

Hurricane Katrina's effects on children: Resilience and gender

July 15 2010

Rebuilding schools after Hurricane Katrina and providing supportive environments and relationships have helped many children reduce their levels of overall trauma from the hurricane that devastated the Gulf Coast in August 2005, according to a new study. A second study found that girls had distinct stress reactions from boys in the aftermath of the storm.

The studies appear in a special section on [children](#) and disaster in the July/August 2010 issue of the journal *Child Development*.

In a [longitudinal study](#) of recovery patterns of children affected by Katrina, researchers at Louisiana State University Health Sciences Center and the St. Bernard Parish Public Schools looked at 400 mostly White elementary- and high-school-aged children (from ages 9 to 18) between 2005 and 2008. The children lived in a New Orleans school district that was heavily damaged by the hurricane.

When the researchers looked at the children two and three years after Katrina hit, they found that overall trauma symptoms (such as feeling depressed, sad, nervous, and having trouble concentrating and sleeping) had decreased. Furthermore, 45 percent of the children were found to be resistant to stress and lacked long-term [psychological problems](#). The children's strengths, the researchers found, were largely the result of rebuilt schools (St. Bernard Parish reopened within 2-1/2 months of the hurricane) and supportive relationships (including the [classmates](#) students interacted with when they returned to school).

But this work in progress also found that more than a quarter of the children continued to have significant trauma symptoms of post-traumatic stress and depression three years later. Children who reported these symptoms were more likely to be younger, female, have seen a mental health professional, and also report family or school problems. They also reported being exposed to more traumas.

A second study on children affected by Katrina, conducted by researchers at the University of Missouri and The Pennsylvania State University, looked at the issue from the perspective of gender. Experiencing distress is a normal part of life, yet males and females have been found to show different patterns of stress reactions in laboratory studies.

In this study, researchers looked at more than 60 teens (ages 12 to 19) who had been displaced by Katrina and were living in a government relocation camp with their families two months after the hurricane. Most of the participants were African American teens from low-income families that had lived in New Orleans. The researchers measured psychological functioning (such as depression and aggression) and two hormone markers of stress regulation (salivary cortisol and alpha-amylase), then compared these with more than 50 adolescents who were demographically similar but lived in a part of the United States that wasn't affected by Katrina.

Male and female teens who experienced the hurricane showed distinct patterns of behavioral stress as well as gender differences in how they regulated physiological stress, the study found. Specifically, compared to the children who weren't exposed to Katrina, girls who survived the hurricane were more depressed and boys showed lower levels of aggression and higher levels of confidence. Heightened stress hormonal reactions were likewise associated with depression in girls and confidence in boys.

In suggesting that males and females develop specialized systems for processing and responding to stress, the study adds to our understanding of normative [stress](#) regulation following trauma.

More information: *Child Development*, Vol. 81, Issue 4, Children of Katrina: Lessons Learned About Post-Disaster Symptoms and Recovery Patterns by Kronenberg, ME et al.

Provided by Society for Research in Child Development

Citation: Hurricane Katrina's effects on children: Resilience and gender (2010, July 15) retrieved 15 July 2023 from <https://medicalxpress.com/news/2010-07-hurricane-katrina-effects-children-resilience.html>

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