In times of disaster, emergency mental health services must be delivered in the field. This chapter reviews the current state of the literature and future trends in disaster mental health.

Disaster Mental Health: Current Status and Future Directions

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Each year about 1.5 million households in the United States experience fatality, injury, or some form of resource loss as a result of disaster. Whether natural or human-made, the extreme and overwhelming forces of disaster can have far-reaching effects on individual, family, community, and national stability. Community disasters are associated with posttraumatic stress disorder (PTSD; Green, Lindy, Grace, and Leonard, 1992; La Greca, Silverman, Vernberg, and Prinstein, 1996; Shore, Volmer, and Tatum, 1989; Steinglass and Gerrity, 1990; Smith and Carol, 1993) other psychological disorders related to depression, alcohol abuse, anxiety, and somatization (Baum, Gatchel, and Schaeffer, 1983; Bravo and others, 1990; Bromet and others, 1982; Green and others, 1990; Norris and Murrell, 1988; Shore, Tatum, and Vollmer, 1986; Smith and others, 1986), physical illness (Adams and Adams, 1984; Leopold and Dillon, 1963), behavioral problems such as domestic violence (Adams and Adams, 1984), and more general symptoms of distress (Baum, Gatchel, and Schaeffer, 1983; Madakasira and O'Brien, 1987). Terrorism (such as the Oklahoma City bombing) and civil unrest (such as the 1992 Los Angeles riots) can also result in similar mental health problems (Difede and others, 1997; Tucker and others, 1997; Kim-Goh, Suh, Blake, and Young, 1995). In this brief chapter, we present a snapshot of the disaster research literature. In addition, we outline service delivery relevant to emergency psychiatric clinicians who may be called upon to treat disaster survivors. Finally, we discuss recent innovations and future directions in disaster mental health care.

Overview of Disaster Literature

Despite formidable practical, conceptual, and methodological problems related to disaster research (Baum and others, 1993; Gerrity and Flynn, 1997; Smith and Carol, 1993; Ursano, McCaughey, and Fullerton, 1994), study of the psychological and social effects of disaster has seen dramatic increase in recent years. In general, this developing literature suggests that mild to moderate stress reactions in the emergency and acute phases of disaster are highly prevalent, and that most people recover fully from moderate stress reactions within six to sixteen months (Baum and Fleming, 1993; Bravo and others, 1990; Dohrenwend and others, 1981; Green and Lindy 1994; Steinglass and Gerrity, 1990). Certain types of trauma exposure place survivors at high risk for trauma-related problems. For example, exposure to mass destruction or mass death (Goenjian and others, 1994; Ursano, Fullerton, Kao, and Bhartiya, 1995), toxic contamination (Baum and Fleming, 1993; Dohrenwend and others, 1981; Hodgkinson, 1989; Lopez-Ibor, 1987), death of a loved one (Livingston, Livingston, Brooks, and McKinlay, 1992; Joseph, Yule, and Williams, 1994; Shore, Vollmer, and Tatum, 1989), and loss of home or community (Bland and others, 1996; Erikson, 1976; Freedy, Resnick, and Kilpatrick, 1992; Keane and others, 1994; Lima and others, 1993; Lonigan and others, 1994; Palinkas, Russell, Downs, and Petterson, 1992; Phifer and Norris, 1989; Quarantelli and Dynes, 1986; Solomon, Bravo, Rubio-Stipec, and Canino, 1993; Shore, Tatum, and Vollmer, 1986) have been associated with development of PTSD. Exposure to postdisaster major life stressors such as divorce, job loss, and financial losses (Bland and others, 1996; Garrison and others, 1995; Hardin, Weinrich, Sally, and Garrison, 1994; Joseph, Yule, and Williams, 1994; Koopman, Classen, and Spiegel, 1994) has also been associated with adjustment problems.

The literature addressing pragmatic service delivery aspects of disaster mental health has also seen considerable increase (for example, American Red Cross, 1995; Austin, 1992; Myers and Young, 1994; Raphael, 1986; Weaver, 1995; Young and others, 1998; Young, M., 1994). Information describing a range of issues related to training, interventions, and special populations has become available. A partial list of topical publications is presented in Table 6.1.

Table 6.1. Topics Appearing in Disaster Mental Health Service Delivery Literature

Issue	*Sources from Literature*
Anniversary issues and interventions	Myers and Schildhaus, 1994
Conceptual models for assessment	Freedy, Resnick, and Kilpatrick, 1992; Taylor, 1987
Defusing and debriefing techniques	American Red Cross, 1991; Armstrong, O'Callahan, and Marmar, 1991; Weaver, 1995; Young and others, 1998; Young, M., 1994

Table 6.1. *(continued)*

Issue	*Sources from Literature*
Disaster preparedness for the elderly	U.S. Administration of Aging and Kansas Department on Aging, 1995
Federal, state, and local response organization	Myers and Young, 1994; Young and others, 1998
Helping organizations	American Red Cross, 1991; Young and others, 1998
Large group interventions	Terr, 1992; Young and others, 1998
Mental health services in community settings	American Red Cross, 1991; Myers, Peuler, and Wee, 1994; Myers and Young, 1994; Weaver, 1995; Young and others, 1998
Mobile response teams	Zealberg and Puckett, 1992; Young and others, 1998; Young, M., 1994
On-scene interventions	American Red Cross, 1991; Young and others, 1998
Operating a death notification center	Sitterle, 1995
Prevention and control of stress among disaster workers	Emanuel and Ursano, forthcoming; Hartsough and Myers, 1987, 1985; Myers, Frattaroli, and O'Callahan, 1994; Ursano and Fullerton, 1988; Weaver, 1995; Young and others, 1998
Psychopharmacotherapy following disaster	Friedman, 1998
Role of mental health in emergency management	Myers, Renteria, and Freeman, 1994; Weaver, 1995
School interventions	Grimes and others, 1991; La Greca and others, 1994; Nader and Pynoos, 1993
Training in disaster mental health	Faberow and Frederick, 1978; Myers, DeWolfe, Zunin, and Zunin, 1994; Weaver, 1995; Young and others, 1998; Young, M., 1994
Use of volunteers and mutual aid	Myers, Young, and Spofford, 1994
Working with children	Deskin and Steckler, 1996; Eth, 1992; Kendall, 1989; La Greca and others, 1999; Nadir and Pynoos, 1993; Saylor, 1993
Working with the media	Weaver, 1995

Disaster Mental Health Service Delivery: Current Status

The primary objective of disaster mental health services is to limit the occurrence and severity of adverse impacts of disaster-related mental health problems (for example, posttraumatic stress reactions, depression, substance abuse) and help restore community equilibrium. Because so many agencies are involved (federal, state, local, American Red Cross, and so on), preparedness requires multilevel systemic planning. Administrators must become familiar with the Federal Response Plan, National Disaster Medical System, and the mission and resources of participating federal, state, and community agencies (for an overview of agencies contributing to disaster mental health services, see Young and others, 1998). Even with preparedness planning, systematic, coordinated, and effective response is continually challenged by real-world contingencies, and confusion and disagreement between agencies can occur. Recent federal legislation (H.R. 3923, Aviation Disaster Family Assistance Act, 1996) placing the American Red Cross in charge of coordinating mental health services for air crash victims and their families is a step in the right direction for helping to establish clear lines of authority.

In a major disaster, mental health services may be delivered on site, at hospital emergency services, and in disaster relief and application centers, shelters, community centers, schools, religious centers, work sites, or essentially wherever survivors and workers congregate. Mental health response requires the delivery of services in ways that differ from those typically delivered by mental health professionals. Help offered is more brief, more pragmatic, more directive, more focused on the external environment of the survivor, and less centered around pathology. Moreover, the primary objectives and forms of mental health services change through the emergency, early postimpact, and restoration phases (Young and others, 1998). For example, during emergency on-site intervention, the pragmatic needs of survivors are paramount and the establishment of safe and secure shelter is synonymous with good mental health care. Three weeks following the disaster, mental health services provided in community settings are apt to be educational rather than psychotherapeutic, with the objective of increasing awareness of the impact of the event and strengthening ways to maximize coping. Four months later, services for persistent symptoms provided in clinical settings may more closely resemble traditional assessment and treatment. Similarly, administrative tasks change throughout the phases of disaster.

Even though a variety of phase-appropriate interventions are employed by disaster mental health workers, critical incident stress debriefing (CISD; Mitchell, 1983) is commonly mistaken as synonymous with disaster mental health services. Experienced disaster mental health workers have estimated that debriefing may constitute only 6 percent of disaster mental health activities (American Red Cross, 1995). Despite widespread application of stress debriefing, there is little empirical evidence of its effectiveness (Rose and Bisson, 1998; Chemtob, Tomas, Law, and Crieniter, 1997; Kenardy and others, 1996). Debriefing may provide professionally guided opportunities to talk and learn about stress responses and stress management, but it is unlikely to provide effective treatment for the complex and persistent problems that may result from the interaction of the disaster itself, predisaster vulnerabilities, and adverse postdisaster conditions (Kenardy and others, 1996; Young and Gerrity, 1994).

When the president declares an event to be a disaster, federal crisis counseling programs can be set in place. Generally, services include public information, individual crisis intervention, outreach, support groups, and training and consultation for service providers, community organizations, and schools. The transition from immediate to long-term disaster mental services can be a complex and political process, often involving multiple providers with varying levels of expertise and training (see American Psychological Association, 1997).

Future Directions in Disaster Mental Health

As the field of disaster mental health develops, it will need to better match intensity of help with survivor need, better deliver services following the acute phase of disaster, and better apply mass media to support recovery. First, much has been learned about the factors that place trauma survivors at risk for development of PTSD and other problems. There is hope that these risk indicators can be used to match disaster survivors with levels of intensity of services, and that specialized programs for special populations (for example, children, frail elderly, minorities, chronically mentally ill) will continue to develop. Use of screening instruments designed to assess risk for subsequent problems may enable immediate delivery of more adequate levels of help to those at highest risk. Moreover, they may be used to guide later outreach efforts to follow up with those at risk for chronic impairment.

The practical tasks of recovery that require attention can delay survivors' recognition of their need for help. Consequently, the need for care may first become apparent weeks or months following the event itself. However, stigma associated with receiving mental health treatment and the desire to avoid dredging up traumatic memories and emotions are powerful disincentives to seeking help. Therefore, innovation and evaluation of methods of outreach and recruitment into services is needed. For example, a significant number of survivors who seek treatment for health problems may also be suffering from PTSD. Primary health care providers who treat these survivors may not routinely screen for PTSD or be aware of current treatments for the disorder. Development of guidelines for primary care services to deliver PTSD-related education, screening, and referral linkages could increase the number of entry points into disaster-related mental health treatment. Because crisis counseling programs are not generally designed to treat symptoms of posttraumatic stress once they have developed into an established disorder, increased attention to the development of brief, economical, but substantial interventions that can

be targeted at persistent postdisaster problems is needed (for example, see Young, Ruzek, and Ford, forthcoming).

One development of note has been the application of the *Conservation of Resources* model of stress (Hobfall, 1989; Hobfall, Dunahoo, and Monnier, 1995) to disaster mental health research (Freedy, Resnick, and Kilpatrick, 1992; Freedy and others, 1994). According to this model, loss of resources in the aftermath of disaster leads to emotional distress and diminished coping capacity. Resources are conceptualized broadly, with loss of object resources (such as car and home), condition resources (such as employment and marriage), personal characteristic resources (such as optimism, purpose, and independence), and energy resources (such as time, money, and information) all playing a cumulative role. In a study of 418 Hurricane Hugo survivors, Freedy, Resnick, and Kilpatrick (1992) found that resource loss was the strongest predictor of distress at approximately two months postdisaster, accounting for 34 percent of the variance. Freedy and others (1994) reported similar findings with 229 survivors of the Sierra Madre earthquake in Los Angeles. Resource loss remained a significant predictor of distress four to seven months after the earthquake, even after other sources of distress were statistically controlled. These data serve to reinforce the importance for mental health of the current emphases in disaster response on restoration of basic needs (such as food, shelter, sleep, and contact with loved ones) and redress of financial and material losses. They can help guide the development of more effective mental health interventions. And they help keep attention focused on the impact of disaster on the environment of the person rather than on intrapsychic vulnerabilities.

There is a rapidly growing literature describing the stressors associated with disaster work itself. However, there are relatively few methodologically sound studies on the impact of this work (Hodgkinson and Shepherd, 1994; Kenardy and others, 1996; Lundin and Bodegard, 1993; Ursano, Fullerton, Kao, and Bhartiya, 1995). Research examining the effects of exposure to physical danger, encountering the suffering of others, role ambiguities, long hours, and difficult choices is needed to guide the development of disaster worker deployment and support systems. Moreover, while disaster mental health consultants consistently draw attention to the need to establish structured systems of worker support, there is a need to evaluate the effectiveness of various mechanisms of support.

Finally, because entire communities are affected by disaster, it is important to focus more research attention on larger community-based interventions. For example, the media can play a powerful role in catalyzing community support (Milgram and others, 1995). The Internet is another means to disseminate information (there are many disaster-related Web sites for survivors, workers, and practitioners). However, research is needed to evaluate the effectiveness of different forms of persuasion and dissemination in accomplishing readiness for disaster and mitigating its psychosocial effects. Correspondingly, there is a growing effort to provide the media with guidelines for coverage and interviewing (for example, see Ochberg, 1996; Slater and Hall, 1998), and the

Victims and Media Program at the Michigan State University School of Journalism offers an annual cash prize for excellence in reporting on victims of violence. It will be important to continue to examine the impact of media coverage of disaster (Friedman, 1996). For example, a recent study of 724 randomly selected individuals across the United States indicated that the most commonly reported trigger to recall of trauma was television and movies (Elliott, 1997).

Over the last fifteen years there has been a growing international interest in disaster research and a remarkable development of disaster mental health service delivery. Although much is known about who is at risk for persistent disaster-related psychological problems, much remains to be learned about the most pragmatic and efficient means of providing services. This is especially true with regard to disasters affecting large numbers of people. The need for continued development and empirical study of the effectiveness of a wide range of interventions, including pragmatic efforts to restore personal resources to survivors, brief "shotgun" stress debriefing services, longer-term disaster-related treatment, systems of support for disaster workers, and Internet and media interventions challenge future researchers, emergency planners, and responders.

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