

Poorer mental health smolders after deadly, devastating wildfire

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In 2018, a faulty electric transmission line ignited the Camp Fire in Northern California, ultimately consuming 239 square miles and several communities, including the town of Paradise, which was 95 percent

destroyed. At least 85 people died.

Structures have been rebuilt, but some things are worse. In a paper published February 2, 2021 in the *International Journal of Environmental Research and Public Health*, scientists at University of California San Diego, with colleagues elsewhere, describe chronic mental health problems among some residents who experienced the Camp Fire in varying degrees.

Direct exposure to large-scale fires significantly increased the risk for [mental health disorders](#), particularly post-[traumatic stress disorder](#) (PTSD) and depression, the scientists wrote.

"We looked for symptoms of these particular disorders because emotionally [traumatic events](#) in one's lifetime are known to trigger them," said senior author Jyoti Mishra, Ph.D., professor in the Department of Psychiatry at UC San Diego School of Medicine and co-director of the Neural Engineering and Translation Labs at UC San Diego. Pre-existing childhood trauma or sleep disturbances were found to exacerbate mental health problems, but factors like personal resilience and mindfulness appeared to reduce them.

"We show climate change as a chronic mental health stressor. It is not like the pandemic, in that it is here for a period of time and can be mitigated with vaccines and other measures. Climate change is our future, and we need immediate action to slow down the changes being wreaked upon the planet, and on our own wellbeing."

Mishra, with collaborators at California State University and University of South Carolina, conducted a variety of mental health assessments on residents who had been exposed to the Camp Fire six months after the wildfire and those much farther away. Roughly two-thirds of those tested were residents who lived in or around Chico, a Northern

California city located approximately 10 to 15 miles of the center of the Camp Fire. The remaining third were San Diego residents living approximately 600 miles from the wildfire and presumably unimpacted.

The researchers found that the Northern California residents experienced measurable increases in PTSD, depression and anxiety disorders, which were worsened by proximity and exposure to the Camp Fire or by previous adverse experiences involving [childhood trauma](#), such as abuse and neglect.

Chronic [mental health problems](#) fanned by the wild fire were ameliorated, however, by physical exercise, mindfulness and emotional support, all of which may contribute to personal resilience and the ability to bounce back after stressful life events.

The worrisome thing is that stressful life events like the Camp Fire are becoming more frequent, due to climate change, said study co-author Veerabhadaran Ramanathan, Ph.D., Distinguished Professor of Atmospheric and Climate Sciences at Scripps Institution of Oceanography at UC San Diego.

"Since the 1970s, [fire](#) extent in California has increased by 400 percent," said Ramanathan. "While a faulty transmission line may have lit the Camp Fire in 2018, it is part of an overall disastrous multi-decadal trend fueled by human-caused climate warming. Through evaporative drying of the air, the soil and the trees, warming acts as a force multiplier. By 2030, the warming is likely to amplify by 50 percent. This surprising, if not shocking, study identifies mental illness as a grave risk for the coming decades."

Not just in California, but the world, write the authors.

"Unchecked [climate change](#) projected for the latter half of this century

may severely impact the mental wellbeing of the global population. We must find ways to foster individual resiliency," wrote the study authors.

More information: Sarita Silveira et al. Chronic Mental Health Sequelae of Climate Change Extremes: A Case Study of the Deadliest Californian Wildfire. *Int. J. Environ. Res. Public Health* 2021, doi.org/10.3390/ijerph18041487

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