

Missile strike false alarm most stressful for less anxious Hawaiians, study finds

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After learning that a warning of a missile headed to Hawaii was a false alarm, the most anxious local Twitter users calmed down more quickly than less anxious users, according to a study of tweets before, during and after the event, published by the American Psychological Association.

"Can a false alarm of an impending disaster itself be a form of trauma? Our results suggest that the experience may have a lingering impact on some individuals well after the [threat](#) is dispelled," said Nickolas Jones, Ph.D., of the University of California, Irvine, and lead author of the study published in the journal *American Psychologist*. "While those who before the alert had exhibited the least [anxiety](#) took the longest to stabilize, at approximately 41 hours, and the medium-anxiety group took 23 hours, the individuals who had exhibited the greatest anxiety before the alert stabilized almost immediately."

In January 2018, residents of Hawaii received an alert from the Hawaii Emergency Management Agency over radio, television and smartphones warning that a [ballistic missile](#) was headed toward the state, that people should seek shelter and that the alert was "NOT A DRILL." A second message was transmitted 38 minutes later stating that there was no missile threat and that the original message had been a false alarm.

To better understand the psychological effects of event on the population, Jones and his colleague Roxane Cohen Silver, Ph.D., also of the University of California, Irvine, collected more than 1.2 million posts on Twitter from more than 14,000 users who followed local

Twitter accounts across the state of Hawaii from six weeks before to 18 days after the event. Tweets were scanned for 114 words associated with anxiety (e.g., afraid, scared, worried). Each tweet that contained an anxiety-associated word was given a score of one and all others scored zero. The researchers then grouped users based on their tweets prior to the false alarm as low, medium or high anxiety.

Anxiety expressed on Twitter rose approximately 3.4% every 15 minutes during the false alarm and decreased after the all clear. What the researchers found interesting was how long it took [anxiety levels](#) to stabilize in the various groups after the event and what those new baseline levels were.

While the group that exhibited low anxiety prior to the alert showed a new baseline anxiety level 2.5% higher after the event, the group who exhibited high anxiety prior to the alert had a baseline that was 10.5% lower afterward.

"We were surprised about our findings for the high prealert anxiety group," said Silver. "The literature suggests that people who experience negative psychological states, like anxiety, before a large-scale trauma, are at an increased risk for negative psychological consequences afterwards. However, those individuals who before the alert generally expressed much more anxiety on a daily basis than anyone else in the sample seem to have benefited from the false missile alert instead."

Silver believes the decrease in anxiety levels for the high-anxiety group may have been because the threat of imminent death put their day-to-day stressors into perspective.

"Anxious individuals may have more to appreciate when they experience a near miss and thus express less anxiety on social media after having 'survived' what would have undoubtedly been construed as a deadly

situation," she said.

"Free and open access to public Twitter data, coupled with Hawaii's false missile alert, provided us with an opportunity to study, for the first time, how several thousand people responded psychologically to the threat of an inescapable, impending tragedy," said Jones. "Although it is fortunate we were able to study this phenomenon without loss of life, we show that, for many users, the anxiety elicited by this false [alarm](#) lingered well beyond the assurance that the threat was not real, which may have health consequences over time for some individuals. Our findings also highlight how important it is for emergency management agencies to communicate with the public they serve about potential threats and mishaps in emergency communications."

Provided by American Psychological Association

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