CHAPTER 1

Introduction to Disasters

CHAPTER OVERVIEW

After studying the material in this chapter, you should be able to do the following:

- Understand the importance of studying the effects disasters have on children, families, and communities.
- Identify the different types of disasters, and understand how each type affects children, families, and communities.
- Describe the major phases of disasters, and understand how individuals and communities behave during each.
- Understand the family-centered approach and the integrated ("three lenses") model used to study the effects of disasters.
- Define and use the key terms of this book: "disaster," "child," "victim," and "survivor."
- Understand how this book is organized.

We are naturally fascinated by disasters. We stay glued to our televisions as pictures of crashed planes and nuclear power plant accidents, hurricanes and floods, wars and terrorism—near and far—are played and replayed on the news. We often choose to spend the last moments of each day witnessing horrors in our communities and around the world.

News media bring disasters into our living rooms and onto our laptops and cell phones. We watched in 1998 when Hurricane Mitch hit Central America, in 2001 when planes crashed into the World Trade Center in New York City, at the end of 2004 when the international community responded to the Asian tsunami, in 2005 when Hurricane Katrina flooded New Orleans and more than 80,000 people died in the South Asian earthquake, in 2006 when miners were trapped in the Sago Mine disaster, and in 2009 when earthquakes hit Costa Rica and West Papua, Indonesia. We watched—almost first-hand—as reports were made public, often before aid agencies knew what was happening or could respond.

Even if we are somehow able to avoid televised disasters on the news, we spend our hard-earned money to watch movies that depict disasters—wars, terrorism, tornadoes, tsunamis, earthquakes, or meteors threatening to destroy the earth. It seems that our appetite for disasters and potential disasters—both fictional and nonfictional—is insatiable.

Consider, though, what it might be like to be caught in any one of these disasters.

The following activity, and many others offered throughout this book, will help provide a touch of reality to the subject matter, to bridge the gap between cognitive and affective understanding. For you to know how families and children respond to disasters, and to truly understand how society may help them, requires the ability to pit the academic material of this book against reality. First, how would you feel, what would you think, and how would you behave if you were exposed to a disaster? Second, how are others likely to feel and think, and what are they likely to do? These activities, labeled "Touching Reality," are presented to help you answer those questions and make those connections. Many can be carried out as group activities. At a minimum, you should read each and think it through. This book will be more meaningful and useful if you do.

Disasters are common throughout the world. News stories about them fascinate us—whether they concern the destructive power of natural disasters such as floods and fires, technological disasters such as plane crashes and nuclear power plant accidents, or complex disasters (the name for disasters intentionally caused by humans) such as wars and terrorist attacks. We want to understand what happened, to learn how people are responding, to be assured that something is being done to help, and to empathize with the families and children suffering from the effects of the disaster.

The study of disasters' psychosocial aspects—for example, what conditions mediate a child's and family's responses and why some children experience a quick return to their everyday life while others may never resume normal functioning—has several benefits, which are discussed in the following section.

WHY STUDY DISASTERS?

Why are we fascinated by disasters?

Is it our fear of death?

Is it our concern about others' suffering and our feelings of sympathy and empathy for the victims and survivors?

Is it our need to be prepared in case we experience a similar traumatic event?

Touching Reality

Experiencing a Disaster

The purpose of this activity is to provide a sense of what it is like to experience a disaster—to put you, the reader, into a situation so you can begin to understand your possible reactions. Commercial movies, available on video, are useful for this purpose. For example, several minutes of a film about a volcano, *Dante's Peak,* may be useful for depicting reactions when a disaster strikes a community. Take a look at the film, and note especially the section from the community meeting in the high school, when the first serious tremors are felt, until shortly after the volcano's eruption. Other disaster films, both old and new, include *Juggernaut, The Poseidon Adventure, Twister, Titanic, The Towering Inferno, Daylight,* and *The Day After Tomorrow.* Select a sequence in the film that depicts the onset of a disaster and people's initial reactions to it.

Use your imagination to put yourself in the scene. How are you feeling? What are you thinking? What are you doing?

Imagine you are a child in this scene. How are you feeling? What are you thinking? What are you doing?

Imagine you are a helper or rescue worker who arrives at the aftermath of such a disaster. How are you feeling? What are you thinking? What are you doing?

Is it our awe at the destructive power of whatever caused the disaster?

Is it our fascination with the human reaction to disaster—how the victims, rescue workers, and caregivers react, how the media portray the disaster, and how groups from the local, state, and national levels coordinate their response?

In recent years there have been increases in both the number and intensity of natural disasters, such as hurricanes and typhoons (Elsner, Kossin, & Jagger, 2008; Kossin, 2008), and in community violence (Aisenberg & Herrenkohl, 2008; Gullotta & McElhaney, 1999), wars (Chew, 2008; Solomon, 1995), and civilian war casualties (Boyden, 1994; Clemens, 2004). Because of these increases, we need more than ever to understand what factors put children and families at risk to suffer lasting distress or psychopathology, and what factors protect them and enhance their resiliency.

In *When Disaster Strikes: A Handbook for the Caring Professions*, Raphael (1986) discussed the following five reasons for studying the psychosocial aspects of disasters:

1. to learn common themes from descriptions of individual and group responses to different disasters
2. to increase the effectiveness of strategies to counteract disasters' effects
3. to understand stress and its effects in general, and stress connected with life events in particular
4. to determine which factors affect the psychological and social problems associated with life events
5. to provide important information to researchers and others who support and train caretakers, rescue workers, and anyone else who intervenes when disaster strikes.

Virgona (2008) added a sixth reason, which seems especially pertinent for this century: to answer questions to which society needs answers in order to try to maintain order in the face of uncertainty.

This book focuses on the effects of disasters on families and children, and its goal is to teach ways to provide them with better care in these extraordinary times of need. The goals of intervention after any disaster are to decrease immediate trauma and the chances of long-term damage; to decrease the time it takes for people to recover; and to facilitate recovery by decreasing risk factors, enhancing ways of coping, and building resilience.

A CD divided into four sections accompanies this book and provides additional resources for each chapter. The first section, Practice Sessions, contains scenarios describing different disaster types, such as hurricanes, floods, pandemic flu, and toxic spills, and questions that provide you with an opportunity to turn theory into practice. The second section, Tool Kit, presents surveys, participant worksheets for the workshops outlined in chapters 13 and 14, family plans, a family readiness kit, a booklet on mental health responses to mass violence and terrorism, and a variety of checklists. The third section, Resources, offers an annotated list of useful websites. The fourth section, Hurricane Floyd, presents three segments from the documentary *Hard Rain* (Campbell, 1999) that provide moving illustrations for chapter 5 of several families' reactions to a devastating hurricane and the flooding that followed it.

PERSPECTIVES GUIDING THIS BOOK

Each person's perspective determines how she or he makes sense of the world. During a disaster, we are exposed to more information than we can possibly manage, and our perspective determines what we will focus on first. A carpenter might focus on how a house did or did not maintain its integrity during a hurricane, and we—as social workers, nurses, Red Cross workers, disaster relief workers, mental health professionals, firefighters, police officers, teachers, and other helping professionals—might focus on the human element and the extent to which people maintain their integrity. Selecting what to focus on is not an objective process: When we pay attention to some things and ignore others, our observations are invariably distorted. Consider what your answer would be if someone asked you to describe what happened at a disaster site—it would be impossible to describe everything that occurred, and any description you gave would tell the other person as much about you, and what you think is important, as it would about the event.

Our perspective determines what we choose to concentrate on, and it determines how we arrange what we focus on in our effort to make sense of the world. The raw data we perceive with our senses can be organized in more than one way. For instance, there are at least four ways to describe people suffering from the effects of a disaster (Andersen, 1993): (1) We could focus on physical constructs and classify them by their appearance, such as "starving" or "covered with infected blotches." (2) We could focus on role constructs, such as "victim," "survivor," or "military personnel." (3) We could describe them by focusing on social behavior, calling them "friendly," "helpful," or "aloof." (4) We could use psychological constructs to describe them, such as "depressed," "anxious," "insecure," or "generous."

Once our perspective has guided our selection and organization of our perceptions, we interpret those perceptions in a way that makes sense to us (Janiszewski, 2008). Is the woman laughing because the flood destroyed her house and she is overwhelmed by the loss, or is she laughing because she had plans to raze the house and build a new one, and the flood strikes her as ironic? If our perspective—informed by our experience, assumptions about human

behavior, expectations, and understanding of human conduct—tells us to focus on problems, we might conclude that she is so overwhelmed and distraught by her loss that she is in shock, and her laughing is the same as crying. If our perspective tells us to focus on an individual's strengths, we might jump to the conclusion that she is laughing as a way to cope with her loss—without considering that from her perspective there may be no loss.

Similarly, perspectives have shaped the way this book organizes and interprets information about disasters, their effects on families and children, and methods for helping them manage those effects. Two broad perspectives guide it: The first is a family-centered approach, and the second is an integrated model that combines three different perspectives. Understanding these should help you appreciate how we organized this book, the various activities and examples we offer, and the information we present.

Family-Centered Perspective

The primary focus of this book is on families and children—how disasters affect them and how they can be helped to recover from disasters. To reflect this focus, this book takes a *family-centered* perspective (Dishion & Stormshak, 2007; Dunst, 1997; Minuchin, Colapinto, & Salvador, 1998) that reflects several beliefs about helping individuals, especially children, cope with trauma:

- Children live in families, not in isolation. Research often focuses on the effects family members have on each other when each is coping with trauma.
- Given the effects family members have on children, helping professionals should cooperate with families when considering interventions.
- It is crucial for the professional to secure the input and involvement of the family to ensure an intervention's success.

We can contrast this family-centered perspective with three other approaches social workers and other professionals might use to work with families.

In a *professional-centered* approach, the helping professional is viewed as an expert who determines a family's needs from her or his own perspective instead of the family's. The professional implements interventions because she or he perceives that the family is incapable of solving its own problem.

In a *family-focused* approach, the family is viewed as needing professional services, advice, and assistance. Unlike the professional-centered approach, however, where interventions are implemented by a professional who perceives a need, in this approach the family is encouraged to use professional networks of services to meet its own needs.

In a *family-involved* approach, family members are viewed as agents of the professional; they are enlisted to implement both child- and parent-level interventions that a professional sees as necessary for the benefit of the family.

A family-centered approach shares some characteristics with the three other approaches, yet adds a different perspective to the interaction between the professional and the family. In a family-centered approach, the professional is viewed as the agent and instrument of the family, not as someone who acts on the family. The professional intervenes in ways that help the family develop its capabilities and competencies so that it can help itself, rather than seeing the family as dependent on professional services to meet its needs. And interventions, including service delivery and resource provision, are driven by the family's needs and

desires, rather than by what the professional deems necessary.

Integrated Model: Three Lenses

This book also uses a model developed by Friedman (1993) that acknowledges that to understand, plan for, and respond most effectively to the needs of children and families, helping professionals must draw on several theoretical perspectives. Each perspective focuses on a different level or view of the situation; by combining them, we can understand the big picture. The result is an integrated model of intervention that allows us to understand and serve families in a multilevel, comprehensive way.

This model uses three key theoretical perspectives: (1) the cognitive or behavioral perspective, (2) the family systems perspective, and (3) the ecological perspective.

Cognitive–Behavioral Perspective. This perspective focuses on the functioning of individual family members (Taylor, 2006). Cognitive theory states that our thoughts and attitudes have a profound effect on our feelings and behavior. Behavioral theory states that scientific principles govern the development, maintenance, and change of behavior. Cognitive or behavioral strategies often focus on teaching new skills.

Family Systems Perspective. This perspective focuses on the family as an indivisible system of interrelating people (Broderick, 1993). Family-systems theory assumes that a family's process or context is a key variable in determining individual functioning. Problems are not located in people but in relationships. Since change takes place with a ripple effect (any change to one part of the system eventually affects the entire system), to influence one family member is to influence the whole family.

Ecological Perspective. This perspective focuses on the larger context—school, neighborhood, work, and community—in which families are embedded (Harvey & Tummala-Narra, 2007). It assumes that we must first understand the formal and informal supports around the family before we can understand family functioning. An ecological perspective carefully assesses the network of relationships and institutions that link families to their environment.

Another way to think of the integrated model is to envision it as a sequence of three lenses, each of which successively broadens our focus. The first lens focuses on the individual and provides the narrowest point of view. The second opens up our focus by considering the family. The third provides the broadest view by focusing on the community. Information seen through all three lenses is necessary for humane, effective intervention that has the potential to help individuals and families address their complex needs.

Following are the three key assumptions of an integrated model of family-centered services based on these three lenses:

1. *A person's thinking processes mirror his or her family processes.* How someone thinks about problems reflects not only her or his individual cognitions, but also the attitudes and problem-solving styles in that person's family. Cognitive–behavioral and family system approaches can be effective. When choosing a particular approach to use, the professional helper should consider the family's style, the helper's abilities, and what works for a particular family.

2. *Intervention in any dimension of a family's life resonates across all dimensions.* To teach a behavior management skill to a parent that results in a child adjusting to relocation after a disaster affects the cognitive skills of the parent and child, the family's process, and, eventually,

the family's relationship to the school and other aspects of its environment. Therefore, a behavioral intervention is also a family and an ecological intervention.

3. *The context in which a person lives affects her or his cognitive abilities.* Members of a chaotic, grief-stricken family find it difficult to focus on problem solving. When helping professionals intervene in the family process and provide structure, they also reduce anxiety and improve communication. As a result, family members may be able to think more clearly, examine alternatives more calmly, and solve problems more effectively. For example, when family members are facing homelessness, they may not be able to process information clearly; thus, an ecological intervention might be effective in addressing immediate cognitive problems.

These perspectives are summarized in Table 1-1.

KEY TERMS USED IN THIS BOOK

The terms "disaster," "child," "victim," and "survivor" appear frequently in the literature on disasters. Before going any further, we will look

Table 1-1
Summary of Key Perspectives and Approaches

Family-Centered Perspective	
Key points	**Other, contrasting perspectives**
Children live in a context of families and not in isolation. Given the effects family members have on children, helping professionals should partner with families when considering interventions. It is crucial for professionals to secure the input and involvement of the family to ensure an intervention's success.	*Professional-centered approach:* The helping professional is viewed as an expert who determines a family's needs. *Family-focused approach:* The family is viewed as needing professional services, advice, and assistance. *Family-involved approach:* Family members are viewed as agents of the professionals.
Integrated Model	
Three lenses	**Assumptions**
The cognitive or behavioral perspective focuses on the functioning of individual family members. *The family systems perspective* focuses on the family as an indivisible system of interrelating people. *The ecological perspective* focuses on the larger context—school, neighborhood, work, and community—in which families are embedded.	Intervention in any dimension of a family's life resonates across all dimensions. The context in which a person lives affects her or his cognitive abilities. A person's thinking process mirrors the dynamics of his or her family.

at each of these terms and define how they are used in this book.

What Is a Disaster?

Individuals often have different ideas of what a disaster is, depending on their experiences. Often, what researchers define as disasters differ from these everyday definitions.

What types of events do you think of when you hear the word "disaster"? Do you think of a "tragic" car accident in which someone is injured, for instance, or a "disastrous" house fire that affects a single family? Do you describe getting stuck in traffic—when there is no loss of life or property, only frustration and lost time—as a disaster?

It is likely that many of the events you label as disasters involve destruction of property, loss of life, and widespread injury. Historically, labeling an event a disaster has meant that it has several characteristics in addition to these three. According to Saylor (1993), a disaster also "has an identifiable beginning and end; adversely affects a relatively large group of people; is 'public' and shared by members of more than one family; is out of the realm of ordinary experience; and, psychologically, is traumatic enough to induce stress in almost anyone" (p. 2). Vogel and Vernberg (1993) added three characteristics to this list: Disasters are "events that are relatively sudden, highly disruptive, [and] time-limited (even though the effects may be longer lasting)" (p. 465).

Some definitions of disaster depend on the perspective of the group offering the definition. For example, the American Red Cross definition focuses on the people affected: "A disaster is an occurrence such as a hurricane, tornado, storm, flood, high water, wind-driven water, tidal wave, earthquake, volcanic eruption, drought, blizzard, pestilence, famine, fire, explosion, building collapse, transportation accident, or other situation that causes human suffering or creates human needs that the victims cannot alleviate without assistance" (Statement of Understanding, 2008). And the Centre for Research on the Epidemiology of Disasters (International Strategy for Disaster Reduction, 2006), with its focus on public health and long-term socioeconomic effects, defined a disaster as a "situation or event, which overwhelms local capacity, necessitating a request to national or international level for external assistance . . . an unforeseen and often sudden event that causes great damage, destruction and human suffering."

The American Red Cross (1987) classified disasters according to five levels. A level I disaster is both local and recurrent. Levels II, III, IV, and V are defined by how much they cost the American Red Cross: Level II costs the agency less than $50,000, level III costs from $50,000 to $250,000, level IV costs from $250,000 to $2.5 million, and level V costs more than $2.5 million. Most (in)famous disasters are of the level V variety. The 1993 Midwest floods were estimated by the Federal Emergency Management Agency (FEMA) to have a total cost of $802 million, and the 1992 Los Angeles riots to have a total cost of $180 million. By classifying disasters according to cost as well as type (which will be discussed below), the American Red Cross is able to make decisions about staffing and other response issues.

By combining these multiple perspectives, we can describe a disaster as an event that exhibits the following eight characteristics:

1. It involves one or more of the following: destruction of property, injury, and loss of life.
2. It has an identifiable beginning and end.
3. It is relatively sudden and time-limited (even though the effects may be longer lasting).

4. It adversely affects a relatively large group of people.
5. It is public in that it affects members of more than one family.
6. It is seen as out of the realm of ordinary experience.
7. It is psychologically traumatic enough to induce stress in almost anyone.
8. It causes suffering or creates needs that cannot be alleviated without assistance.

If we apply these eight defining characteristics, many events that people refer to as "disastrous," such as job loss, a single house fire, or the murder of an individual in a robbery, would not qualify as disasters. You may have noticed that not all of the eight characteristics are present in every disaster. For example, it may be hard to pinpoint when a disaster begins or ends, as often happens when dealing with chemical, biological, or radiological events; or it may be relatively easy to determine when it begins but not when it ends—for example, the Chernobyl nuclear power plant disaster began on the morning of April 26, 1986, but its effects are still being felt.

The following summary of current research, like others throughout this book, provides a closer look at how researchers study and think about disasters. There are many ways to learn about disasters, including direct experience, observation, interaction with clients, and reading the results of others' research. Expert clinical practice is continually informed by research that provides new evidence of intervention methods that may be more useful and result in more positive outcomes for certain people or particular circumstances (Fraser, Richman, Galinsky, & Day, 2009). The "Spotlight on Research" sections of this book are meant to bridge the gap between research and practice. Like the "Touching Reality" segments, they provide another way for you to learn about the effects of disasters on families and children and how professionals can help families and children cope. In the Spotlight on Research "Children's Reactions to Disasters," two researchers describe children's reactions to disasters and detail some of the variables that influence how a child is likely to react.

Disasters affect more than children—they also affect families and the people who work as helpers. In the Spotlight on Research "Reactions to the September 11, 2001 Attack on New York's World Trade Center," two researchers present their summary of volunteers' observations of parents and coworkers, as well as the volunteers' own reactions to the disaster.

Types of Disasters. In addition to enumerating characteristics that qualify an event as a disaster, another useful approach is to develop a typology of disasters based on the origin or cause of the event. Raphael (1986) discussed two broad classifications: natural and man-made disasters; Vogel and Vernberg (1993) further subdivided the category of man-made disasters into two parts: "acts of human violence, such as sniper shootings," and "failures of technology or results of human error, such as plane crashes and toxic contamination" (p. 465).

This book classifies disasters into three categories: natural disasters (such as earthquakes and hurricanes) and technological disasters (such as plane crashes and toxic spills), both of which are unintentional, and complex disasters (such as terrorist acts, wars, and gang violence), which are the result of human intention.

It is important to distinguish among the different types of disasters so that we may understand the different effects each has on children, families, and communities (Mercuri & Angelique, 2004). Although later chapters go into more detail, we present here some of the key differences in the effects different types of disasters have on children. *Natural disasters,* such as

Spotlight on Research

Children's Reactions to Disasters

A recent review of research on disasters, focused on factors that influence how children respond, defined disasters as "events that are relatively sudden, highly disruptive, time-limited (even though the effects may be longer lasting), and public (affecting children from more than one family)." This definition excludes events that many would consider disastrous, such as family violence.

Systematic research on children's responses to disasters is relatively recent. One of the first such studies took place in 1953, after a tornado struck a Vicksburg, Mississippi, movie theater during a Saturday matinee. Two months after the tornado, parents completed a questionnaire about their children's reactions, and researchers interviewed many of them.

Two disasters studied in the 1970s were the 1972 Buffalo Creek Disaster in West Virginia, in which the collapse of a dam caused flooding, and the 1976 Chowchilla (California) school bus hijacking in which three men imprisoned the driver and 26 children in a buried van.

The American Psychiatric Association introduced posttraumatic stress disorder (PTSD) as a diagnostic category in the *Diagnostic and Statistical Manual of Mental Disorders, Third Edition—Revised (DSM–III–R);* it later added PTSD symptoms specific to children. Beginning in the 1980s, researchers began to investigate children's responses to extreme stress, including disasters, more extensively.

The most common disaster responses of children include "specific fears [fear of recurrence is the most common], separation difficulties, and symptoms that are on a continuum of stress response syndromes and PTSD [such as reenactment in play, sleep problems, increased irritability, regression, somatic complaints, and guilt]" (p. 468). School performance often declines.

Factors that influence children's reactions to a disaster include the following:

- age
- sex
- being exposed to grotesque or life-threatening events
- bereavement (those whose family members or close friends were killed or injured are likely to have more severe reactions)
- separation (not only from parents, but from familiar surroundings)
- injury
- physical losses and disruption of the environment
- prior pathology and prior traumatic experiences
- the severity of parents' responses
- availability of social support

Vogel, J. M., & Vernberg, E. M. (1993). Task force report, part 1: Children's psychological responses to disasters. *Journal of Clinical Child Psychology, 22,* 464–484.

Spotlight on Research

Reactions to the September 11, 2001, Attack on New York's World Trade Center

Following the September 11, 2001, tragedy in New York City, two groups of volunteers—from Disaster Child Care and Childcare Aviation Incident Response—provided care for 1,600 children of families whose loved ones died when the World Trade Center collapsed. A year after the disaster, John Kinsel and Tom Thomasgard solicited volunteer observations of parents and coworkers, as well as the volunteers' own personal reactions to the experience.

Observations of parents indicated that they were distressed—seemingly dazed and fearful—and very reluctant to separate from their children, leading them to check in often at the childcare center to make sure their children were safe. The volunteers remembered that the parents required a great deal of reassurance and comforting.

The volunteer caregivers identified the importance and difficulty of managing their own emotions to ensure they could maintain a supportive relationship with the children. Comparing their reactions to this disaster with others, they noted that they experienced greater emotional strain in the aftermath of the 9/11 attack, perhaps because of the greater complexity involved in treating a large and ethnically diverse group of children, as well as the magnitude of the disaster itself. Some of the volunteers described themselves as in shock and feeling dazed.

Among the recommendations the authors offered are these: Try to keep families together; if separation is necessary, communication while separated and quick reunification should be top priorities. Also, priority should be given to caring for the emotional needs of the caregivers and first responders, using several debriefing options, including individual and group sessions, offered both daily and when a volunteer leaves.

Kinsel, J. D., & Thomasgard, M. (2008). In their own words: The 9/11 disaster child care providers. *Families, Systems, & Health, 26,* 44–57.

earthquakes, tornadoes, fires, floods, and hurricanes, usually strike suddenly with little or no warning and are caused by forces of nature. According to FEMA (2006), after a natural disaster, children from birth to age two may become irritable or cry and want to be held and cuddled more than usual, and they often remember the sights, sounds, and smells associated with the trauma. Very young children, under age four, have an underdeveloped level of consciousness that prevents them from fully appreciating the extent of a natural disaster—what is important is their primary caretaker's reaction to it. Preschoolers (ages two to six) tend to feel helpless and powerless after a natural disaster, whereas school-age children (ages six to 10) may become preoccupied with the details of the trauma and experience a variety of reactions, including guilt, a sense of failure, or fantasies of being a rescuer. Preteens and adolescents typically react in a manner that contains both childlike and adult elements. Teenagers may experience a feeling of

Hurricane Katrina

On August 24, 2005, tropical storm Katrina crossed over Florida, just barely reaching hurricane status. However, once it hit the warm waters of the Gulf of Mexico it rapidly gained intensity. On August 28, with sustained winds of 175 mph, it was a Category 5 hurricane.

Since 80 percent of New Orleans is below sea level, the threat of a hurricane put the city and its residents in great danger. Levees built to protect the city from flooding were not strong enough to withstand a storm surge of this magnitude—studies from the Army Corps of Engineers and FEMA warned that a hurricane touching down on New Orleans could lead to thousands of deaths.

On August 28, a day before the storm surge flooded the city, the mayor of New Orleans ordered a mandatory evacuation for more than 1.2 million people. For those who had not already left the city on their own, or did not have the means to leave the city, the government set up shelter in the Louisiana Superdome in New Orleans. Over 20,000 Katrina survivors were housed there, creating a breeding ground for chaos. Although a majority of evacuees went to Texas, many states offered shelter, including places as far away as Oregon and California.

Hurricane Katrina was one of the costliest and deadliest hurricanes in American history, causing more than $75 billion in damage and killing an estimated 1,600 people. Communities on and near the Gulf Coast were faced with a devastating reality as they began the process of rebuilding. Volunteers and aid organizations from all over the country traveled to the stricken region; help came from federal and state sources, large and small nongovernmental organizations, and over 70 countries (Forero & Weisman, 2005), which pledged money or other assistance.

Although a hurricane is classified as a natural disaster, how do we classify a disaster caused by levees collapsing, the decision to evacuate people to an inadequate shelter, and an uncoordinated and inadequate local, state, and federal response?

invulnerability, or they may be overwhelmed by a wide range of emotions and feel unable to discuss them with their family.

Although some reactions are the same regardless of the type of natural disaster, many reactions differ depending on the specific disaster—for instance, hurricane or earthquake (La Greca & Prinstein, 2002), wildfire (McDermott & Palmer, 2002), flood (Assanangkornchai, Tangboonngam, Sam-Angsri, & Edwards, 2007; Jacobs et al., 2002), or a residential fire involving many people (Jones & Ollendick, 2002, 2005).

Technological disasters occur when something made by humans for human use becomes defective with little or no warning, resulting in psychological and physical harm (Shaluf, 2008; Shaluf, Fakhru'l-Razi, & Mustafa, 2003). Examples are a building collapse, a plane crash, a train derailment, or a toxic industrial accident. Spills and accidents at nuclear power plants—which are, of course, relatively recent events—differ from many other types of disasters because of their significant long-term consequences for human health and the environment (Wroble & Baum, 2002).

Chernobyl Nuclear Power Plant Accident

The explosion at the Chernobyl nuclear power plant, which occurred on the morning of April 26, 1986, resulted from a safety experiment: Operators were testing the ability of plant equipment to provide electrical power, and the team in charge of the test had not coordinated the procedure with those responsible for the safety of the nuclear reactor. The Chernobyl power plant did not have the containment structure common to most nuclear power plants, so radioactive material escaped into the environment. Chernobyl Unit 4 reactor contained about 190 metric tons of uranium dioxide fuel and fission products, of which 13 percent to 30 percent escaped.

On the second day after the disaster, Soviet authorities started evacuating people, and by about a month later, all those living within an 18-mile radius of the plant—about 116,000 people—had been relocated. Although over 300,000 people were resettled because of the disaster, millions continue to live in the contaminated area.

Belarus received about 60 percent of the contamination, and a large area in Russia south of Moscow was also contaminated, as were parts of northwestern Ukraine. The radioactive cloud from the explosion drifted as far away as Finland, Ireland, and Canada.

Officially, the total number of fatalities caused by the Chernobyl explosion is small; however, researchers have classified as many as 600,000 people as significantly exposed. An exposure of about 100 rad can cause radiation sickness, and participants at a 1988 conference in Kiev estimated that about 10,000 people were exposed to that amount during the disaster, and about 2,000 people had received twice that amount (Miner-Nordstrom, 2003). Professional observers continue to see effects in those who were exposed to the radiation. And today, decades after the catastrophe, restrictions remain in place on the production, transportation, and consumption of food contaminated by Chernobyl fallout. A 2006 report by the International Atomic Energy Commission, *Environmental Consequences of the Chernobyl Accident and Their Remediation,* provides summaries of research and offers recommendations for future assessments and monitoring, as the effects of this technological disaster continue to be felt worldwide.

Children often have some familiarity with natural disasters and some ability to cope with them. Technological disasters are more unfamiliar, and children typically do not know how they should react or what their feelings mean when such a disaster occurs. For example, children had no model to guide their reactions to the *Challenger* explosion (Wright, Kunkel, Pinon, & Huston, 1989). Similarly, children have a difficult time processing a toxic spill because it has no definitive end, and they are left in a state of relentless anxiety and fear (Wroble & Baum, 2002).

Complex disasters, catastrophic events of intentional human design, include a much broader range of events than natural and technological disasters. Community violence (Kuperschmidt, Shahinfar, & Voegler-Lee, 2002), civil war, government-sponsored terrorism, terrorism between nations, and war between

Bombing of the Alfred P. Murrah Federal Building, Oklahoma City

On April 19, 1995, at 9:03 a.m., Timothy McVeigh detonated a 4,800-pound explosive that blasted through the Alfred P. Murrah Federal Office Building in Oklahoma City. One hundred sixty-eight people were killed, including 19 infants and children and one rescue worker; 614 were treated in outpatient clinics; and 82 were hospitalized. In addition to the people who were physically wounded, an immeasurable number of people were indirectly harmed. Thirty-eight percent of the population of the area knew someone who was killed or injured in the blast, and people who were in areas near the blast, such as children in nearby schools, were traumatized by the disaster. In addition, children who did not live in Oklahoma City or know anyone harmed in the bombing were affected by the disaster through a loss of their sense of safety.

Agencies coordinated their immediate interventions so that resources were not exhausted or services duplicated. The Oklahoma Department of Health, the Department of Mental Health and Substance Abuse Services, and the Department of Psychiatry and Behavioral Sciences at the University of Oklahoma worked to secure the building, recover victims, care for the mentally and physically injured, create a hotline, acquire and disburse medical supplies, and train workers to deal with posttraumatic stress. The core of the intervention was the creation of the Compassion Center, focused on the most vulnerable groups—those who were still missing family or friends. The operations focused on providing a sense of structure, empowering and treating families as normal people in an abnormal situation, and understanding the emotional climate of vigilant hope.

nations (Gurwitch, Sitterle, Young, & Pfefferbaum, 2002; Klingman, 2002) are all examples of complex disasters. Summarizing numerous studies of the effects of war and political violence on children, Swenson and Klingman (1993) found, for example, that many children exposed to the war in Lebanon had "symptoms of post-traumatic stress . . . and feelings of betrayal that altered their sense of trust" (p. 139), and that children exposed to the political violence in Cambodia who lived "in foster care were more likely to have a psychiatric diagnosis than children living with their family" (p. 148).

Sitterle and Gurwitch's (1999) examination of the bombing of the Alfred P. Murrah Federal Building in Oklahoma City reported responses associated with different age groups, particularly very young children, who are rarely studied. For example, infants experienced more sleep difficulties and displayed clingy behavior; toddlers showed these behaviors as well as a heightened response to loud noises; and children ages three to five displayed regressive behaviors, such as toileting accidents.

Researchers who study children's reactions to complex disasters often ask parents to evaluate their children's behavior. In a study of reactions to the September 11, 2001, terrorist attack on the World Trade Center, Schlenger et al. (2002) found that more than 60 percent of the parents in the New York metropolitan area reported that their children were upset, with the

symptoms of those who were most upset including trouble sleeping, irritable behavior, and separation anxiety.

Phases of Disasters. Finally, disasters may be considered in terms of their major phases. Kafrissen, Heffron, and Zusman (1975), for example, defined seven phases through which people and communities go. The first is alarm, when disaster is predicted, followed by threat, when an assessment is made of the possible danger. (Disasters that occur suddenly skip these first two phases.) Next is impact, when the disaster occurs, followed by inventory, when people survey the damage and recovery begins. This is followed by rescue, when helpers begin to assist people who have been exposed to the disaster, and then remedy, when morale is high due to the large-scale relief efforts taking place. The final stage is restoration, when people begin to see that recovery is possible and that the community will survive.

Another useful phase perspective was developed by Farberow and Frederick (1978/1996). Their first phase is the heroic phase, which occurs at impact and immediately thereafter, during which emotions are strong and direct and people are called on to respond in heroic ways to save their own and others' lives. Next is the honeymoon phase, which occurs about a week after a disaster and can last several months. During this phase, there is an influx of support from government agencies, and people clear debris and trust that they will be helped. Community groups care for the needs of community members; optimism is high. The honeymoon phase dissolves into the disillusionment phase, which can last for a year or more. Now, strong feelings of disappointment and bitterness occur, due to inevitable delays or failures in promised aid, as outside agencies pull out, community groups weaken, and people turn from helping others to helping themselves. Finally, the reconstruction phase may last for several years as community members realize that they will have to do most of the rebuilding themselves to reestablish their predisaster way of living.

These phases may take on different configurations when dealing with a chronic disaster, such as war or communal violence that stretches on for years or even decades. In those instances, the reconstruction phase is more complicated, and the risk of emotional damage and negative long-term effects is increased.

Silverman and La Greca (2002) have offered a five-phase model—preimpact, impact, recoil, postimpact, and recovery and reconstruction—that is helpful in understanding children's reactions to a disaster. All such descriptions of disaster phases are only useful, however, insofar as they inform assessment and intervention strategies.

What Is a Child?

If you were to ask what ages define childhood, you would probably be given a definition typical of the majority of people raised in the United States: A child is a person who is younger than 18 years old. At age 18, a person is considered old enough to enter into a legally binding contract.[1]

> In South Africa, childhood has generally been defined as spanning the period from birth to 10 years old. However, between 10 years and 18 years, the term "youth" has been commonly used. In Palestine on the other hand, during the Israeli occupation, presumably because of the active role played there by children in the Intifada "the Israel military's definition of the

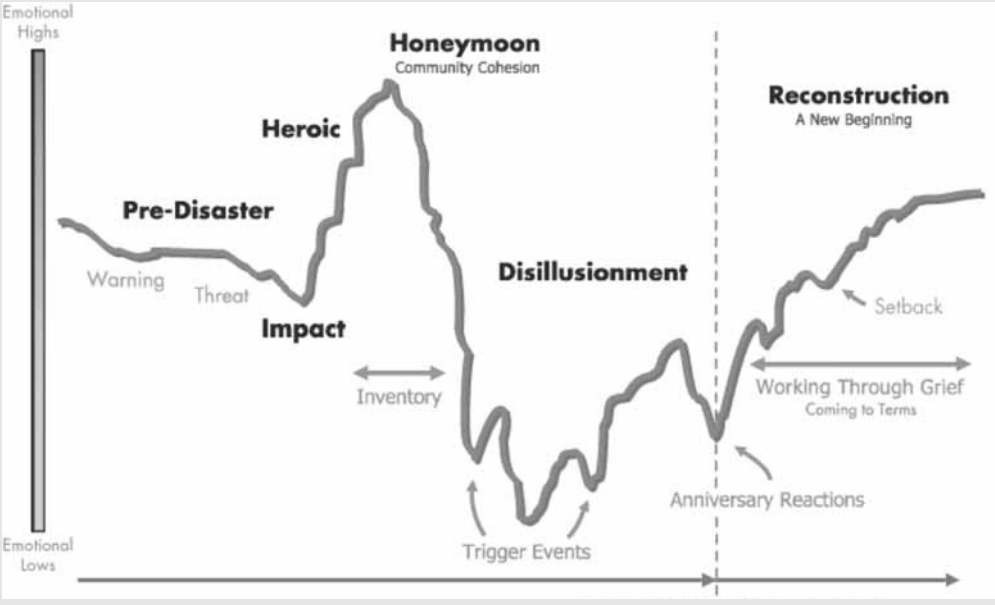
1. By no means is 18 a universally accepted age for adulthood. Researchers have warned their readers to explore each cultural context separately (Boyden, 1994).

Spotlight on Research

Phases of Disaster

Diane Myers and David Wee (2005) remind us that although many disasters go through similar phases, no universal timeline exists, and predictions need to take into account the particular context—such as the type of disaster, the amount of destruction, and the culture of those affected. In general, however, disasters may be conceptualized as going through five phases.

Figure 1-1
Phases of Disaster: Collective Reactions



Source: U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration. (2000). *Training manual for mental health and human services workers in major disasters* (2nd ed.). Washington, DC: Author.

> legal criminal age has been remarkably fluid. In 1987, it was 16; by 1988, 14; more recently it has been 12." (Cairns, 1996, p. 9)

Child labor laws are flexible in their definition of "child," as are the laws that distinguish which young criminal suspects will be tried as adults and which will be tried as children (Cipriani, 2009). For example, in the United States, age 14 is the cutoff for considering a person an adult if the crime is particularly heinous. The minimum age at which a person may be subject to penal law varies from seven in Qatar, Myanmar, Egypt, Estonia, and Thailand, to 18 in Peru and Belgium. In the United States, most states set age 11 or 12 as the cutoff.

Warning and threat (the predisaster phase): This is the time before impact, when people might engage in mitigation, such as creating a home disaster kit, or do nothing, denying the possibility of a disaster occurring. Some disasters occur with no advance notice, such as an armed attack on a school; others, such as hurricanes, have a great deal of lead time.

Impact and inventory (the heroic phase): Some disasters, such as a toxic waste leak, have a vague beginning point; others, such as a bombing or bridge collapse, have a precise beginning. After the disaster strikes, inventory begins with information seeking: What happened? Where are my friends and family? How is my home, and how is my neighborhood? Heroic, altruistic behavior is often seen during this early phase as people watch out for and protect each other and even risk their own safety to help others.

Remedy (the honeymoon phase): Optimism and expectations for a quick recovery mark the beginning of this phase as people pitch in and collaborate for the good of their community. The feeling is that the worst is over. But by the end of this phase, as the extent of the damage becomes clear, insurance companies are confronted, and outside aid dries up, fatigue and lowered expectations set in.

Disillusionment (the exhaustion phase): Beginning several days or weeks after impact, people become disillusioned. Resources may seem insufficient or poorly distributed, red tape may cause delays, temporary housing may become unsafe or overcrowded, and other problems may arise. As sleeplessness, loss of intimacy, and other problems take their toll, the feelings of shared community vanish. Toward the end of this phase, as the community moves toward recovery, anniversary remembrances and events that remind community members of the disaster, such as threats that come with a new hurricane season, may trigger setbacks.

Recovery (the reconstruction phase): People move beyond self-interest and start to rebuild physically, financially, emotionally, and spiritually. Their goal is to achieve, as much as possible, the predisaster level of functioning. Interventions ensure healing of both community members and the community.

Myers, D., & Wee, D. F. (2005). *Disaster mental health services: A primer for practitioners.* New York: Routledge.

Ideas about children and childhood have changed significantly over the years. This is obvious not only through analysis of historical writings but by examination of the way children are portrayed in the artwork of different eras. For example, until the Middle Ages, there was no separate category for childhood in Europe, and children were treated as small adults. Painters gave children faces almost indistinguishable from those of adults. Children may be seen as small adults, or innocents, or people needing training and discipline to become full members of society, or young people enjoying an age of exploration—all these views affect how children are perceived by a culture and what age defines a child (Heller, 1998). When

we refer to children in this book, we will be referring to people under the age of 18 unless otherwise specified.

How Does a Victim Differ from a Survivor?

A popular distinction between the words "victim" and "survivor" focuses on attitude and self-perception: defeated versus resilient, hopeless versus hopeful, pessimistic versus optimistic. The popular perspective, however, is not useful when talking about disasters. Young (1998), in her book for the National Organization for Victim Assistance (NOVA), defined the roles of disaster victims and disaster survivors. She defined *victims* as

> individuals who took the brunt of the catastrophe; those at the center. There are dead victims; seriously physically injured victims; victims with minor physical injuries; victims who were not physically injured but were at the center and lost property; witnesses who lost nothing tangible but were at the center of the catastrophe—perhaps witnessing the death of someone else. (Young, 1998, Appendix A, p. 22)

Survivors, however, are

> individuals whose loved ones were killed in the disaster. They may include family members, friends, partners, and so on.
>
> 1. May be preoccupied with how the victims died—did they feel pain, were they conscious, how long did the pain last?
> 2. May be angry at the victims who survived and find it difficult to talk to their significant others . . .
> 3. They often encounter practical problems in body identification, death notification procedures, funeral arrangements, body transportation, and reclaiming the deceased's property . . .
> 4. Anger at God is not uncommon, particularly when God spared others and not the loved one.
> 5. Their imagination of the pain, the anguish, the fear that their loved ones endured may cause horror and revulsion.
> 6. They may feel guilt at something they did or did not do, when seeing or talking with the victim just before he or she died.
> 7. Grief tends to be the predominant emotion; however, for some survivors, their grief is repressed in their anger at immediate problems or the disaster itself. (Young, 1998, Appendix A, p. 23)

The primary distinction between a victim and a survivor seems to hinge on the answers to two questions: Did the disaster directly affect the individual? Is the individual in a crisis state? If the answers to both are yes, the individual is a victim, and if the answers are no, he or she is a survivor. Problems arise, however, when one answer is yes and the other no. For instance, there are people who may have been directly affected but are not in a crisis state—how should they be labeled? How do we label a woman who loses her home to a hurricane but is not unhappy about it, since she planned to move and will receive substantial compensation for her lost property? And how do we label a man who was not directly affected by a terrorist attack—who was not injured physically, did not lose any property, and so on—but who identifies so strongly with those directly affected that he is in a crisis state?

Clearly, when a disaster occurs there are those who are adversely affected and who need intervention to minimize the impact of the disaster on their well-being. To avoid the pitfalls of labeling—which denies people their humanity

by identifying them with a state of being that ignores everything else they are—we will name a person who is suffering from the effects of a disaster a disaster *client*. A client is a person first and not simply a victim or a survivor. If a helper can see the client as an individual suffering from the effects of a disaster, he or she is less likely to assume the existence of a crisis state, less likely to view the person as a victim, and more likely to begin interacting with the client to determine just what "suffering from the effects of a disaster" means for this particular individual.

Nevertheless, the word "victim" is still the word most commonly used to describe people suffering from the effects of a disaster, and the word "survivor" is still the word most commonly used to describe people who no longer suffer a great deal from the effects of a disaster but who suffered at one time. Therefore, these two words define endpoints of a continuum along which people may be arranged. Where on the continuum someone stops being a victim and starts being a survivor is uncertain; however, looking at each affected person as a client and not simply as a category helps clarify the individual's unique needs to the helper.

HOW THIS BOOK IS ORGANIZED

The book is divided into four parts. Part I (this chapter and the next) provides a framework for understanding disasters. Chapter 2, Models for Understanding the Effects of Disasters, reviews several frameworks for thinking about how personal aspects and aspects of the environment and the disaster itself influence how individuals are affected by a disaster experience.

Part II, Effects of Disasters (chapters 3 through 7), focuses on how people react to the three types of disasters. Chapter 3, Children and Disasters, discusses factors that influence children's reactions to disasters, including their developmental stage, sex, and other characteristics, as well as specific resiliency characteristics and their usefulness in assessing a child's likelihood to recover from a disaster.

Chapter 4, Family and Community Reactions to Disasters, presents several perspectives on families' response to disasters and shows how helpers may use each to assess the stressors family members encounter after a disaster. It also discusses community involvement in disasters and community healing.

Chapters 5, 6, and 7 focus on the three major types of disasters. Chapter 5 describes how natural disasters differ from other types and suggests ways that children, families, and communities can mitigate their effects. Chapter 6 enumerates the various types of technological disasters and discusses their inevitability. Chapter 7 looks at families in complex disasters, communal violence, and the effects of different types of complex disasters.

Part III, Disaster Intervention (chapters 8 through 10), discusses ways to help before, during, and after a disaster. Chapter 8, Preparation and Mitigation, introduces three phases: primary, secondary, and tertiary prevention. Chapter 9, Crisis Intervention, discusses immediate first aid, early crisis intervention, and group crisis intervention, and highlights the needs of children and families during a disaster. Chapter 10, Postdisaster Intervention, presents detailed descriptions of methods for use with children and families in the long term.

Part IV (chapters 11 through 14) addresses special topics in disaster relief. Chapter 11, Community Disaster Plans, focuses on community preparedness and organization as ways to lessen the effects of disasters and emphasizes the need to test plans in a variety of simulations. Chapter 12, Disasters and the Media, focuses on the benefits and challenges of working with the media during a disaster. Productive media

relations are an important part of successful disaster recovery, and this chapter is a guide to developing and navigating those relationships.

The final two chapters are presented in the form of workshops, with trainer notes and participant worksheets as well as useful background information and commentary. Chapter 13, Vulnerable Populations, addresses working with elderly, low-income, cognitively disabled, non-English-speaking, and other populations that may be especially vulnerable to the effects of disasters. Chapter 14, Helping the Helpers, provides disaster recovery workers with ways to take care of themselves and each other. It presents both individual self-help methods, such as guided imagery, and group methods, such as Group Crisis Intervention.

SUMMARY

Recent increases in disasters of all types make it imperative to study their effects. By studying disasters we can develop strategies to help children, families, and communities prepare for and respond to them effectively; studying disasters also leads to improved training of workers who assist with disaster recovery efforts.

Two broad perspectives guide this book. The first is the family-centered perspective, which argues that professionals should intervene in ways that help the family develop its capabilities and competencies so that it can help itself. The second is the integrated model, which includes cognitive–behavioral, family systems, and ecological perspectives. This model systematically expands its focus from the individual to the family to the community.

The term "disaster" as used in this book differs from its everyday use. To qualify as a disaster, an event has to meet particular criteria: It has to adversely affect a relatively large group of people, be out of the realm of ordinary experience, and be psychologically traumatic enough to induce stress in almost anyone. Three types of disasters may be distinguished—natural, technological (involving human error or the unintentional failure of technology), and complex (involving intentional human design).

Disasters typically occur in phases, beginning (unless they occur suddenly) with a warning or alarm and proceeding through the actual disaster and on to recovery. Phases also may be conceptualized as heroic (during impact and immediately thereafter), honeymoon (a period of recovery and high optimism), disillusionment (when disappointment and bitterness set in), and reconstruction (as community members rebuild).

The term "child" as used in this book refers to an individual younger than 18 years of age, although this cutoff point is not universally recognized.

The term "victim" refers to those the disaster directly affects and are in a crisis state—people suffering from the effects of a disaster. The word "survivor" refers to people who no longer suffer a great deal from the effects of a disaster but who suffered at one time. To avoid the pitfalls of labeling, we name a person who is suffering from the effects of a disaster a disaster "client," not simply a victim or a survivor.

The accompanying CD contains links to a number of Web sites providing up-to-date disaster information.

REFERENCES

Aisenberg, E., & Herrenkohl, T. (2008). Community violence in context: Risk and resilience in children and families. *Journal of Interpersonal Violence, 23,* 296–315.

American Red Cross. (1987). *The disaster services human resources system member's handbook*. Washington, DC: Author.

Amnesty International. (2008). *Child soldiers*. Retrieved from http://www.amnestyusa.org/children/child-soldiers/page.do?id=1051047

Andersen, P. A. (1993). Cognitive schemata in personal relationships. In S. Duck (Ed.), *Individuals in relationships* (pp. 1–29). Newbury Park, CA: Sage Publications.

Assanangkornchai, S., Tangboonngam, S., Sam-Angsri, N., & Edwards, J. G. (2007). A Thai community's anniversary reaction to a major catastrophe. *Stress and Health, 23,* 43–50.

Boyden, J. (1994). Children's experiences of conflict related emergencies: Some implications for relief policy and practice. *Disasters, 18,* 254–267.

Broderick, C. (1993). *Understanding family process: The basics of family systems theory*. Newbury Park, CA: Sage.

Cairns, E. (1996). *Children and political violence.* Oxford, England: Blackwell Publishers.

Campbell, D. (Producer). (1999). *Hard rain: Lessons learned from the flood of '99* [Motion picture]. (Available from the University of North Carolina Center for Public Television, 10 T.W. Alexander Drive, P.O. Box 14900, Research Triangle Park, NC 27709-4900).

Chew, S. C. (2008). *Ecological futures: What history can teach us.* Lanham, MD: AltaMira Press.

Cipriani, D. (2009). *Children's rights and the minimum age of criminal responsibility: A global perspective.* Burlington, VT: Ashgate Publishing.

Clemens, W. C., Jr. (2004). *Dynamics of international relations: Conflict and mutual gain in an era of global interdependence* (2nd ed.). Lanham, MD: Rowman and Littlefield.

Dishion, T., & Stormshak, E. A. (Eds.). (2007). *Interviewing in children's lives: An ecological, family-centered approach to mental health care*. Washington, DC: American Psychological Association.

Dunst, C. J. (1997). Conceptual and empirical foundations of family-centered practice. In R. Illback, C. Cobb, & J. Herbert Jr. (Eds.), *Integrated services for children and families: Opportunities for psychological practice* (pp. 75–91). Washington, DC: American Psychological Association.

Elsner, J. B., J. P. Kossin, J. P., & Jagger, T. H. (2008, September 4). The increasing intensity of the strongest tropical cyclones. *Nature, 455,* 92–95.

Farberow, N. L., & Frederick, C. J. (1996). *Training manual for human service workers in major disasters* (DHHS Publication No. SMA 90-538). Washington, DC: U.S. Government Printing Office. (Original work published 1978)

Federal Emergency Management Agency. (2006). *Helping children cope with disaster*. Retrieved from http://www.fema.gov/rebuild/recover/cope_child.shtm

Forero, J., & Weisman, S. R. (2005, September 4). U.S. allies, and others, send offers of assistance. *New York Times*. Retrieved from http://www.nytimes.com/2005/09/04/international/americas/04offers.html

Fraser, M. W., Richman, J. M., Galinsky, M. J., & Day, S. H. (2009). *Intervention research: Developing social programs.* New York: Oxford University Press.

Friedman, R. (1993). *Review of draft North Carolina family-centered/family preservation services training curriculum, Units I and II.* Unpublished report.

Gullotta, T. P., & McElhaney, S. J. (Eds.). (1999). *Violence in homes and communities: Prevention, intervention, and treatment.* Thousand Oaks, CA: Sage Publications.

Gurwitch, R. H., Sitterle, K. A., Young, B. H., & Pfefferbaum, B. (2002). The aftermath of terrorism. In A. M. La Greca, W. K. Silverman, E. M. Vernberg, & M. C. Roberts (Eds.), *Helping children cope with disasters and terrorism* (pp. 327–357). Washington, DC: American Psychological Association.

Harvey, M. R., & Tummala-Narra, P. (Eds.). (2007). *Sources and expressions of resiliency in trauma survivors: Ecological theory, multicultural practice*. Binghamton, NY: Haworth Press.

Heller, S. (1998, August 7). The meaning of children in culture becomes a focal point for scholars. *Chronicle of Higher Education,* pp. A14–A16.

International Atomic Energy Agency and Chernobyl Forum Expert Group. (2006). *Environmental consequences of the Chernobyl accident and their remediation: Twenty years of experience.* Radiological Assessment Report Series. Vienna: International Atomic Energy Agency. Retrieved from http://www-pub.iaea.org/MTCD/publications/PDF/Pub1239%5Fweb.pdf

International Strategy for Disaster Reduction. (2006). Introduction. In *Disaster statistics 1991–2005.* Retrieved from http://www.unisdr.org/disaster-statistics/introduction.htm

Jacobs, G. A., Boero, J. V., Quevillon, R. P., Todd-Bazemore, E., Elliott, T. L., & Reyes, G. (2002). Floods. In A. M. La Greca, W. K. Silverman, E. M. Vernberg, & M. C. Roberts (Eds.), *Helping children cope with disasters and terrorism* (pp. 157–174). Washington, DC: American Psychological Association.

Janiszewski, C. (2008). Goal-directed perception. In C. Haugtvedt, P. M. Herr, & F. R. Kardes (Eds.), *Handbook of consumer psychology* (pp. 393–416). New York: Psychology Press.

Jones, R. T., & Ollendick, T. H. (2002). Residential fires. In A. M. La Greca, W. K. Silverman, E. M. Vernberg, & M. C. Roberts (Eds.), *Helping children cope with disasters and terrorism* (pp. 175–199). Washington, DC: American Psychological Association.

Jones, R. T., & Ollendlick, T. H. (2005). Risk factors for psychological adjustment following residential fire: The role of avoidant coping. In E. Cardeña & K. Croyle, *Acute reactions to trauma and psychotherapy: A multidisciplinary and international perspective* (pp. 85–99). Binghamton, NY: Haworth Press.

Kafrissen, S. R., Heffron, E. F., & Zusman, J. (1975). Mental health problems in natural disasters. In H.L.P. Resnick, H. L. Ruben, & D. D. Ruben (Eds.), *Emergency psychiatric care: The management of mental health crises* (pp. 157–170). Bowie, MD: Charles Press.

Kinsel, J. D., & Thomasgard, M. (2008). In their own words: The 9/11 disaster child care providers. *Families, Systems, & Health, 26,* 44–57.

Klingman, A. (2002). Children under stress of war. In A. M. La Greca, W. K. Silverman, E. M. Vernberg, & M. C. Roberts (Eds.), *Helping children cope with disasters and terrorism* (pp. 359–380). Washington, DC: American Psychological Association.

Kossin, J. P. (2008). Is the North Atlantic hurricane season getting longer? *Geophysical Research Letters*, 35, L23705. Retrieved from http://www.ssec.wisc.edu/~kossin/articles/2008GL036012.pdf

Kuperschmidt, J. B., Shahinfar, A., & Voegler-Lee, M. E. (2002). Exposure to community violence. In A. M. La Greca, W. K. Silverman, E. M. Vernberg, & M. C. Roberts (Eds.), *Helping children cope with disasters and terrorism* (pp. 381–401). Washington, DC: American Psychological Association.

La Greca, A. M., & Prinstein, M. J. (2002). Hurricanes and earthquakes. In A. M. La Greca, W. K. Silverman, E. M. Vernberg, & M. C. Roberts (Eds.), *Helping children cope with disasters and terrorism* (pp. 107–138). Washington, DC: American Psychological Association.

McDermott, B. M., & Palmer, L. J. (2002). Wilderness area and wildfire disasters. In A. M. La Greca, W. K. Silverman, E. M. Vernberg, & M. C. Roberts (Eds.), *Helping children cope with disasters and terrorism* (pp. 139–156). Washington, DC: American Psychological Association.

Mercuri, A., & Angelique, H. L. (2004). Children's responses to natural, technological, and na-tech disasters. *Community Mental Health Journal, 40*, 167–175.

Miner-Nordstrom, D. (2003). *A critical, comparative look at the health effects of Chernobyl*. Retrieved from http://www.brama.com/travel/messages/34184.html

Minuchin, P., Colapinto, J., & Salvador, M. (1998). *Working with families of the poor.* New York: Guilford Press.

Myers, D., & Wee, D. F. (2005). *Disaster mental health services: A primer for practitioners*. New York: Routledge.

Raphael, B. (1986). *When disaster strikes: A handbook for the caring professions.* London: Hutchinson.

Saylor, C. F. (1993). Children and disasters: Clinical and research issues. In C. F. Saylor (Ed.), *Children and disasters* (pp. 1–9). New York: Plenum Press.

Schlenger, W. E., Caddell, J. M., Ebert, L., Jordan, B. K., Rourke, K. M., Wilson, D., Thalji, L., Dennis, J. M., Fairbank, J. A., & Kulka, R. A. (2002). Psychological reactions to terrorist attacks: Findings from the National Study of Americans' Reactions to September 11. *JAMA, 288,* 581–588.

Shaluf, I. M. (2008) Technological disaster stages and management. *Disaster Prevention and Management, 17,* 114–126.

Shaluf, I. M., Fakhru'l-Razi, A., & Mustafa, S. (2003). Review of technological disasters criteria and models. *Disaster Prevention and Management, 12*, 305–311.

Silverman, W. K., & La Greca, A. M. (2002). Children experiencing disasters: Definitions, reactions, and predictors of outcomes. In A. M. La Greca, W. K. Silverman, E. M. Vernberg, & M. C. Roberts (Eds.), *Helping children cope with disasters and terrorism* (pp. 11–33). Washington, DC: American Psychological Association.

Sitterle, K. A., & Gurwitch, R. H. (1999). The terrorist bombing in Oklahoma City. In E. S. Zinner & M. B. Williams (Eds.), *When a community weeps* (pp. 160–189). Philadelphia: Brunner/Mazel.

Solomon, Z. (1995). *Coping with war-induced stress: The Gulf War and the Israeli response.* New York: Plenum Press.

Statement of understanding between the American Radio Relay League, Inc. and the American Red Cross. (2008). Retrieved from http://www.arrl.org/FandES/field/mou/redcro.html

Swenson, C. C., & Klingman, A. (1993). Children and war. In C. F. Saylor (Ed.), *Children and disasters* (pp. 137–163). New York: Plenum Press.

Taylor, S. (2006). *A clinician's guide to PTSD: A cognitive–behavioral approach*. New York: Guilford Press.

U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration. (2000). *Training manual for mental health and human services workers in major disasters* (2nd ed.). Washington, DC: Author.

Virgona, T. J. (2008). September 11, 2001: A study of the human aspects of disaster recovery efforts for Wall Street financial services firms. *DAI*, *69*(3-A), 797.

Vogel, J. M., & Vernberg, E. M. (1993). Task force report, part 1: Children's psychological responses to disasters. *Journal of Clinical Child Psychology, 22,* 464–48.

Wright, J. C., Kunkel, D., Pinon, M., & Huston, A. C. (1989). How children reacted to televised coverage of the space shuttle disaster. *Journal of Communication, 39*(2), 27–45.

Wroble, M. C., & Baum, A. (2002). Toxic waste spills and nuclear accidents. In A. M. La Greca, W. K. Silverman, E. M. Vernberg, & M. C. Roberts (Eds.), *Helping children cope with disasters and terrorism* (pp. 207–221). Washington, DC: American Psychological Association.

Young, M. A. (1998). *The community crisis response team training manual* (2nd ed.) Washington, DC: National Organization for Victim Assistance. Retrieved from http://www.ojp.usdoj.gov/ovc/publications/infores/crt/welcome.html