

Heat waves kill in areas without businesses to draw

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Severe heat waves kill more people in neighborhoods where there are few inviting businesses to draw older people out of their apartments, new research suggests.

A study of the 1995 heat wave in Chicago found higher-than-average mortality rates in areas where businesses were run-down, and dominated by liquor stores and bars.

While other studies had shown that elderly people in low-income neighborhoods were most at risk of dying in a heat wave, this research shows what it is about some disadvantaged areas that leave residents more vulnerable, said Christopher Browning, lead author of the study and associate professor of sociology at Ohio State University.

"The neighborhoods with the highest mortality rates were less likely to have stores or other businesses where older people felt comfortable going to, even in the worst heat," Browning said.

"They stayed bunkered in their apartments where they were most at risk for heat-related illnesses that led to death."

Browning conducted the study with Kathleen Cagney, assistant professor in the Department of Health Studies, and Danielle Wallace, a doctoral student, both at the University of Chicago; and Seth Feinberg, an assistant professor at Western Washington University. Their results will be published in the August issue of the *American Sociological Review*.

"Previous research has focused on the lack of city services or the lack of neighbors checking on neighbors," Cagney said. "Both are important, but our research indicates that the neighborhood infrastructure itself could be implicated."

Nearly 800 people in Chicago, mostly elderly folks living alone, died during one week in the midst of a July 1995 heat wave. During several days that week, the temperature was over 100, with a heat index on July 13 of 126.

The researchers used several data sets to explore how neighborhood conditions in Chicago were linked to mortality during that heat wave.

They found, as expected, that most of the heat-related deaths occurred in lower-income neighborhoods, even after taking into account factors such as race. "It was the fact that these residents were poorer that left them most vulnerable," Browning said.

Factors that are often linked to low-income neighborhoods – such as higher crime and murder rates, more fear of crime, visible signs of disorder such as graffiti – did not show as strong a link to heat wave mortality as did the condition and type of businesses in the neighborhoods.

"These neighborhoods were in commercial decline," Browning said. "A lot of the businesses were boarded-up, or in poor condition. Those that were left were bars and liquor stores, or youth-oriented places that would not attract elderly customers.

"These businesses didn't promote an environment where people felt comfortable walking around, and older people were probably fearful to walk into some of these places."

But the results showed that these neighborhoods in commercial decline were not linked to higher mortality rates during July weeks in other years – it was only during the heat wave of 1995.

"On a general basis, it was probably good for their safety that elderly residents avoided being out in these neighborhoods," he said. "They learned to adapt to conditions in which they spent a lot of time in their apartments, but during a heat wave this left them vulnerable."

In other findings using the same data sets, Browning, Cagney and colleagues found that residents in low-income neighborhoods did better when they lived in areas with a high level of what they called "collective efficacy." Collective efficacy is the extent to which people in a community trust one another, help each other and feel responsible for one another.

But when it came to the 1995 heat wave, elderly residents didn't fare better even when they lived in neighborhoods high in collective efficacy.

"We think that neighbors just didn't realize how vulnerable the elderly were while this heat wave was going on. More people would probably have helped, but they just didn't know. The impact didn't become clear until it was too late," he said.

Browning said people, at least in Chicago, may be more prepared now to look after elderly residents in their neighborhoods during a heat wave.

How best to intervene when a heat wave occurs? "We can certainly take action in the moment, by knocking on doors of older residents, but we can also think more broadly about the types of communities that facilitate relief from the heat. A focus on enriching the commercial sector may ultimately result in a greater number of lives saved," Cagney said.

The results of the study suggest that the elderly in these declining neighborhoods may be at risk during other types of disasters as well, according to Browning.

"When these people see their own neighborhood as a risk, they may discount the more uncertain danger of a potential disaster," Browning said.

Source: Ohio State University

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