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Culture sways views of disaster risk

Perception of disaster risk influenced by culture more than experience, study finds



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People from different parts of the world rate differently their risk of dying or getting injured in a disaster, and this has more to do with cultural factors than actual exposure to an event, suggests research published online in *Risk Analysis*. It also indicates that people across cultures share a belief that they are less prone to harm than others around them.

Though preliminary, the findings shed some light on how culture influences the perception of vulnerability to catastrophic natural disasters or terrorist events — an area where research is scarce.

“In an age where people believe they are more at risk now than ever before, understanding the influences and the consequences of risk perception is considerably valuable,” write Elaine Gierlach of Palo Alto University in California, USA, and colleagues.

Unlike risk assessment, which is based on objective information, risk perception tends to rely on a person’s psychological state, personal experience and socio-cultural factors. Cultural values influence which hazards are believed to be relevant to a group, the authors explain. “Members of a group construct shared meanings to explain the reasons behind hazardous events to promote a sense of stability and allegiance within the group.”

Previous research into cultural influences on subjective judgments of risk concluded that in general, people from independent or individualistic cultures, such as North America, believe they have an advantage over others around them and are in control of their lives — a so-called ‘optimistic bias’. But people from interdependent or collectivist cultures, such as Asia, see themselves as more alike to others in their group.

For this study Gierlach and colleagues measured and compared risk perceptions between 365 mental health workers from Japan, Argentina, and North America — countries that represent different degrees of interdependence and histories of exposure to disaster.

During a four-hour disaster preparedness training run by one of the study’s authors, the participants were asked to complete a risk perception survey after being presented with information describing a tsunami and a terrorist event. The survey included questions about the probability of themselves or other people suffering a disaster-related fatality or injury. Risk scores were calculated based on answers to these questions, and differences between groups were analysed statistically.

“Japanese groups had the highest risk perceptions for both types of hazards and North Americans and Argentineans had the lowest risk perceptions for terrorism,” report the authors. They also found that participants in all groups rated their own risk in either type of disaster as lower than that of others.

“The strongest and most robust findings were of an optimistic bias that was especially prevalent in the US samples,” add Gierlach and colleagues. Although participants from the USA had a higher exposure to terrorist events than those from Japan and Argentina, they believed they were least vulnerable to them.

This may be explained by the country’s position of power in the world, the authors speculate. It also indicates that cultural factors have a stronger influence on risk perceptions compared with the frequency of exposure to disaster events. Similarly, participants from Japan, where terrorist events were least frequent, had the highest perceived risk, possibly because of the region’s instability and a history of other disasters such as atomic bombs and tsunamis.

Gierlach and colleagues were surprised to find that Argentineans were similar to Americans in their level of risk perception, even though their exposure to natural disasters and terrorist events was lower. They suggest that, being a diverse country with close ties to the USA, culturally Argentina may be more like North America than was presumed.

Follow-up research should probe the specific cultural factors that influence perceptions, say the authors, adding that “understanding how these preliminary data can be applied to risk communication would be an important next step.”

Because perceived risk bears on how willing people are to take precautions against harm, insights into risk perception can help to craft more meaningful public health messages. This could prompt changes in people’s behaviour that are more accurate, timely, and not driven by fear.

The perception and fear of disaster events can also affect decisions over public spending. Gierlach and colleagues point to the example of the September 11th attacks on the USA, explaining that in the aftermath people avoided travel on

commercial airplanes and the government spent millions of dollars on redundant anti-terrorism programmes at the expense of preparedness for natural disasters. Fatalities from road accidents increased as a result, and "the economic consequences within the country were quite real."

The perceived risk of remarkable and less frequent events, such as terrorist attacks, is often higher compared with more common ones such as car accidents. How a person rates their risk depends on their characteristics — gender, for example, or socioeconomic status — as well as the type of hazard.

Reference and links

1. Gierlach E, Belsher BE, Beutler LE. Cross-cultural differences in risk perceptions of disasters. *Risk Anal* 2010. doi: [10.1111/j.1539-6924.2010.01451.x](https://doi.org/10.1111/j.1539-6924.2010.01451.x)

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