

# New study links repeated hurricane exposure to adverse psychological symptoms

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Repeated exposure to hurricanes, whether direct, indirect or media-based, is linked to adverse psychological symptoms and may be associated with increased mental health problems, according to a first-of-

its kind study led by University of California, Irvine researchers.

Findings, published online today in *JAMA Network Open*, are critical for understanding the psychological impacts of recurring natural disasters, particularly in the context of the escalating threat of climate change. Rather than individuals becoming acclimated to repeated exposure to disasters, results demonstrated that over time, responses to subsequent hurricanes become more negative.

"We show that people are not likely to habituate, or get used to, climate-related natural disasters that will increase in frequency and severity in the years to come. Our results suggest a potential mental health crisis associated with those who themselves directly experienced the storm or knew someone who did, as well as those who spent several hours engaged with media about the hurricane," said Dana Rose Garfin, UCI assistant adjunct professor of nursing and [public health](#), and first author of the report.

The first-of-its-kind longitudinal study was conducted by Garfin and her colleagues, Roxane Cohen Silver, Distinguished Professor of psychological science, medicine and health; E. Alison Holman, professor of nursing; both from UCI and principal investigators of the research; Rebecca Thompson, Ph.D., UCI postdoctoral scholar in [psychological science](#); and Gabrielle Wong-Parodi, Ph.D., assistant earth system science professor, and center fellow at the Woods Institute for the Environment, Stanford University. The team assessed Florida residents in the hours before Hurricane Irma made landfall and examined those same individuals again following Hurricanes Irma and Michael to detect any mental health changes that might have occurred over time. Both were Category 5 storms that hit in succession—Hurricane Irma in September 2017 and Hurricane Michael in October 2018.

The team found that repeated exposure to the threat of catastrophic

hurricanes was linked to symptoms of post-traumatic stress, depression, anxiety, and ongoing fear and worry. In turn, these psychological symptoms were associated with greater social- and work-related impairment, including difficulty interacting with others, and performing work tasks and other daily activities.

"Some distress is normal following traumatic and extremely stressful events," Garfin said. "Most people will recover and display resilience over time. However, as climate-related catastrophic hurricanes and other [natural disasters](#) such as wildfires and heat waves escalate, this natural healing process may be disrupted by repeated threat exposure. Moreover, we followed people longitudinally over two [hurricane](#) seasons, and our data show that as people experience multiple occurrences over time, psychological symptoms accumulate and intensify, potentially portending a mental health crisis."

Anxiety can be an adaptive response to disasters and may motivate people to take protective action in preparation for the next event, team members said, and recommend that future research explore how to leverage that reaction in ways that do not increase mental health ailments. They also believe the strong link between media engagement and distress suggests that social channels and mainstream outlets can play a critical role in effectively communicating the risk of increased distress with repeated threat exposure.

**More information:** Dana Rose Garfin et al, Association Between Repeated Exposure to Hurricanes and Mental Health in a Representative Sample of Florida Residents, *JAMA Network Open* (2022). [DOI: 10.1001/jamanetworkopen.2022.17251](https://doi.org/10.1001/jamanetworkopen.2022.17251)

Provided by University of California, Irvine

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