

California's Fourth Climate Change Assessment Supporting Research

Title: Examining the Association Between Temperature and Emergency Room Visits from Mental Health-Related Outcomes in California

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ABSTRACT

Temperature and morbidity has been explored previously. However, the association between temperature and mental health-related outcomes, including violence and self-harm, remains relatively unexamined. We obtained daily counts of mental health-related emergency room visits involving injuries with external cause from the California Office of Statewide Health Planning and Development from 16 California climate zones from 2005 to 2013, and combined them with data on mean apparent temperature, a combination of temperature and humidity. Using Poisson regression models, we estimated climate zone-level associations, then used random-effects meta-analyses to produce overall estimates. Analyses were stratified by season (warm: May-October; cold: November-April), race/ethnicity, and age. A 10-degree Fahrenheit increase in same-day mean apparent temperature was associated with a 4.8% (95% confidence interval, 3.6-6.0%), 5.8% (4.5-7.1%), and 7.9% (7.3-8.4%) increase in visits for mental health disorders, self-injury/suicide, and intentional injury/homicide, respectively, during the warm season. High temperatures during the cold season were also positively associated with these outcomes. Variations were observed by race/ethnicity, age group, and sex, with Hispanics, Whites, 6-18 year olds, and females at greatest risk for most outcomes. Increasing mean apparent temperature was found to have acute associations with mental health outcomes and intentional injuries, and warrants further studies in other locations.

HIGHLIGHTS

- Increased temperatures in California are linked to increases in mental health emergency room visits involving injury during the warm season (May-October).
- Temperatures were also linked to emergency room visits involving self-injury/suicide and intentional injury/homicide.
- These links to higher temperatures persisted even during the cool season (November-April).
- Variations in associations were observed by race/ethnicity, age, and sex.

Citation:

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