

THE IMPACT OF NATURAL DISASTERS ON HEALTH IN THE UNITED STATES

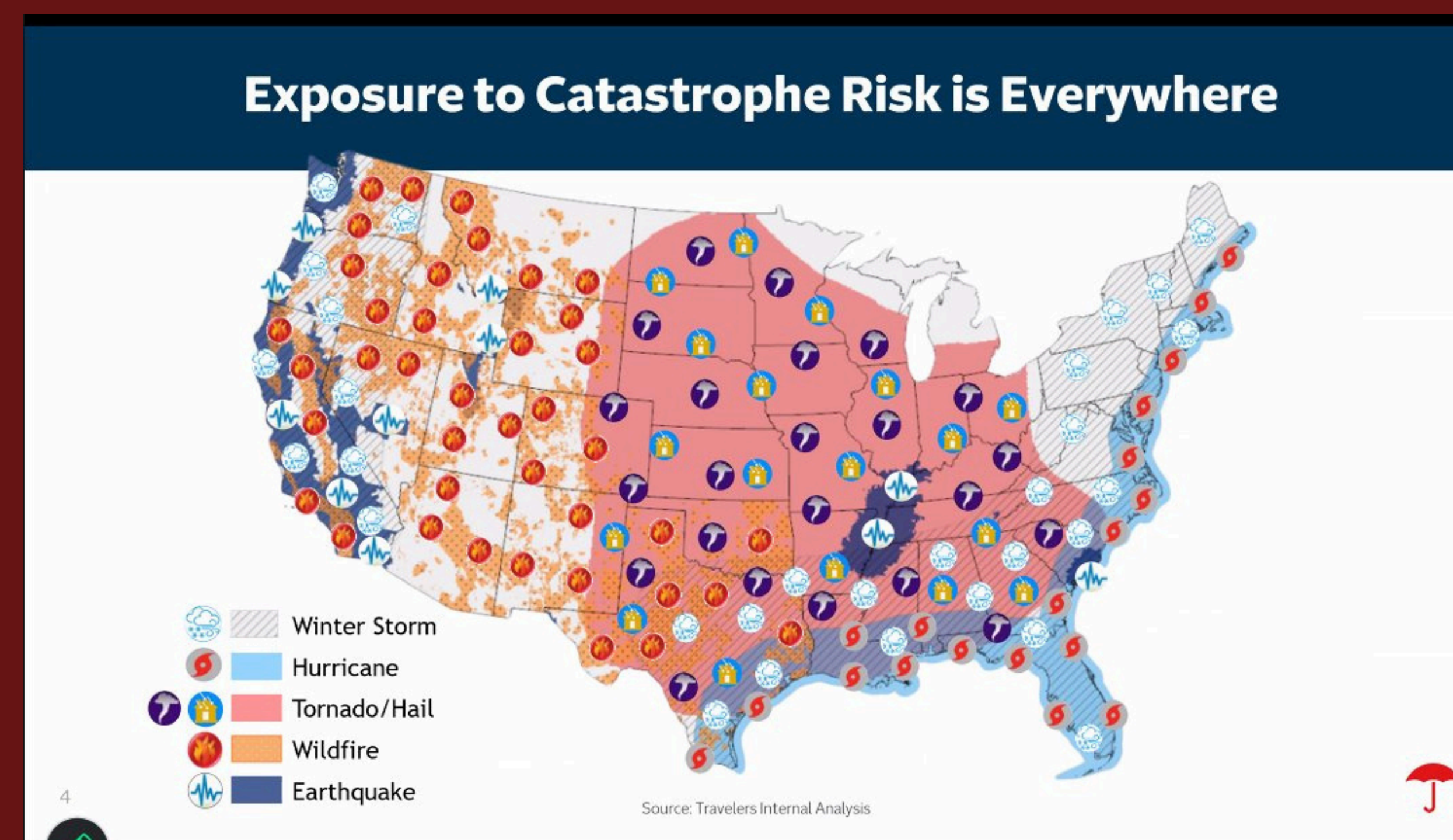
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Abstract

Through an extensive review of research across multiple bodies of literature, this project analyzes the health implications of natural disasters across adulthood, specifically adults, and the elderly. Natural disasters cause significant loss and disruption, yet their effects on human health are often overlooked. These events are associated with a wide range of health issues, including physical injuries, the worsening of chronic conditions, and mental health challenges such as post-traumatic stress disorder, depression, and anxiety, particularly among adolescents.

Many individuals experience an increase in health-related problems following exposure to a natural disaster; however, access to adequate healthcare and health insurance coverage for affected populations is frequently limited. The health consequences of natural disasters remain a persistent and under-addressed issue, contributing to declines in both individual and community well-being. These effects may appear immediately after a disaster or emerge months later.

This project examines health outcomes across the lifespan by analyzing multiple graphs and data sets that illustrate how health impacts vary by age group. It also explores barriers to treatment following diagnosis in post-disaster settings. While preliminary, the findings suggest a direct association between natural disasters and increased prevalence of adverse health outcomes. This research underscores the need for improved healthcare access and support systems to address both the short- and long-term health consequences of natural disasters.



This graphic illustrates the geographic distribution of natural disasters across the United States and highlights regions with higher exposure. It provides context for understanding how environmental risk patterns contribute to varying health outcomes nationwide.

Adult and Elderly Impacts

- Natural disasters such as hurricanes, floods, wildfires, and winter storms significantly affect adult health, especially among older adults, by increasing cancer risk, worsening chronic conditions, and disrupting continuity of care.
- About one in five people in post-disaster settings experience a mental health disorder, including depression, anxiety, and PTSD. Crises can also increase substance misuse, with overdose rates rising by up to 42% during COVID-19.
- Exposure to wildfire smoke, extreme temperatures during power outages, contaminated floodwater, and toxic mold increases the risk of respiratory, cardiovascular, kidney, and other chronic diseases, particularly for those with pre-existing conditions.
- Older adults are especially vulnerable because many rely on electricity for essential medical equipment. After Hurricane Helene in North Carolina, many elderly households lost power, putting high risk individuals at serious risk.
- Research after Hurricane Katrina found that breast cancer patients experienced more treatment interruptions and were more likely to die within 10 years compared to similar patients not exposed to the disaster.
- Disruptions in routine care increase hospitalization rates among older adults, especially those living in poverty or managing chronic illnesses.
- Mortality data show disproportionate impact on older adults. During Hurricane Katrina, people age 75 and older made up about 6% of New Orleans' population but accounted for 50% of deaths. In the 2018 Camp Fire, 71 of 84 fatalities were age 60 or older. During the 2021 Texas winter storm, adults age 60 and older accounted for 60% of the 246 deaths.

Accessibility to Health Care following a Natural Disasters

- 170+ U.S. hospitals are at risk of severe flooding, putting patients and hospital workers in danger.
- Disasters worsen health disparities; during the 2025 L.A. wildfires, West Altadena, a historically Black neighborhood, received fewer fire trucks and had the highest death toll.
- \$1.7B in disaster-prep grants were canceled in March 2025, reducing support for extreme weather readiness and air/water quality improvements.
- Older adults with cancer are highly vulnerable; CDC 2016 reports 22.4% of ages 65–74 and 30.7% of 75+ have cancer, making treatment disruption during disasters critical.
- Low-income and communities of color face disproportionate harm, with historical segregation and redlining placing many in high-risk, low-infrastructure areas. Poor households may sacrifice healthcare or education, and rural areas face isolation and limited medical access.
- Hurricanes cause long-term mortality and disruption, particularly for Black populations, affecting infrastructure, medical supply chains, emergency response, and mental health for years after events like Hurricane Katrina.

Distribution of exposure to hurricane-related stressors (weighted N=797)

	New Orleans Metro		Remainder of Hurricane Area		Total	
	%	(se)	%	(se)	%	(se)
Property Loss	60.4	(2.4)	48.1	(2.8)	52.4	(2.0)
Physical Adversity	36.1	(2.4)	41.3	(2.7)	39.5	(2.0)
Housing Adversity	46.6	(2.5)	31.2	(2.5)	36.5	(1.9)
Psychological Adversity	24.3	(2.2)	23.9	(2.4)	24.1	(1.7)
Income Loss	21.5	(2.0)	19.7	(2.2)	20.3	(1.6)
Loved One Victimized	17.7	(1.9)	13.8	(1.9)	15.2	(1.4)
Death of a Loved One	18.3	(2.0)	12.6	(2.0)	14.6	(1.5)
Physical Illness or Injury	11.0	(1.6)	14.0	(1.9)	13.0	(1.4)
Victimization	10.5	(1.6)	7.9	(1.6)	8.8	(1.2)
Life-Threatening Experience	4.2	(1.1)	2.0	(0.8)	2.8	(0.6)
Number of Stressors						
1–2	42.2	(2.4)	46.3	(2.8)	44.9	(2.0)
3–4	29.1	(2.2)	23.0	(2.3)	25.1	(1.7)
5+	15.5	(1.9)	11.6	(1.7)	13.0	(1.3)
Any	86.8	(1.6)	80.9	(2.2)	83.0	(1.6)

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This table presents the distribution of hurricane-related stressors among affected populations, comparing the New Orleans metro area to the remainder of the hurricane region. It highlights the prevalence of property loss, physical and psychological adversity, and other stressors that contribute to significant short- and long-term health impacts.

Conclusion

- While ongoing, the analysis shows consistent health consequences of natural disasters across adulthood, with distinct but serious risks for each group. Adults face chronic illness complications, stress disorders, and increased substance misuse, while older adults experience the highest rates of severe illness and mortality due to medical vulnerability, medication dependence, and limited mobility.
- Without timely intervention, both physical and mental health effects can persist long after the disaster, creating long-term and potentially intergenerational consequences.
- Policy should guarantee access to comprehensive post-disaster services, including medical care, counseling, substance misuse treatment, mobile clinics, and age-targeted support programs. Early intervention is critical to prevent worsening conditions.
- A targeted low-income intervention team should support impoverished communities and individuals unable to access care independently. Sustained funding is essential to ensure equitable recovery and survival for vulnerable populations, particularly low-income households and older adults.

METHODS

The methods used in this research project involved collecting and analyzing data from multiple case studies and scholarly sources examining the health impacts of natural disasters within the United States. The project relied on credible organizations and databases, including the World Health Organization (WHO), the U.S. Department of Education, SAMHSA, and other peer-reviewed and government-supported sources. These materials were reviewed to identify and evaluate the physical, mental, and behavioral health effects associated with disaster exposure, with particular attention to long-term outcomes and vulnerable populations.

Acknowledgement and References

A special thank you to Professor Patricia Born for her guidance and support throughout the development of this research project. Her instruction and feedback were instrumental in shaping the direction and depth of this work. An additional thank you to Florida State University for providing the academic environment and resources that supported this research and made its completion possible.

