

Mental Health and Climate Change

? DID YOU KNOW?

Increased rates of substance abuse and interpersonal violence, especially intimate partner violence against women, have been observed following weather-related disasters.



Along with destruction to the physical environment, climate related impacts, including extreme storms, drought, wildfires and others, can damage the social fabric of communities. Even people who are not experiencing direct impacts from climate change may experience stress, anxiety, and fear about climate change from news reports or through the experiences of family and friends. Here we highlight some of the mental health impacts of climate change.

Extreme weather events¹

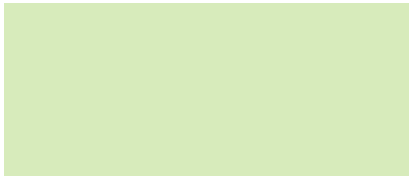
- Exposure to extreme weather events, such as floods, hurricanes and wildfires, is associated with a range of mental health impacts, including post-traumatic stress disorder (PTSD), depression, anxiety and suicide.
- Increased rates of substance abuse and interpersonal violence, especially intimate partner violence against women, have been observed following weather-related disasters.

Hurricane Katrina: The Storm After the Storm

The mental health impacts of Hurricane Katrina persisted long after the storm ended. Residents of storm-ravaged areas experienced worse mental health, including an increase in both suicidal thoughts and suicidal plans.

- In areas of Alabama, Louisiana and Mississippi, prevalence of PTSD rose from 15% a few months after the hurricane to 21% a year later. During the same timeframe, the proportion of people with suicidal thoughts more than doubled: from 2.8% to 6.4%.²
- For some, the hurricane's impact was cumulative: veterans with preexisting mental illness were 6.8 times more likely to develop additional mental illness after the disaster, as compared to those without a preexisting mental condition.³

Hope abounds: One study that followed Katrina survivors over the long term found that two-thirds of those who experienced increased rates of PTSD and psychosis one year after the storm no longer displayed symptoms of psychological distress three years afterwards. Some also report “post-traumatic growth,” or the feeling that surviving the hurricane made them stronger, despite also experiencing mental illness. These findings suggest the importance of long-term support for survivors of climate change-related disasters.⁴



Individuals taking certain medications such as antipsychotics, tranquilizers or medication for Parkinson's disease may experience complications during a heat wave. This places individuals with those conditions at greater risk for destabilization of their mental illness.

Extreme heat⁵

- Exposure to extreme heat impacts mental health through increased incidence of disease, death, violence, aggression, suicide and higher rates of admission for those with a psychiatric condition.
- Persons with mental illness may have triple the risk of death during a heat wave. In addition, for individuals admitted to emergency departments for heat-related illness, those with mental illness have a higher risk of death.

Drought⁶

- Drought is a slow-moving natural disaster, appearing over months and potentially lasting for years. Lack of water, however, is a life threatening emergency, leaving people without safe water to drink, grow food, or for sanitation purposes.
- Drought interacts with multiple other social and environmental stressors to negatively impact mental health by disrupting livelihoods and lifestyles — sometimes permanently — of individuals, families and communities.
- Especially for rural and agricultural communities, drought can have devastating impacts on economic and community stability, creating much stress and uncertainty for the future.

Mental Health Impacts of California's Historic Drought^{7 8}

In the fall of 2015, during the fifth year of the worst drought of California's history, the California Department of Health Surveyed two of the counties most impacted by the drought, Mariposa County and Tulare County. Among findings related to physical and economic health, the assessment noted that:

- In Mariposa, 18.9% of households surveyed reported having with a member with pre-existing depression or other mental illness. Among them 26.9% reported the drought was worsening their condition. In Tulare, 6.8% of the households reported this pre-existing mental health status, but most (59.1%) reported a worsening of their condition from the drought.
- Overall, 61% of the Mariposa households surveyed said the drought was negatively affecting their "peace of mind." In Tulare, 49.4% reported the same.





FAST FACT:

Social resources and connections such as social cohesion, network connectedness and community trust are critical to response and recovery efforts after disasters.

Climate change, mental health, and equity

Social and economic inequities, as well as individual characteristics, place some individuals and communities at greater risk for the effects of climate change on mental health:

- **Poverty:** Economic burden may increase the likelihood of stress-related mental health problems, and people with mental illness may encounter barriers to employment that impair economic stability. Low-income households are also less likely to have insurance or other financial resources to help recover from dislocation or other impacts prolonging stress after an extreme weather event.
 - The constant anxiety and stress of living in poverty and/or in neighborhoods with high levels of crime may impede the ability to prepare for and respond to adverse events.
- **Health access:** Community level inequities also exist, particularly in regards to health provider capacity and access. In California, the three counties with the highest percentage of individuals with Severe Psychological Distress (Kern, Kings and Madera) also have the lowest number of practicing physicians.⁹

Climate Change, Social Support and Resiliency: Lessons from Superstorm Sandy¹⁰

Social resources and connections such as social cohesion, network connectedness and community trust are critical to response and recovery efforts after disasters, which are increasing in frequency and severity due to climate change. In a study of 12 neighborhoods affected by Superstorm Sandy, those with high social resources viewed their community as more resilient and prepared for future disasters. Importantly, the role of social resources transcends neighborhood socioeconomic status: poorer neighborhoods with abundant social resources are more resilient, while wealthy neighborhoods with low social resources are less resilient in the face of disasters.



The physician role in climate change and mental health

- Talk to your patients about climate change risks and associated mental health impacts, and refer them for mental health services, as well as social support services to mitigate stress related to the economic and social impacts of climate change, including:
 - [LIHEAP](#): Low income home energy assistance program
 - Resources and support for disaster insurance, where possible.
- Advocate for policies and programs that build community cohesion and resilience, and that help empower individuals and communities to respond constructively to the threats of climate change, for example:
 - Neighborhood-based preparedness programs that help people to meet their neighbors and educate about specific strategies to reduce risks from natural disasters.¹¹
 - Psychological first aid training for local emergency response providers.¹²
 - Resident leadership academies and other community leadership programs that strengthen connections among community members and provide avenues for their participation in the decisions that impact their lives.
 - Engagement of community members in development of policies to address climate change and other community issues.
- Support policies and programs in your community and in your health system that authentically engage and partner with community residents in addressing climate and health problems. Advocate for greater mental health resources, particularly for disadvantaged and vulnerable communities.



! FAST FACT:

Lack of water is a life threatening emergency, leaving people without safe water to drink, grow food, or for sanitation purposes.

i For More Information

- American Psychological Association Report on Psychology and Climate Change
 - Executive Summary <http://www.apa.org/science/about/publications/executive-summary.pdf>
 - Full Report <http://www.apa.org/science/about/publications/climate-change-booklet.pdf>
- Los Angeles County Community Disaster Resilience Program <http://www.laresilience.org>

Photo page 1: Ed Edahl/FEMA; page 2 sidebar: Heather Buckley/flickr.com; page 2 box: Giorgio Montersino; page 3 sidebar: W. M. Shelley; page 3 box: Kevin Jarrett; page 4: Elizabeth Haslam; page 5: Lance Cheung/USDA.

“ Citations

- ¹ Dodgen, D., D. Donato, N. Kelly, A. La Greca, J. Morganstein, J. Reser, J. Ruzek, S. Schweitzer, M.M. Shimamoto, K. Thigpen Tart, and R. Ursano, 2016: Ch. 8: Mental Health and Well-Being. *The Impacts of Climate Change on Human Health in the United States: A Scientific Assessment*. U.S. Global Change Research Program, Washington, DC, 217–246.
- ² Kessler, R.C., Galea, S., Gruber, M.J., Sampson, N.A., Ursano, R.J., Wessely, S. (200). Trends in mental illness and suicidality after Hurricane Katrina. *Mol Psychiatry*, 13(4), 374-384. Available at http://www.ncbi.nlm.nih.gov/pubmed/18180768?ordinalpos=1&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVDocSum



? DID YOU KNOW?

The constant anxiety and stress of living in poverty and/or in neighborhoods with high levels of crime may impede the ability to prepare for adverse events.

- ³ Dodgen, D., D. Donato, N. Kelly, A. La Greca, J. Morganstein, J. Reser, J. Ruzek, S. Schweitzer, M.M. Shimamoto, K. Thigpen Tart, and R. Ursano, 2016: Ch. 8: Mental Health and Well-Being. *The Impacts of Climate Change on Human Health in the United States: A Scientific Assessment*. U.S. Global Change Research Program, Washington, DC, 217–246.
- ⁴ Lowe, S.R. & Rhodes, J.E. (2013). Trajectories of psychological distress among low-income, female survivors of Hurricane Katrina. *American Journal of Orthopsychiatry*, 83(2), 398-412. Available at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3999519/>
- ⁵ Dodgen, D., D. Donato, N. Kelly, A. La Greca, J. Morganstein, J. Reser, J. Ruzek, S. Schweitzer, M.M. Shimamoto, K. Thigpen Tart, and R. Ursano, 2016: Ch. 8: Mental Health and Well-Being. *The Impacts of Climate Change on Human Health in the United States: A Scientific Assessment*. U.S. Global Change Research Program, Washington, DC, 217–246.
- ⁶ Ibid.
- ⁷ California Department of Public Health (2015, November). Community assessment for public health emergency response (CASPER) addressing the California drought-Mariposa, County, California. Available at <https://www.mariposacounty.org/DocumentCenter/View/47514>
- ⁸ California Department of Public Health (2015, October). Community assessment for public health emergency response (CASPER) addressing the California drought-Tulare County, California. Available at http://hhsawebdocs.tchsa.org/Questys.CMx.HHSAWebdocs/File.ashx?id=3813&v=1&x=pdf&r=HHSA_Webdocs
- ⁹ Zelezny, L., Fu, X., Harootunian, G., Drexler, D., Avalos, A., Chowdhury, N., ...Edmonson, C. (2015). *Impact of the Drought in the San Joaquin Valley of California*. Available at: <http://www.fresnostate.edu/academics/drought/>
- ¹⁰ AP-NORC Center for Public Affairs Research (2014). Two years after Superstorm Sandy: Resilience in Twelve Neighborhoods. Available at http://www.apnorc.org/pdfs/sandy/sandy%20phase%20%20report_final.pdf
- ¹¹ Eiseman, D., Chandra, A., Fogleman, S., Magana, A., Hendricks, A., Wells, K., Williams, M., Tang, J., & Plough, A. (2014). The Los Angeles County Community Disaster Resilience Project-A Community-level, public health initiative to build community disaster resilience. *International Journal of Environmental Research and Public Health*, 11(8), 8475-8490. Available at <http://www.mdpi.com/1660-4601/11/8/8475>
- ¹² Chandra, A., Kim, J., Pieters, H., Tang, J., McCreary, M., Schreiber, M., & Wells, K. (2014). Implementing a psychological first-aid training for Medical Reserve Corps volunteers. *Disaster Medicine and Public Health Preparedness*, 8(1), 95-100. Available at http://www.rand.org/pubs/external_publications/EP50483.html



IN PARTNERSHIP WITH



Created with the support of Kaiser Permanente and The Kresge Foundation

COPYRIGHT INFORMATION© 2016 Public Health Institute/Center for Climate Change and Health. Copy and distribution of the material in this document for educational and noncommercial purposes is encouraged provided that the material is accompanied by an acknowledgment line. All other rights are reserved.