

# Post-disaster Vulnerabilities & Resilience of Older Adults



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PUBLIC HEALTH

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# Topics for today

1. How are older adults vulnerable to climate-related disasters?
2. What makes older adults resilient to climate-related disasters?
3. Who among older adults are most vulnerable and would benefit from programming?

**Older adults are vulnerable to disaster.**

# Vulnerability of Older Adults to Disasters & Climate Change

- Growing number of older adults living in high-risk areas prone to hurricanes, heatwaves, wildfires, blizzards and flooding<sup>1</sup>
- Older adults are vulnerable to exposure and consequences of disaster due to chronic illness, mobility problems and depleted social networks<sup>1</sup>
- Among all age groups, older adults are the least prepared for disasters, are the most at-risk during all phases of a disaster (e.g., mitigation; preparedness; response; recovery), and have the highest rate of disaster-related deaths<sup>1</sup>

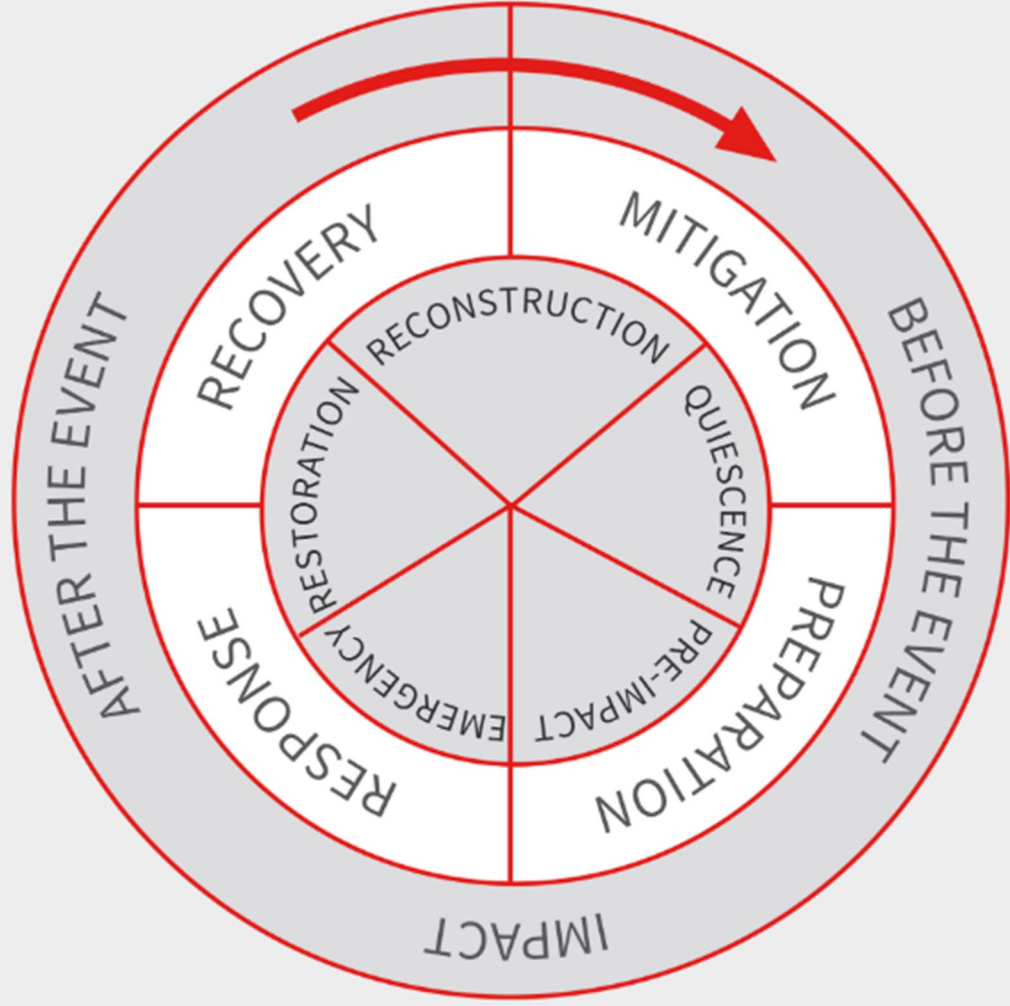


**Older adults** are vulnerable to disaster.

*What do we mean by “older adults?”*

Older adults are **vulnerable to disaster**

*How does vulnerability vary depending on stage of disaster?*



# Post-disaster housing & Recovery of Older Adults after Hurricane Sandy<sup>2</sup>

- Explored the effects of social and environmental disruption on emergency housing transitions and self-reported recovery
- Length of displacement, number of places stayed after evacuation, who older adults stayed with while displaced and self-reported recovery
- Analyses examined post-Sandy housing transitions and recovery of the young-old (55-64) mid-old (65-74), and old-old (75+) compared with younger adults (19-54)



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Original Article

## Housing Transitions and Recovery of Older Adults Following Hurricane Sandy

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Decision Editor: Deborah Carr, PhD

### Abstract

**Objectives:** This study explores the effects of social and environmental disruption on emergency housing transitions among older adults following Hurricane Sandy. It is based upon the Sandy Child and Family Health (S-CAFF) Study, an observational cohort of 1,000 randomly sampled New Jersey residents living in the nine counties most affected by Sandy.

**Methods:** This analysis examines the post-Sandy housing transitions and recovery of the young-old (55–64), mid-old (65–74), and old-old (75+) compared with younger adults (19–54). We consider length of displacement, number of places stayed after Sandy, the housing host (i.e., family only, friends only, or multi-host), and self-reported recovery.

**Results:** Among all age groups, the old-old (75+) reported the highest rates of housing damage and were more likely to stay in one place besides their home, as well as stay with family rather than by themselves after the storm. Despite this disruption, the old-old were most likely to have recovered from Hurricane Sandy.

**Discussion:** Findings suggest that the old-old were more resilient to Hurricane Sandy than younger age groups. Understanding the unique post-disaster housing needs of older adults can help identify critical points of intervention for their post-disaster recovery.

**Keywords:** Disaster, Environment, Housing, Recovery

Hurricane Sandy was one of the largest storms on record, sweeping through the eastern seaboard of the United States in August 2012 with a massive diameter twice the size of Hurricane Katrina. As with most storms of such magnitude the principal threats were from wind and water. This was exacerbated in the case of Sandy since the hurricane struck at a particularly dangerous time: Sandy's landfall coincided with a high-tide cycle higher than normal due to a full moon. The storm's extremely low pressure enhanced wind speeds from the northeast, causing water to back up along the coasts, bays, and harbors of the eastern seaboard during multiple high-tide cycles. These two effects led to a record-setting storm surge along the New Jersey coastline with water up to eight feet above ground level in some locations, with

the worst flooding in Monmouth, Ocean, and Middlesex Counties (NOAA, 2013). Flooding also pushed water into New York Bay and up the Hudson and Raritan Rivers, causing massive flooding in Jersey City, Hoboken, and Sayreville (Blake, Kimberlain, Berg, Cangalosi, & Beven, 2013). In these areas, homes were washed off their foundations, boardwalks were destroyed, and cars and boats were carried inland by the raging water. Sandy led to roughly \$1 billion in damages to power and gas lines, \$3 billion in damages to water, sewer, and sewer systems, and nearly \$6 billion in housing damages (Rutgers, 2013). According to insurance claims and lost income, the financial impact of Sandy on New Jersey residents totaled \$7.8 billion, hitting low- and moderate-income households particularly hard (NJ Community Affairs, 2013).



## The “Oldest Old” (75+) after Hurricane Sandy...

- Reported the highest rates of housing damage
- More likely to evacuate
- More likely to stay with family rather than by themselves
- More likely to have reported that they recovered from Hurricane Sandy
- Suggest more resilient to Hurricane Sandy than younger age groups

# Mobility and Long-term Mental Health Recovery after Hurricane Katrina<sup>3</sup>

 Check for updates



Article

## The detrimental effect of high mobility on long-term mental health trajectories following Hurricane Katrina

International Journal of Mass  
Emergencies & Disasters  
2023, Vol. 41(1) 121–132  
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Alexis Merdjanoff<sup>1</sup>, Sarah Friedman<sup>1</sup>, Rachael Piltch-Loeb<sup>1</sup>  
and David M Abramson<sup>1</sup>

### Abstract

This article uses longitudinal data from the Gulf Coast Child and Family Health Study to examine the impact of residential mobility on the long-term mental health trajectories of individuals displaced or severely impacted by Hurricane Katrina. Analyses begin with a descriptive understanding of residential mobility post-Katrina, including an explanation of who moved and how often in the 13 years after the storm, and determine which social groups were more likely to experience residential mobility than others. Secondly, it builds on these descriptive results by examining how residential mobility can influence the mental health of disaster survivors over time. Lastly, analyses determine how residential mobility rates differ depending on various social characteristics, and how such relationships influence mental health recovery. Results demonstrate that there is a statistically significant relationship between high rates of residential mobility and mental health recovery, and that particular social characteristics increase the risk for high residential mobility.

### Keywords

Disasters, mental health, displacement, residential mobility

### Introduction

Hurricane Katrina struck the Gulf Coast more than 15 years ago, leaving behind a path of devastation and destruction that remains unmatched in modern U.S. history. The size and strength of Katrina led to the largest displacement since the 1930s dust bowl migration with approximately 1.5 million people evacuating the Gulf Coast region prior to landfall (Groen and Polivka 2010). The hurricane was unusual in that residents did not immediately return to their homes following evacuation and often found themselves displaced for months or years following the storm (Merdjanoff et al. 2022; Nigg, Barnshaw, and Torres 2006). Such high levels of displacement consequently led to unprecedented rates of forced migration and residential mobility with many survivors moving three or four times to states as far away from the Gulf Coast as Colorado, Georgia, Missouri, South Carolina, and Texas (Peek and Weber 2012). The economic vulnerability of the Gulf Coast population—coupled with extreme variation in displacement locations—made tracking movement in the years following Katrina and understanding its impact on recovery extremely complex (Goff et al. 2023). Prior research suggests that residential mobility is a crucial mechanism to examine in order to understand the true consequences of disasters and the subsequent mental health impact (Fussell, Sastry and VanLandingham 2010; Merdjanoff et al. 2022; Peacock et al. 2014, 2017).

In addition to understanding general patterns of residential mobility following Katrina, it is also important to consider how social inequality can shape post-disaster forced migration and residential mobility (Frailing et al. 2007; Oliver-Smith 2006). Katrina revealed that while a storm might strike a particular area and affect a large population, differences in socio-economic status, social support, and geography could mean that survivors have profoundly different experiences of the same event (Curtis, Mills and Leitner 2007; Elliott and Pais 2006; Fussell, Sastry and VanLandingham 2010; Lowe, Chan and Rhodes 2010; VanLandingham 2015; Waters 2016). Preexisting inequalities relating to race, class, gender, and age might lead to different rates of forced migration and residential mobility, subsequently stalling the recovery

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- Older adults (65+) had high rates of mobility after Katrina
- Reported the highest mental health scores among all age groups over ten-year study period
- Supports recent findings that older adults are more mentally resilient to disaster exposure than younger age groups (i.e., the inoculation hypothesis)

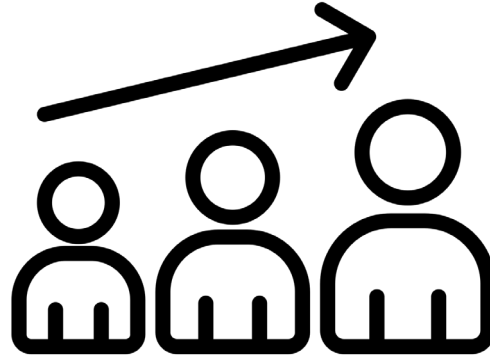
A map of the state of Florida is shown, overlaid with a color-coded scale representing damage levels. The scale ranges from red (highest damage) to green (lowest damage). The coastal areas, particularly the panhandle and the central-eastern coast, are predominantly red and orange, indicating significant damage. The interior and western parts of the state are mostly green and yellow, indicating less damage. Numerous black circles with white outlines are scattered across the map, primarily concentrated along the coast and in the central-eastern regions, representing the locations of the study participants.

# Hurricane Ian Older Adult Recovery : A Longitudinal In-depth Interviewing Study

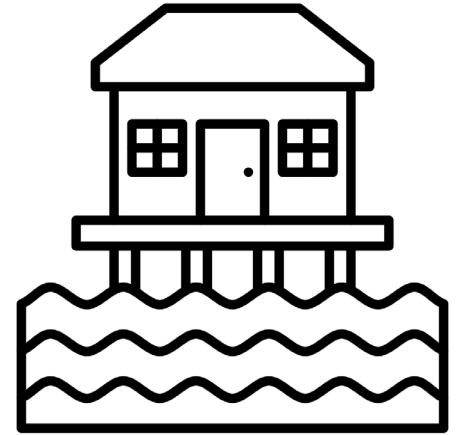
# Barriers & Facilitators of Older Adult Disaster Recovery



Home Owners  
Insurance



Adult Children

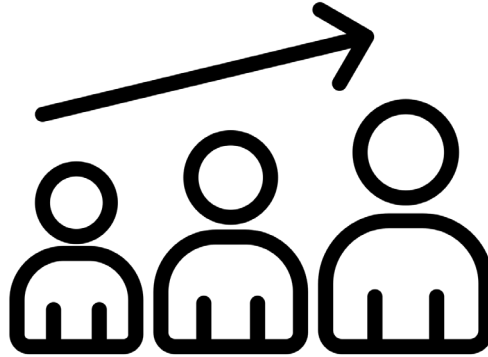


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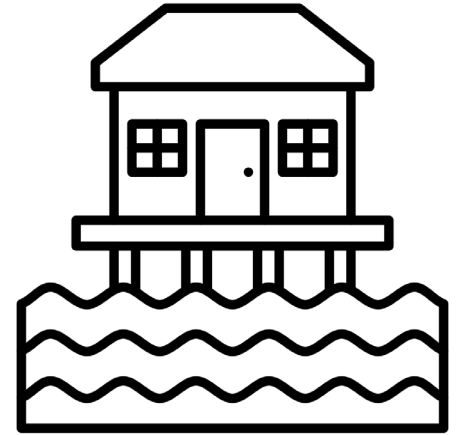
# Barriers & Facilitators of Older Adult Disaster Recovery



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Place Attachment

**“Everybody’s insurance has gone up. A lot of the insurance companies left the state because they had such losses. And people had a terrible time dealing with the insurance [companies] afterwards.”**



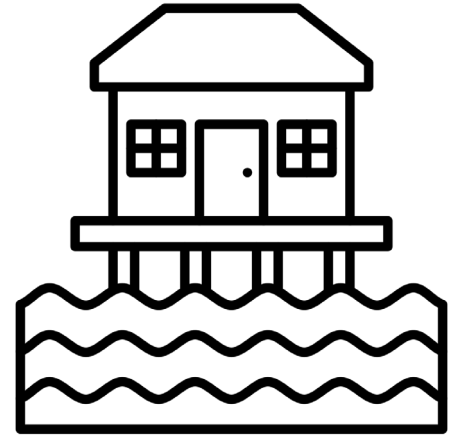
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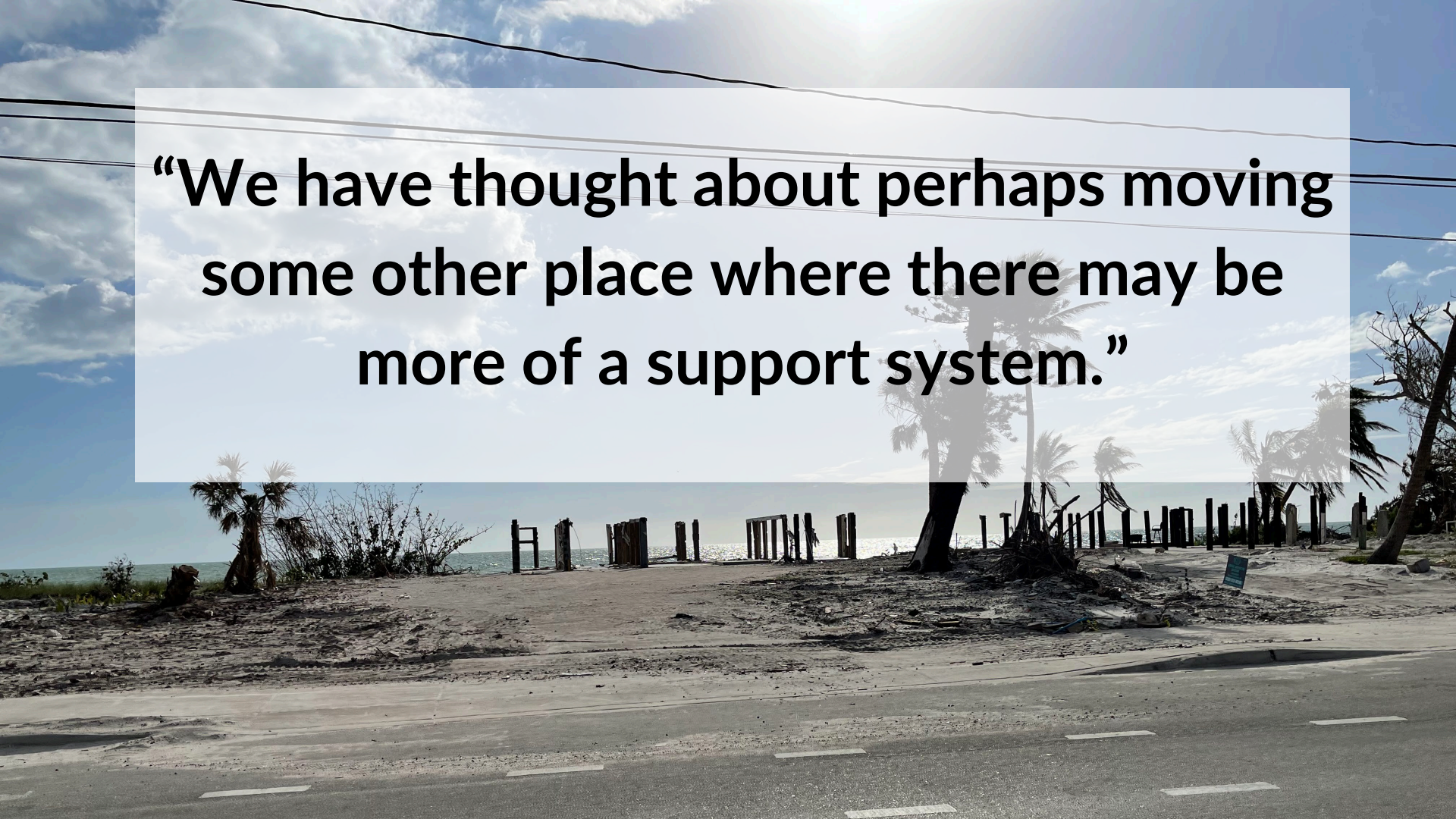


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**“My husband and I went to live with my daughter for a month and then a friend of mine offered us her guest house for 4-5 months while my husband mitigated our house.”**



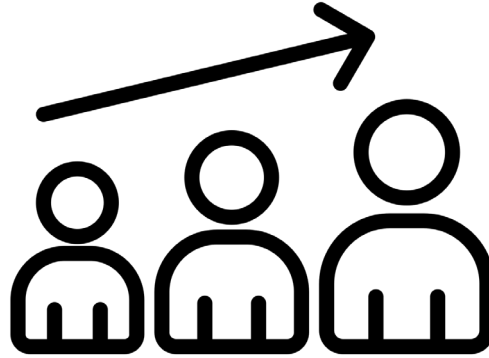
**“We have thought about perhaps moving  
some other place where there may be  
more of a support system.”**



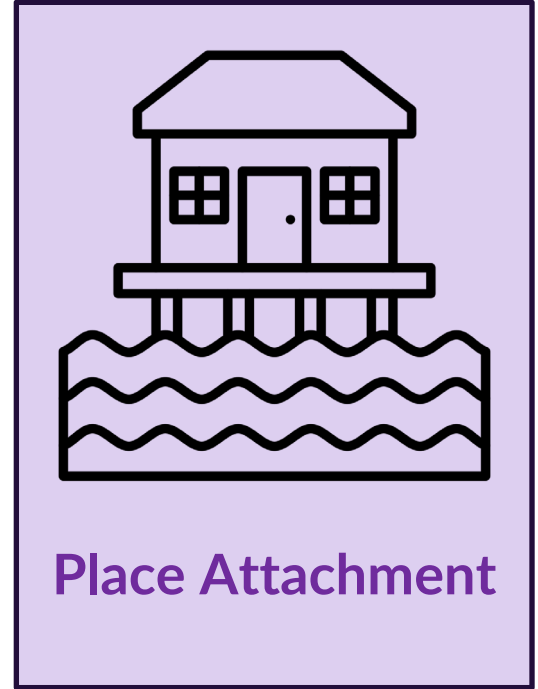
# Barriers & Facilitators of Older Adult Disaster Recovery



Home Owners  
Insurance



Adult Children



Place Attachment

**“Could it happen tomorrow? Absolutely. The table of the water is higher than it was in the 80s, docks have to be built higher. There is a problem but we have gone over 100 years without anything like [Hurricane Ian].”**

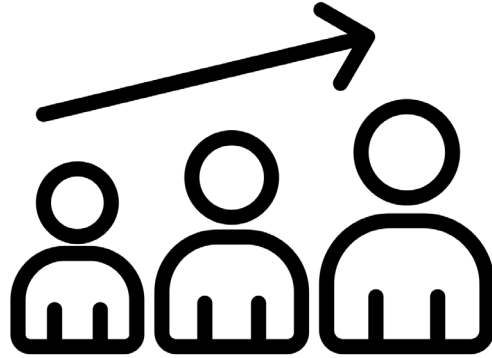


# Older Adult Post-Disaster Vulnerabilities & Resilience: Key Takeaways



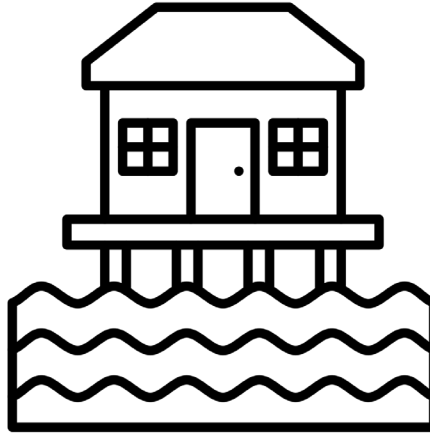
Homeowners insurance is an emerging barrier related to climate change that could impact the ability of older adults to age in risky environmental areas

# Older Adult Post-Disaster Vulnerabilities & Resilience: Key Takeaways



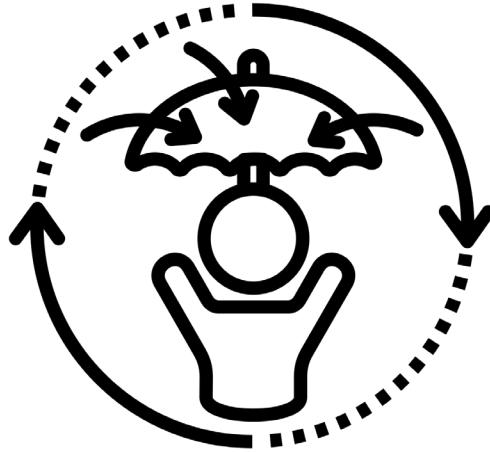
Importance of informal social support, especially when there is minimal post-disaster recovery programming or enthusiasm for climate mitigation policies

# Older Adult Post-Disaster Vulnerabilities & Resilience: Key Takeaways



Older adults want to live independently and age in their existing homes even if they are aware of the associated climate risks

# Older Adult Post-Disaster Vulnerabilities & Resilience: Key Takeaways



Findings suggest that the oldest-old are vulnerable to exposure but are resilient during recovery. The sandwich generation is resilient to exposure but vulnerable during recovery.

# Key Takeaways & Gaps: Building Resilient Social Infrastructure



# Thank you

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