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Flooding and Fatalities Due to Hurricane Katrina

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A new study has found that 67% of the fatalities in New Orleans after Hurricane Katrina hit in August 2005 resulted from direct impacts of the flooding that occurred when the levees collapsed.



McClean, VA – A new study has found that 67% of the fatalities in New Orleans after Hurricane Katrina hit in August 2005 resulted from direct impacts of the flooding that occurred when the levees collapsed. Most of the deaths were caused by drowning or physical trauma from debris or building collapse. Some victims who remained in the flood zone in attics or floors that were not flooded died from adverse conditions associated with extended exposure including dehydration, heat stroke, heart attacks, strokes or other conditions associated with lack of medical supplies.

In all, 518 out of the analyzed 771 deaths in New Orleans resulted from direct exposure to the flooding, according to the results of the study “Loss of Life Caused by the Flooding of New Orleans After Hurricane Katrina: Analysis of the Relationship Between Flood Characteristics and Mortality,” which is reported in the May issue of the peer-reviewed journal *Risk Analysis*, published by the Society for Risk Analysis.

Another 106 deaths were indirect and occurred in public shelters and hospitals in the flooded area. These fatalities were due to lack of necessary medical services, chronic conditions, stress-induced heart attacks or strokes or violence, according to Sebastiaan Jonkman at the University of Delft in The Netherlands and co-authors from Louisiana State University (LSU). The remaining 147 deaths occurred outside of the flooded area. Jonkman and his colleagues found that disease and toxic contamination caused by the flooding did not contribute significantly to the fatality rate.

“The elderly were the most vulnerable. Nearly 60% of fatalities were over 60 years and 85% were over 51 years,” Jonkman’s team found. He believes that this was due to elderly people’s inability to evacuate easily and their vulnerability if they stayed and tried to survive the hazards of an event of this magnitude. Mortality rates were highest in areas near levee breaches, particularly the severe breaches in the Lower 9th Ward where flooding occurred extremely rapidly and the velocity of the water caused drowning and collapsed buildings.

The research team describes their results as preliminary because the mortality data are incomplete and some of the flooding characteristics are based on simulations. However, they believe that despite the limitations, the results provide important insights into the relationship between flood characteristics and mortality. In particular, contrary to current theory, they found that the Katrina flood was very comparable to historical large-scale floods, including the number of people killed. “Overall, the available data for New Orleans do not support the claim that mortality among those exposed during a contemporary flood event is lower than during historical events,” Jonkman explained.

Based on this study, he said that “more specific disaster management strategies are needed to target elderly populations and that the direct impacts of large flooding events can be reduced with improved preparation of health care facilities and systems in and outside of flood-prone areas.”

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(Note to editors: The complete study may be accessed at
<http://www3.interscience.wiley.com/journal/118486448/home>)

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