

MetroHealth Medical Center

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Abstract Submission Form

Poster Title: Prevalence and Impacts of Weather and Climate Disasters in the U.S.

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Category: PHERI

The US is experiencing more frequent and intense natural disasters as a result of climate change. Previous studies indicate that such disasters disproportionately impact racial minorities, lower-income communities, the elderly, and those with disabilities. However, most prior research is based on individual disasters or specific types of disasters, and the literature on displacement due to disasters in the US is limited. We sought to develop comprehensive and nationally representative estimates on the extent to which any type of weather and climate disaster led to displacement from home, the characteristics of those impacted, and the impacts they experienced.

We pooled data across nine independent survey samples from the U.S. Census Bureau Household Pulse Survey from December 9, 2022, to August 7, 2023. To create nationally representative estimates, we used balanced repeated replication weights and Fay's adjustment of 0.5 for variance estimation. We used the Rao-Scott correction for weighted chi-square tests to examine the univariate relationships between dependent variables (displacement and impacts), and independent variables (socio-demographics, social drivers of health, and natural disasters).

In our weighted sample of 240,849,010 adults, 1.5% (n=3,611,923) were displaced from their home in the past 12 months because of a natural disaster. Racial minorities, the poor, and those with adverse social drivers of health were more likely to report displacement, indicating that climate change may exacerbate existing health disparities. In addition, elderly individuals, children, and people with disabilities were more likely to be displaced. Over a third (35.6%) of the population displaced was due to hurricane. Long-term displacement (more than 6 months or never returned home) was highest for fire (43.2%). Households that experienced multiple disasters in the past year reported the highest proportion of property damage (60.1%), food shortage (50.4%), water shortage (46.1%), unsanitary conditions (49.6%), feeling isolated (58.7%), fear of crime (49.2%), and scams (62.5%).

Strengths of this study include a large, nationally representative sample; focus on displacement as an important adverse outcome; and examination of a variety of potential correlates. Study limitations include reliance on self-reported data, and our cross-sectional design limits our ability to draw causal inference. Nevertheless, addressing social determinants of health and other vulnerability factors may help improve disaster preparedness and mitigate post-disaster impacts. Disaster management will need to consider a new norm in which population experiencing multiple disasters is likely to grow, escalating the scale and severity of impacts.