](https://hazards.colorado.edu/health-and-extreme-weather-research/mental-health-impacts-of-the-2024-ohio-tornadoes-on-people-with-socioeconomic-disadvantages)