

Housing as a determinant of the health effects of climate-related disasters

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Question

- People's *housing trajectories* following climate-related disaster
- Health effects of climate-related disasters in relation to *housing and neighbourhood vulnerabilities*

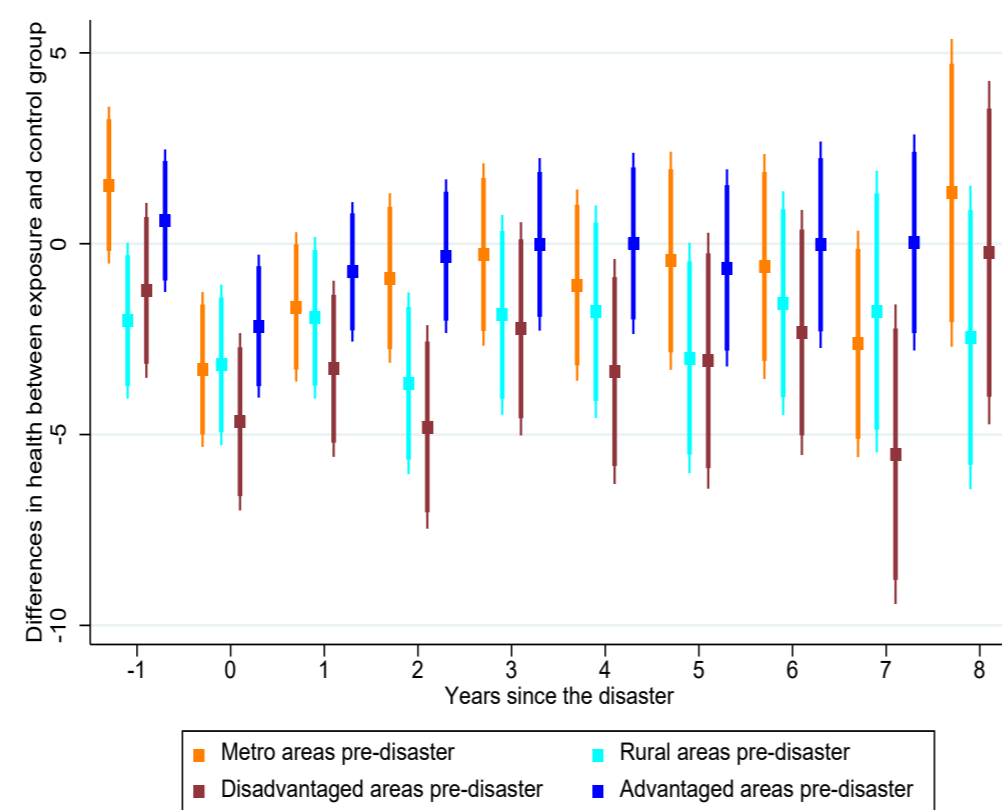
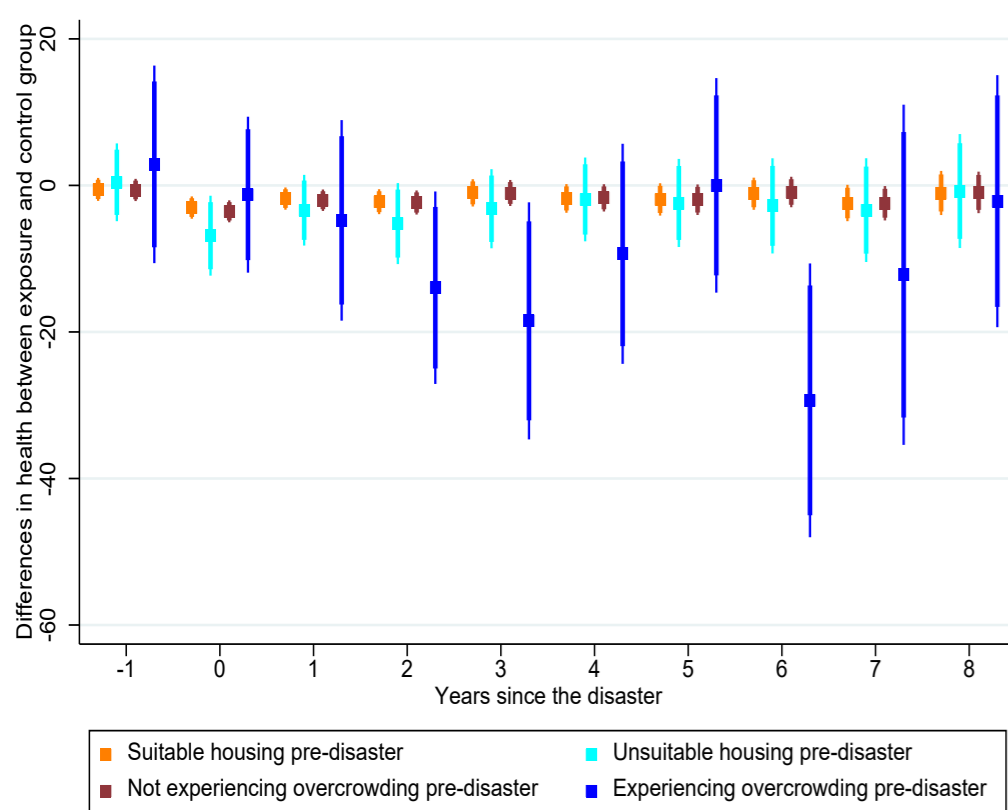
Background

- Extreme weather disasters have profound health consequences and can result in damage to people's homes destabilising their recovery from the event.
- Disaster research and planning have not yet adequately considered housing in restoration and recovery trajectories.
- Existing studies on health impact largely lack control for pre-disaster or counterfactual outcomes.

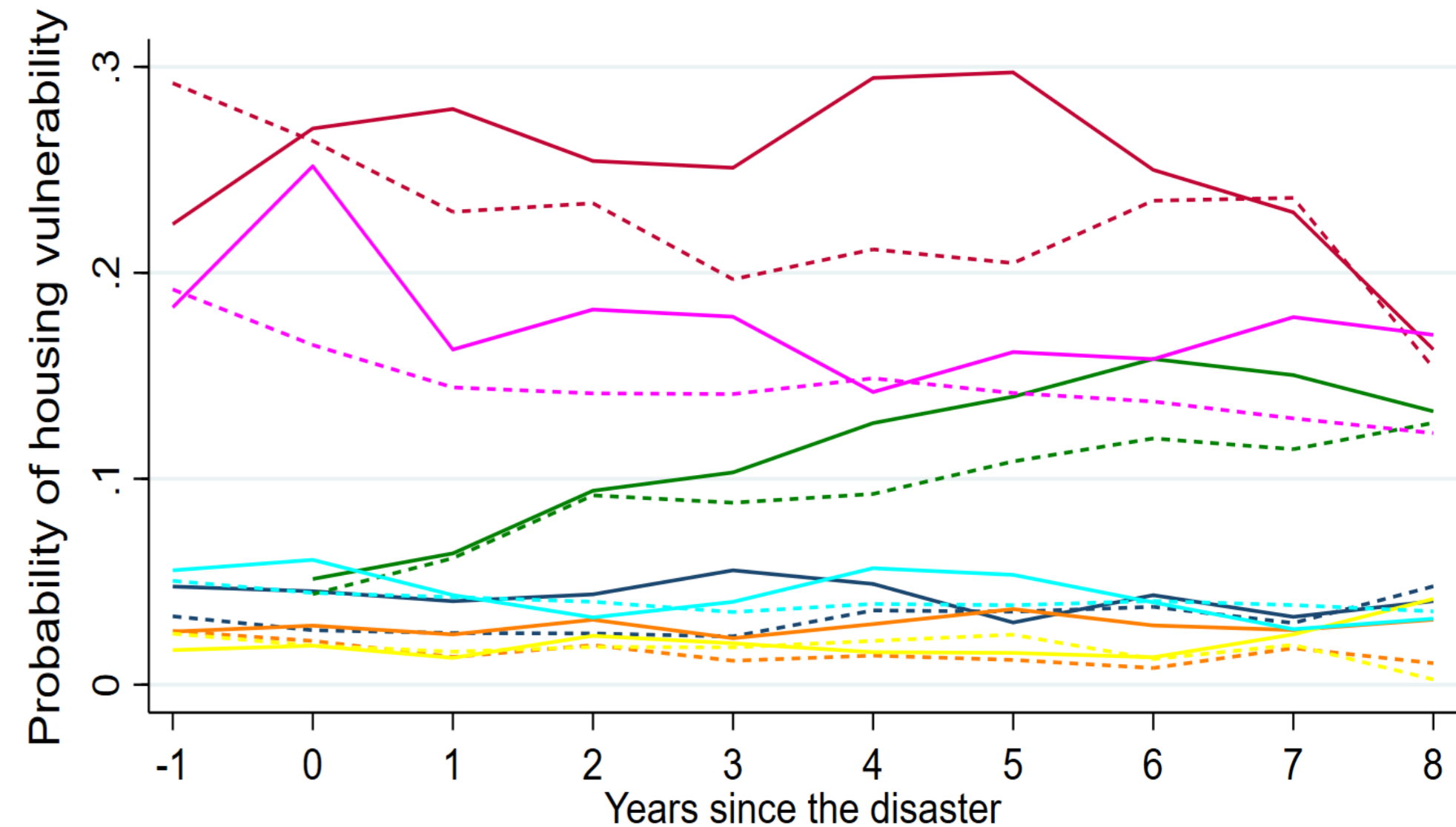
Method

- Data: Household, Income and Labour Dynamics survey in Australia, 2009-19
- Exposure group: A weather related disaster (flood, bushfire, or cyclone) damaged or destroyed home
- Control group: 1:1 matching without replacement based on X_{it-1}
- Covariates: demographic, socioeconomic, housing, health and locational factors
- $housing/wellbeing_{it} = \sum_{k \in K} \delta_k D_{it}^k + \alpha X_{0i} + \theta_t$, where D_{it}^k is a dummy equal to 1 in the k th period prior to or following the disaster ($k=0$ indicates the disaster year)

Health trajectories by housing and neighbourhood vulnerability



Housing trajectories prior to, during and post disaster



- Affordability stress-Exposure
- Mortgage/Rent arrears-Exposure
- Fuel insecurity-Exposure
- Homeownership exist-Exposure
- Overcrowding-Exposure
- Housing unsuitability-Exposure
- Residential instability-Exposure
- - - Affordability stress-Control
- - - Mortgage/Rent arrears-Control
- - - Fuel insecurity-Control
- - - Homeownership exist-Control
- - - Overcrowding-Control
- - - Housing unsuitability-Control
- - - Residential instability-Control

Discussion

- Although short-term on average, the health consequences of climate-related events were more sustained for people with pre-existing housing and neighbourhood vulnerabilities.
- People from socioeconomically disadvantaged or rural areas, residing in rental properties, or experiencing affordability stress had a slower health recovery.
- Understanding the role of housing in disaster planning and recovery presents an opportunity to leverage housing for improving people's health and wellbeing.