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ENVIRONMENTAL RISK, COMMUNICATION OF



Communication of environmental risk is conveying the potential impact of environmental stressors on people. These stressors include chronic anthropogenic conditions and acute geophysical events, both of which can result in human suffering and loss. In communicating risk, public health officials and governmental agencies seek to raise awareness by sharing relevant information. Successful communication depends on both the framing and content of the message and on public perception of risk. This communication is accomplished through a variety of mediums, including government websites and social media.

Anthropogenic stressors in the environment usually arise from the use of technology and chemicals. This includes the impacts of climate change, pollution, antibiotic resistance, ecosystem devastation due to deforestation, soil degradation and erosion, and infectious disease. Geophysical stressors typically refer to extreme weather events like floods and hurricanes and to volcanoes, earthquakes, landslides, and wildfires.

The goal of risk communication is not just to spread information but also to ensure that people take appropriate action to reduce their environmental risk. According to the World Health Organization (WHO), successful risk communication depends on several factors. First, the public should be seen as a stakeholder, and the message should respond to current public concerns. Second, information needs to be framed for a lay audience. And third, the message should be both precise and transparent. In other words, it should acknowledge uncertainty about outcomes or probabilities and avoid “over-assurance.” The WHO justifies the need for precise and transparent messaging by explaining that vague terms like “possible” can be interpreted to mean anything from a zero to 100 percent chance of occurrence. Furthermore, without specific information, most people are poor at estimating the risk of some event because they are biased toward events they remember and those that confirm their existing beliefs.

The content of the message should address how one is exposed to the risk, the consequences of exposure, who or what is responsible for the risk, and whether the risk is controllable. Because risk varies across a population, messages also need to address who is most susceptible. In general, children, pregnant women, older adults, and people with chronic diseases, such as cancer, diabetes, or HIV/AIDS, are more likely to suffer from environmental stressors. Other exposure factors may include time spent outdoors, place of residence, workplace, and diet.

Successful communication also relies on public perception of environmental risks. The WHO notes that public reaction is often far greater or far less than what

scientific estimates of risk would justify. People are more concerned about risks when they are involuntary, inequitably distributed (i.e., perceived as unfair), unfamiliar, or poorly understood by authoritative sources. For example, geomagnetic storms (disruptions in the earth's magnetic field caused by waves of increased solar winds) are uncontrollable and, therefore, perceived as higher-risk even though the absolute risk to the public is low. Acute risks get far more attention than chronic risks even though the chronic risk may affect far more people. For example, outbreaks of food poisoning (acute risk) receive more attention on evening news programs than people becoming ill from obesity (chronic risk), although obesity is a much greater public health threat. Finally, messages that contain elements of blame, cover-ups, or crime increase public perception of risk, and when risk is communicated as part of a story with conflict, heroes, villains, and victims, people are more likely to pay attention.

Government agencies and public health organizations are generally responsible for communicating environmental risk. For example, the WHO leads and coordinates emergency response in nearly 200 countries. When needed, the WHO acts to set priorities, assess risk, and communicate this information to the public. In the United States, the Centers for Disease Control and Prevention, the Department of Health and Human Services, and the Food and Drug Administration all play a major role in communicating risk. Additionally, the Agency for Toxic Substance and Disease Registry helps health professionals educate the public about environmental risk.

These agencies use a number of mediums for communicating risk to a broad audience, including Internet websites, social media, radio, television, phone calls, and print media. Google, a multinational technology company, communicates risk using innovative forms based on Internet data. For instance, Google Flu Trends uses search engine queries to estimate influenza activity. (One independent study of this tool found it to be quite accurate in real time.) Since Hurricane Katrina in 2005, Google Crisis Response has been another emergency-response tool for assembling information about earthquakes, floods, tornadoes, and wildfires all over the world. Crisis Response has a resource page with emergency information and tools, a person finder, and crowdsourced geographic information.

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See Also: Bhopal Incident; Cancer Risk from Environmental Contaminants; Environmental Health Profession; Integrated Risk Information System

Further Reading

Abkowitz, Mark. *Environmental Risk Communication: What Is It and How Can It work?* (Summit Proceedings) Nashville, Tennessee: Vanderbilt University, 2002.

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