

Mental and Physical Health Outcomes of Children Following the 2023 Maui Wildfires: Findings from the Maui Wildfire Exposure Study (MauiWES)

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Abstract:

Background: The August 2023 Maui wildfires caused unprecedented loss of life, property, and community stability. In response, the Maui Wildfire Exposure Study (MauiWES)—the largest post-disaster health cohort in Hawai'i's history—was launched in January 2024 to track the long-term health impacts among 2,000 affected residents, including 200 children aged 10–17. This abstract focuses on pediatric outcomes nearly two years post-disaster.

Methods: Between October 2024 and January 2025, children from participating MauiWES households completed validated mental health measures (CES-D-20 for depression, SCARED-5 for anxiety, PCL-5 for PTSD, Rosenberg Self-Esteem Scale) and on-site screenings of blood pressure and lung function (spirometry).

Results: Mental health challenges remain widespread. Over half of children (51%) screened positive for depression, with 22% in the severe range; 30% screened positive for probable anxiety disorder; and 45% exhibited at least mild PTSD symptoms, including 4% with severe PTSD. Low self-esteem affected 23% of participants, with higher burdens among girls and Asian, Filipino, and Hispanic/Latino youth across multiple domains.

Physical health screening revealed early cardiopulmonary risks: 38% of children had elevated or hypertensive blood pressure, with the highest Stage 2 hypertension prevalence among Filipino youth (15.4%). Lung function testing showed 18% with impaired forced vital capacity and 43% with obstructive airway patterns, with severe obstruction most common among Asian children and girls.

Conclusions: Nearly two years after the fires, Maui's youth exhibit high rates of depression, anxiety, PTSD, and early signs of cardiovascular and respiratory strain, with clear disparities by ethnicity and gender. These findings underscore the need for sustained, culturally grounded, trauma-informed pediatric mental health care; school-based screening and support programs; and proactive cardiopulmonary monitoring to prevent long-term disease. Integrating child-focused interventions into Maui's ongoing recovery plans is essential to prevent the disaster's effects from becoming lifelong burdens.