

XIANG YAN
Florida State University

SARA GARCE
Florida State University

SHIH-KAI HUANG
Florida State University

KATELYN SOWELL
Florida State University

CATHERINE CAMPBELL
Florida State University

SHANGKUN JIANG
Florida State University

ELIANA DUARTE
Florida State University

XILEI ZHAO
Florida State University

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.

TRANSPORTATION AS A SOCIAL DETERMINANT OF HEALTH DURING HURRICANE IDALIA

OVERVIEW

On August 30, 2023, Hurricane Idalia hit the Big Bend region in Florida, an expansive rural area with low population density. This study examined how vehicle ownership, disability, and other factors impacted residents' decision-making about evacuation and access to food and health care after the hurricane. This mixed methods study included a survey with a convenient and geographically stratified sample of people living in impacted counties (N=327) and semi-structured interviews with a subset of survey respondents (N=12).

KEY FINDINGS

- Residents with previous evacuation experiences were the most likely to evacuate. The next most-likely-to-evacuate group were residents with high *operational risk perception*, which included measures of being concerned about expenses, transportation limitations, and traffic incidents.
- The positive influence of prior evacuation experience and risk perception on evacuation decisions was more pronounced among those with more frequent medical visits in the last year.
- Participants with transportation and food insecurity had less access to disaster aid provided by the Federal Emergency Management Agency, the Red Cross, and community-based organizations.



August 2023: Cars plow through standing water in the aftermath of Hurricane Idalia. Photo Credit: Shutterstock.

RESEARCH IMPLICATIONS

Risk perception alone was not the primary driver of evacuation decision-making, suggesting that respondents may not be sufficiently aware of the risks they faced. Hurricane forecasting should share specific, localized hurricane-related information using a variety of communication channels to enhance awareness. There is also a need for targeted distribution of resources to address disparities in hurricane relief and recovery efforts. Emergency response teams must determine where and how to distribute resources to ensure access among vulnerable segments of the population, including those who face transportation barriers.

Full Report: Yan, X., Garces, S., Huang, S. K., Sowell, K., Campbell, C., Jiang, S., Duarte, D., & Zhao, X. (2024). *Transportation as a Social Determinant of Health During Hurricane Idalia*. (Natural Hazards Center Health and Extreme Weather Report Series, Report 1). Natural Hazards Center, University of Colorado Boulder. hazards.colorado.edu/health-and-extreme-weather-research/transportation-as-a-social-determinant-of-health-during-hurricane-idalia