LESSONS FROM HISTORY: EFFECTS OF MANMADE DISASTERS ON COMMUNITIES AND SCHOOLS

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Largest maritime oil spill in U.S. history

Between 101 and 327 million gallons estimated to have spilled
Flow rate somewhere between 1.5 to 4.1 million gallons per day
Oil slick covers over 2,500 square miles

11 workers killed and 17 injured
Massive economic consequences
Thousands of animals killed
From 1973 to 1990, 11.8 million gallons of oil have spilled into U.S. waters each year on average (Etkin, 2001)

Spillage has been reduced to about 1.5 million gallons per year since 1990 (Etkin, 2001)

1,270 hazardous waste sites on the “National Priorities List”

Sites that pose “a significant public health threat” (Environmental Protection Agency, 2010)
• Approximately 20,000 tons of toxic waste are buried in the 1950s

• Land is sold and developed
  A school is built; 400 students enroll

• 1960s and 1970s—residents of Love Canal in Niagara Falls, NY begin complaining of health risks associated with chemical exposure
THREE MILE ISLAND

• 1979—Partial meltdown at the Three Mile Island nuclear power plant near Harrisburg, PA
  140,000 residents are evacuated
  Community is disrupted
• Unclear immediate and long-term risks associated with radiation exposure
• Resulted in:
  widespread fear
  frustration
LONG-TERM PSYCHOLOGICAL EFFECTS OF TECHNOLOGICAL AND ECOLOGICAL DISASTERS

- A review of 130 U.S. disasters suggests that these disasters cause the greatest long-term devastation (Norris et al., 2002)

- Six years after the Exxon-Valdez spill:
  - 23% of men and 13% of women had clinically significant anxiety
  - 39% of men and 20% of men had depression
  - 34% of male fishers and 40% of female fishers had elevated PTSD symptoms (Arata, Picou, Johnson, & McNally, 2000)

- Six years after Three Mile Island:
  - Elevated rates of anxiety, depression, and somatic distress were found in the community surrounding the plant (Baum & Flemming, 1993)
Culpable companies and victims have different motivations

Multiple parties with different motivations become involved:

Attorneys, politicians, various businesses, government officials, activists, opportunists

Differences of opinion within victims

Effects on employees and employment

“Confrontive coping”
POST DISASTER LITIGATION

• Cases tend to be long and drawn out:
  Hooker Chemicals did not pay restitution until 1995 even though complaints began in the 1960s
  It took 19 years for most victims to be compensated after the Exxon-Valdez spill
  $5 billion reduced to $507 million

• Companies will try to limit liability
  Contributes to misinformation

• Being involved with litigation appears to exacerbate stress and interfere with coping and recovery (Picou, Marshall, & Gill, 2004)
ECONOMIC, INTERPERSONAL, AND PERSONAL RESOURCE LOSS

• No clearly established recovery period
• Income-loss spirals
  
  Loss of $155 million to fishermen following Exxon-Valdez
• Occupational disruptions
• Disruptions in interpersonal relationships
  Maladaptive coping
• Difficulty finding meaning in disaster or using religious beliefs to come to terms with tragedy (Kroll-Smith & Couch, 1987)
Technological disasters have a corrosive effect on the social fabric that could pull people together during a crisis or facilitate post-traumatic growth (Lazarus & Sulkowski, 2010)

- Increases tension in communities
- Exacerbates discrimination
- Love canal example
DIFFERENCES BETWEEN TECHNOLOGICAL/ECOLOGICAL DISASTERS AND OTHER DISASTERS

• Natural disasters and acts of mass violence:
  Cause immediate concern and alarm
  More familiar
  Usually time limited

• Technological/ecological disasters:
  May be difficult to identify threats and risks
  Few may be experts on nature of threat
  Can have chronic and long-term effects
  May be difficult to identify recovery stages
  (Lazarus & Sulkowski, 2010)
Based on work by Hobfoll et al., 2007

1. Promote a sense of safety
2. Calm the fearful
3. Engender a sense of self-efficacy and collective efficacy in affected individuals and communities
4. Increase feelings of connectedness with others
5. Instill and inspire hope in discouraged victims
People may need to be informed of risks and threats. Information should be coupled with strategies to limit risk or exposure.

Prevent the “pressure cooker” effect:

Rumors and horror stories are often spread.

Basic needs come first!
Children need to be provided with developmentally appropriate information
  Information should be objective and concrete
  Need to be told that they are loved, safe, and will be protected

Reestablish the “protective shield”
  Schools can be rallying points for recovery operations
  School-based mental health workers can assume leadership roles and disseminate safety information

Collaborate with outside organizations
  NASP National Emergency Assistance Team (NEAT)
  American Red Cross
PROMOTE CALMING

- Therapeutic grounding
  - Provide support in safe and easily accessible facilities
  - Normalize experiences and emotions
  - Develop a culture of caring
  - Have an “open-door” policy for receiving support
- Diaphragmatic breathing
- Progressive muscle relaxation
- Exposure-response prevention therapy
  - Gradual and repeated exposure to feared stimuli
  - Habituation
- Problem-solving and cooperation
  - Break large problems into more manageable ones
  - Remain optimistic, realistic, and calm
Technological disasters often engender feelings of powerlessness

Learned helplessness

The belief that one can cope with trauma has been found to predict adaptive functioning in the wake of disasters (Basoglu, Salcioglu, Livanou, Kalender, & Acar, 2005; Bleich, Gelkopf, & Solomon, 2003)
PROMOTE SELF- AND COMMUNITY EFFICACY

- Align with victims
  Help facilitate post-disaster adjustment
  Help with litigation
- Model active and adaptive coping
- Sponsor recovery activities
  Youth also can help rebuild or improve the community
- Foster empowerment instead of dependency
Social connectedness promotes emotional support, adaptive coping, and the transfer of important knowledge.

Focus on supporting families.

Reach out to those who may be unwilling or not know how to ask for help.

Support local recovery organizations.

External support is time-limited.
PROMOTE CONNECTEDNESS

- Schools can provide social supports and connections
- Prevent disruptions in normal activities
  Extra curricular activities, sports, etc.
- Identify and address negative social support
  E.g., substance abuse, exploitation, intimidation
- Know which populations are most vulnerable to continued or additional victimization
- Be sensitive to cultural and individual differences
PROMOTE CONNECTEDNESS: A CASE EXAMPLE

• In 2002, the Prestige oil tanker released 63,000 tons of oil off the coastline of France and Spain (Sabucedo, Arce, Ferraces, Merino, & Duran, 2008)
• Local coastlines were coated and the fishing industry was devastated
• However, individuals with high levels of perceived social support and high satisfaction with the economic aid they received fared better psychologically than individuals who reported low levels of perceived social support and low satisfaction with economic aid
• Thus, communities who band together may be able to advocate for more funding resources or lobby for rebuilding efforts, which could also ameliorate the effects of the disaster
Hope often is action-oriented in Western middle-class societies.

However, for others hope is instead associated with specific beliefs, an outgrowth of people’s personal relationships with God, connection to some higher power, trust in a responsible government, and superstition in some societies (Hobfoll, Briggs-Phillips, & Stines, 2003).

May be difficult to find optimism in technological/ecological disasters, but is a vital component to minimizing negative outcomes.

Slow-paced recovery progress after disasters are correlated with high levels of suicidality; however, optimism is correlated with low levels of suicidality (Kessler et al., 2008).
The act of displaying concern, interest, and a willingness to help can decrease feelings of hopelessness. Avoid pointing toward “silver linings” before a person is ready. May seem dismissive.

- Empathize with plight but do not reinforce catastrophizing
- Prevent victims from blaming themselves or family members
- Support personal, emotional, and spiritual growth when possible
Technological disasters are associated with:

- Erosions in interpersonal relationships, community connections, adaptive coping, income-loss spirals, and long and drawn-out litigation
- Those who lose the most social, economic, and personal resources are the most devastated and those who have the ability to sustain their resources have the best ability to recover

Can use the five essential elements of immediate and mid-term intervention to bolster community cohesion:

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WE THANK YOU FOR YOUR ATTENTION
REFERENCES


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