Learning objectives

This course is designed to help you:

- Identify how disaster affects the mental health of individuals;
- Discuss the history of psychological impact, diagnosis, and therapy related to disasters;
- Investigate the forms of psychopathology considered linked to disasters;
- Analyze vulnerability factors that exist; and
- Recognize various approaches of post-disaster therapeutic interventions that can be used.

Overview

Psychological research has shown that disasters can cause serious mental health consequences for victims. These consequences take the form of post-traumatic stress disorder and a variety of other disorders and symptoms that have been less investigated. The more stress, defined in a variety of ways, from the disaster, the more likely there are to be emotional consequences.

Vulnerability factors within the victim operate in complex ways, but seem related to the extent of stress experienced by the victim and the available resources, broadly defined, with which to deal with it. The mental health profession has developed a variety of strategies to ameliorate the effects of disasters.

For many years there has been a debate over whether the effect of disaster on mental health was important. One side of the debate came from the sociological point of view (Quarantelli and Dynes, 1985), which focused on the adaptive nature of community response, both in the immediate aftermath of a disaster and in most people’s long-term response.

The majority of people function adaptively during and after a disaster, and the old notion (Kinston and Rosser, 1974) that individuals will experience panic, wander aimlessly and be dependent has been shown to be untrue (Wenger, Dykes, Sebok, and Neff, 1975). But that is a different matter from focusing on the toll that the disaster takes on some individuals.

Norris, Friedman, Watson, Byrne, Diaz and Kaniaty, (2002), who regard disasters as an unexpected or uncontrollable event rather than a long-term experience. A disaster is something that could happen within a war rather than the war itself. Dynes (2004) has argued that social scientists need to expand their definition of disaster to encompass events like war, genocide and refugee experiences that are critical in Third World countries.

Disasters are also usually viewed as a collective experience, excluding personal disasters like sexual abuse or automobile accidents, unless these involve a large number of people. Again, the dividing line can be unclear. The type of event with its various dimensions can affect our perceptions. We might not consider an automobile accident that killed 13 people to be a disaster, even if many others were involved or witnessed it, but the killing of 13 in the shootings at Columbine certainly qualifies.

With the passage of time, the study of disasters has become less descriptive and more quantitative, attempting to resolve some of the methodological problems of this research. The focus has moved from the question of whether there are significant long-term psychological impacts of disasters to studying the types of impact that occur and what factors in the disaster and in the individual increase the likelihood of emotional damage. Interventions to assist victims have been developed.

Most recently, there has been more focus on the effectiveness of these interventions. This chapter will explore in turn each of these areas: methodology of disaster research; extent of psychological impact of disasters; damaging aspects of disaster; vulnerability factors; psychological interventions for victims; and the effectiveness of these interventions.

While it’s important to understand what qualifies as a disaster and its impact on individuals, the next step is an understanding of best-practice therapeutic interventions to effectively help those who have experienced
disaster. Post therapy is a very important issue for addressing the impact of disasters. There are many approaches to meet the needs of those needing services following such a traumatic event. We will take a closer look at not only how terrorism impacts the community and individuals’ mental health needs, but also the types of services and approaches that therapists can take for both children and adults.

**Terminology**

**Acute stress disorder (ASD)** – Mental health condition that is characterized by the development of severe anxiety, dissociative and other symptoms that occurs within one month after exposure to an extreme traumatic stressor, such as witnessing a death or a serious accident.

**Compassion fatigue** – A state of tension and preoccupation with the traumatized patients by re-experiencing the traumatic events, avoidance and numbing of reminders, or persistent arousal (e.g. anxiety) associated with a patient. It is a function of bearing witness to the suffering of others. It is a state of physical, emotional and mental exhaustion caused by long-term involvement in emotionally demanding situations (Figley, 1995).

**Post-traumatic stress disorder (PTSD)** – Mental health condition that’s triggered by a terrifying event. Symptoms commonly include flashbacks, nightmares and severe anxiety, and uncontrollable thoughts about the event.

**Reactive depression** – A major depressive episode that is apparently precipitated by a distressing event or situation, such as a career or relationship setback. It is also called depressive reaction; exogenous depression; neurotic depression; neurotic-depressive reaction (APA, 2010).

**Secondary trauma** – Indirect exposure to trauma through a firsthand account or narrative of a traumatic event. The vivid recounting of trauma by the survivor and the clinician’s subsequent cognitive or emotional representation of that event.

**Vicarious traumatization** – A transformation in one’s inner experience resulting from empathic engagement with clients’ traumatic material (Rosenbloom, Pratt and Pearlman, 1995).

**History of psychological impact of disasters**

The study of trauma began with the work of Jean-Marie Charcot in Paris in the late 19th century. Sigmund Freud was an early observer of Charcot’s work with people experiencing hysteria. Charcot theorized that their symptoms of amnesia, paralysis, convulsions and sensory-motor impairments were not the result of degeneracy, but the result of psychological trauma. Freud went on to focus on the emotional lives of his patients and the hidden factors that made them predisposed to hysteria. Along with Joseph Breuer, Freud created a method of psychoanalysis that became known as “the talking cure.”

After some time, Breuer and Freud derived from their experiences that the symptoms of hysteria were the results of failed attempts to repress painful memories of past events, often of a sexual nature. They suggested that patients suffer mainly from reminiscences (Breuer and Freud, 1893).

In 1889, Pierre Janet postulated that intense emotional reactions make events traumatic by interfering with the integration of the experience into existing memory schemes (van der Kolk, 1994). He noted that victims were unable to put the trauma behind them and had difficulty learning from their experience. Their energy was funneled toward keeping their emotions under control rather than paying attention to current situations. He also wrote that victims became fixated on the past, in some cases by being obsessed with the trauma, but more often by behaving and feeling as if they were traumatized over and over again without being able to locate the origins of these feelings (van der Kolk and van der Hart, 1996).

Unlike other disciplines that have come more recently to the study of disasters, psychology has concerned itself with disasters’ impacts on victims for much of its own short history. As long ago as 1944, Lindemann published an observation of the psychological aftermath of the Coconut Grove nightclub fire in Boston.

Besides the obvious involvement psychologists have in attempting to relieve distress of victims, disasters have a relationship to several important psychological constructs. Disasters allow psychologists to perceive the operation of trauma on emotional functioning, an operation that mental health practitioners as far back as Freud have been interested in understanding.

Stress research is a central and crucial explanatory factor in many fields of psychology, especially community psychology, which considers stress the central ingredient to the formation of psychopathology (Albee, 1997; Dohrenwend, 1998). There is an ethical limit to the extent that stress can be manipulated in the laboratory, and disasters allow psychologists the opportunity to observe how extreme stress impacts individuals and groups.

Early studies of disaster tended to be descriptive. Lifton (1967) described the emotional impacts of Hiroshima, Coles (1967) portrayed the effect of political disaster on children (1967), and Erikson (1976) painted the picture of the aftermath of the Buffalo Creek floods in West Virginia. While some researchers such as Edelstein (2004) still favor a qualitative approach, most psychological disaster research today tends to be quantitative.

There are specific problems that exist for social scientists who wish to study disaster. Experimental design requires random assignment of participants to experimental and control conditions. Even if a mad scientist wanted to conduct such an experiment, controlling a disaster is an oxymoron. Disaster research can only attain the status of quasi-experimental design, with comparison groups, not controls. Since disasters occur unpredictably, pre-test data on victims are usually not available. Psychologists called into a disaster are usually there to provide help.

Researchers can seldom obtain access to the disaster at its onset, and if they do find access, the exigencies of the situation usually preclude administration of standard instruments in a standardized fashion. Victims usually have no motive to participate in research, and follow-up studies are often difficult to arrange. Samples of victims vary from those directly impacted, to rescue workers, to the families of the bereaved. It is difficult to compare Western victims to those from Third World countries, because their circumstances and resources are so different, and for the same reasons it is difficult to compare victims from different ethnic groups within a culture.

Disasters also vary widely in the amount and the nature of the stress they involve: duration; loss of life; personal injury, or injury to loved ones; property damage; terror; helplessness; gruesome sights, sounds and smells; dislocation from one’s home; availability of social support. All of these factors may differ in a flood as contrasted to an earthquake, or between one flood and another, or between one victim’s and another’s experience of the flood.

One special differentiation between types of disaster is the natural vs. the technological, or human-caused, disaster. Natural disasters tend to involve lack of control over natural forces, like wind, that we expect to be uncontrollable, while technological disasters can be less defined, especially if they include toxic exposure, and can involve a loss of control over an area of life in which we expect control, like drinking...
water (Baum, Fleming, and Davidson, 1983). Terrorism is a special form of technological disaster, and the most recent addition to the typology of disaster (Ursano, Fullerton, and Norwood, 2003).

As psychologists continued to conduct more disaster research, they began to develop standardized measures, beginning with the Impact of Events Scale (Horowitz, Wilner and Alvarez, 1979). Many measures have been devised to diagnose post-traumatic stress disorder (PTSD), one of a number of psychological consequences of disaster. The National Center for PTSD (2003) currently lists 15 adult PTSD self-report measures, four interview measures, and nine measures for children.

Because of psychology’s interest in trauma and stress, its definition of disaster has differed somewhat from what is used in other fields. In the 1970s after the Vietnam War and the discovery of its impact on veterans, and after the discovery of the long-term effects of child sexual abuse, the mental health field conceptualized a disorder specifically related to the consequences of trauma, post-traumatic stress disorder (PTSD) (American Psychiatric Association, 2010).

### Neurodevelopmental perspective

The effects of adverse early life experiences often have a negative impact on the developing brain (Nemeroff, 2004, Perry, 2002, 2005, Sugden, et al., 2006). In his work with maltreated (abused) children, Bruce Perry, a neuropsychiatrist and director of the Child Trauma Academy in Houston, Texas, examines therapeutic work from a neurodevelopmental perspective. This neurodevelopmental model was used with more than 2,500 children in the Child Protective System and Juvenile Justice System in Texas and Kansas.

A key question is raised by Perry (2005): “If adverse experiences alter the developing brain in negative, functional effects, can therapeutic experiences change the brain in ways that allow healing, recovery and restoration of healthy function?” He continues: “Much of what ends up being therapeutic is not in the context of conventional therapy, and much of what we do in conventional therapies is not therapeutic. Matching the correct therapeutic activities to the specific developmental stage and physiological needs of a maltreated or traumatized child is a key to success.” He states, “The specific symptoms or physical signs a child develops following maltreatment or trauma will reflect the history of neural activation – or in the case of neglect, the history of inactivation. Neuropsychiatric symptoms and signs present in maltreated or traumatized children are related to nature, timing, pattern and duration of their developmental experiences – both adverse and protective.”

The physical, neurological and psychological effects of trauma are well known, the subject of ongoing study, and well documented by researchers across time. (Vasterling and Brewin, 2005; van der Kolk, 1996, 2002, 2005; Figley, 1995, 2002, 2005, McCann and Pearlman, 1990, Pearlman and Saakvitne, 1995 and Perry, 2005) The word trauma comes from the Greek, meaning “wound.” Webb writes that in its current usage, “Trauma refers to emotional, psychological, and physical injuries that cause pain and suffering.”

### FORMS OF PSYCHOPATHOLOGY RESULTING FROM DISASTERS

While there are many possible forms of psychopathology in an individual experiencing disaster, the two most prominent disorders linked to disaster are post-traumatic stress disorder (PTSD) and acute stress disorder (ASD).

### Post-traumatic stress disorder (PTSD)

Post-traumatic stress disorder (PTSD) is a mental health condition that’s triggered by a terrifying event. Symptoms commonly include flashbacks, nightmares and severe anxiety as well as uncontrollable thoughts about the event. In most disaster-exposed populations, the psychiatric disorder most often found to develop is post-traumatic stress disorder followed in frequency by major depression. In certain groups, though, problems with alcohol abuse and dependence may be more apparent than PTSD or major depression, such as among disaster responders (North et al., 2002) and people living on the loose ground of Midwestern flood plains (North et al., 2004).
The locus ceruleus and higher brain area, such as the thalamus, are involved in the gating of sensory input and are critical to the experience of trauma. Fear, which is a normative response to a traumatic event or other threatening situation, involves activation of the hypothalamic-pituitary-adrenal (HPA) axis. Stimulation of the hypothalamus by either the thalamic, limbic or locus ceruleus circuits activates the stress response.

The role of memories in PTSD is central. The emotional and somatic contents of memories are associated through the amygdala and moderated by serotonin and norepinephrine and sequentially affected by output from the locus ceruleus. Factorial contents of memory, such as associated cues, are registered in the hippocampus and cortex. Nutt and Malizia delineate the difference between nonpathological reactions to trauma and the dysregulation that occurs in the pathophysiology of PTSD. In acute stress reactions, the capacity of various stimuli to trigger fear or an alerting response decreases over time and little or no dissociation is experienced. In pathological states, the dysregulation that occurs when processing sensory input and memories is believed to contribute to the pathophysiology of PTSD (Nutt, 2000, Nutt and Malizia, 2004). They identify this as an abnormal process that includes both continued dissociative experiences and inappropriate generalized vigilance.

Successful management of PTSD involves recognition and management of potential disorders, which may have important implications for planning treatment and predicting mental health outcomes. The course of PTSD can be variable, but it may be chronic and protracted in survivors of disasters as it is in other populations (Breslau, 2001), indicating that the need for interventions may continue for a very long time after the disaster is over.

PTSD has been found more often in women than in men, as well as those with pre-existing psychopathology compared to those without. High-impact disasters are associated with greater incidence and severity of subsequent mental health problems. Exposure to disaster, reflected in variables such as physical injury and experiences of terror, horror and life threat, is also associated with incidence and severity of PTSD.

If it is clear that disasters cause psychopathology, it is less clear what form that psychopathology takes. Since the mental health profession developed the PTSD diagnosis, PTSD has been the main focus of research on the aftermath of disaster. The criteria for PTSD include (APA, 2010):

- Having been exposed to a traumatic and fearful event.
- Re-experiencing the traumatic event, usually in flashbacks or nightmares.
- Avoidance of situations and stimuli that could reawaken the trauma, for example, numbing one’s feelings or withdrawing from others.
- Increased level of arousal, for instance, sleep difficulties, irritability and concentration problems.

Norris et al. (2002) reported that 68 percent of their research samples assessed for and found PTSD in disaster victims. The second most common psychiatric problem was depression, found in 36 percent of the samples. Anxiety in various forms was found in 32 percent of the samples. Health concerns were also often present (23 percent of the samples). It was not usually clear whether victims’ health concerns were realistic or were based on somaticizing the stress of the experience (North 2002). Alcoholism and drug abuse were not often investigated, but when they were, levels of abuse have been found to rise after disasters.

What is not clear from the above figures is what the actual rate of various psychopathologies might be if each study had assessed for all of them. Norris et al. (2002) recommend that all disaster researchers use a standard measure of psychopathology so that it can be more clearly determined which disorders are linked to undergoing disaster.

Victimization, primarily child physical and sexual abuse, has been shown to lead to other diagnoses beyond the ones investigated in disasters. These include schizophrenia and other psychoses (Neria, Bromet, Sievers, Lavelle, and Foehnftmann, 2002), dissociative disorders (Coons and Milstein, 1986), and borderline personality disorder (Herman, Perry and Van der Kolk, 1989). None of these diagnoses has been investigated to see whether higher rates result after disaster, although dissociative symptoms have been reported during and after some disasters (Marmar, C. R., Weiss, D. S., Metzler, and DeLucchi, 1996; Weiss, Marmar, Metzler, and Ronfeldt, 1996) and can be part of the avoidance criterion of PTSD (APA, 2000).

It would be valuable to look at long-term vulnerabilities of childhood victims of disaster to these disorders. Little research of any kind has been conducted looking at long-term consequences of disasters for children.

An issue that has been discussed in the literature is whether symptoms of other disorders found after disasters are part of the PTSD syndrome or whether they are independent consequences. There are several possible explanations for the overlap that often is observed. Symptoms within diagnoses do overlap, symptoms of other diagnoses could be sub-clinical cases of PTSD, PTSD could increase vulnerability to other diagnoses, and other diagnoses could increase vulnerability to PTSD (McMillen, North, Mosley and Smith, 2002). In particular, the fact that depression and PTSD are both common consequences of disaster is of interest.

Greening, Stoppelbein, and Docter (2002) conducted an interesting study in which they looked at attributions for the negative outcomes of the Northridge earthquake. Victims who made what have been labeled depressogenic attributions, seeing negative outcomes as related to internal, stable and global causes (Abramson, Seligman, and Teasdale, 1978), were more likely to develop depressive symptoms, but not PTSD symptoms. Livano, Basoglu, Salioglu and Calender (2002) looked at PTSD and depression as outcomes of the Turkish 1999 earthquake, and found that there were different predictors for each. Research into the relationship between different outcomes of disaster is continuing, but the lack of solid findings points out that we know little about the actual mechanism of how symptoms are caused by disaster stress.

Whereas there were three major symptom clusters in DSM-IV—reexperiencing, avoidance/numbing, and arousal—there are now four symptom clusters in DSM-5, because the avoidance/numbing cluster is divided into two distinct clusters: avoidance and persistent positive alterations in cognitions and mood. This latter category, which retains most of the DSM-IV numbing symptoms, also includes new or reconceptualized symptoms, such as persistent negative emotional states. The final cluster—alterations in arousal and reactivity—retains most of the DSM-IV arousal symptoms. It also includes irritable or aggressive behavior and reckless or self-destructive behavior. Posttraumatic stress disorder is now developmentally sensitive in that diagnostic thresholds have been lowered for children and adolescents. Furthermore, separate criteria have been added for children age 6 years or younger with this disorder. (APA, 2013)

**Acute stress disorder (ASD)**

Acute stress disorder is characterized by the development of severe anxiety, dissociative and other symptoms that occur within one month after exposure to an extreme traumatic stressor, such as witnessing a death or a serious accident.

As a response to the traumatic event, the individual develops dissociative symptoms. Individuals with acute stress disorder have a decrease in emotional responsiveness, often finding it difficult or impossible to experience pleasure in previously enjoyable activities, and frequently feel guilty about pursuing usual life tasks.

A person with acute stress disorder may experience difficulty concentrating, feel detached from their bodies, experience the world as unreal or dreamlike, or have increasing difficulty recalling specific details of the traumatic event (dissociative amnesia).
In addition, at least one symptom from each of the symptom clusters required for post-traumatic stress disorder is present. First, the traumatic event is persistently re-experienced (e.g., recurrent recollections, images, thoughts, dreams, illusions, flashback episodes, a sense of reliving the event, or distress on exposure to reminders of the event). Second, reminders of the trauma (places, people, and activities) are avoided. Finally, hyper-arousal in response to stimuli reminiscent of the trauma is present, such as difficulty sleeping, irritability, poor concentration, hyper-vigilance, an exaggerated startle response, and motor restlessness.

Acute stress disorder is most often diagnosed when an individual has been exposed to a traumatic event in which both of the following were present:
- The person experienced, witnessed or was confronted with an event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others.
- The person’s response involved intense fear, helplessness, or horror.

Either while experiencing or after experiencing the distressing event, the individual has three or more of the following dissociative symptoms:
- A subjective sense of numbing, detachment, or absence of emotional responsiveness.
- A reduction in awareness of his or her surroundings (i.e. “being in a daze”).

Contributing factors

In general, the nature of the disaster and the extent of the trauma it wreaks are more predictive of the extent of psychopathology that follows than are characteristics of the victims (Sundin and Horowitz, 2003). The more stressful the disaster experience, the more negative the consequences, but it is not always possible to identify which of the many factors within a disaster make it more stressful. Therapists have identified the following as important characteristics: mass violence (Norris et al., 2002); the experience of terror and horror (Bolin, 1985); duration of the disaster (Baum and Davidson, 1985, Bolin, 1985); and the amount of unpredictability and lack of control (Baum and Davidson, 1985; Thoits, 1983).

First responders and disaster workers are at special risk for PTSD and other negative emotional consequences of disaster (Gibbs, Lachenmeyer, Broska, and Deucher, 1996; Norris, 2002a). This vulnerability has usually been perceived to be related to the experience of the work rather than to any inherent vulnerability factors, because often people choosing these professions have high levels of emotional hardness.

Many psychologists identify stress as a leading cause of psychopathology, but theories on how stress affects its victims are varied. Some focus on the physiological overload of stress (Selye, 1976), some on the unpredictability and uncontrollability of stress (Kelly, 1955), and some on the conditioning that takes place between a frightening stressor and other aspects of life, with a resulting avoidance of stimuli that are reminders (Mowrer, 1960).

Losses in a disaster, of other people, of material goods, of one’s own health and security, are also critical (Nolen-Hoeksema, 1990). Some theorists focus on the shift in cognitions that take place after a disaster. Janoff-Bulman and Frieze (1983) speculated that cognitions shift after a disaster. The individual asks “Why me?” and the answer involves a change in one’s sense of invulnerability, in the world’s predictability, and in one’s own worth.

VULNERABILITY FACTORS

There are a number of characteristics of victims that make them more vulnerable to disaster effects. Vulnerability factors include:
- Socioeconomic status (SES).
- Available resources.
- Previous level of psychopathology.
- Age.
- Social/family factors.
- Gender and ethnicity.

Other contributors to mental health problems after disaster may include:
- Death or injury of loved ones.
- Property damage.
- Financial loss.
- Relocation.

Norris, et al. (2002) found that 13 of 14 samples that investigated socioeconomic status and disaster outcome found lower socioeconomic status to be associated with increased post-disaster distress. Studies included a wide range of disasters: an air disaster (Epstein, Fullerton, and Ursano, 1998), an industrial disaster (Vila, Witowski, and Tondini, 2001), floods (Ginexi, Weihs, Simmons, and Hoyt, 2000), and an earthquake (Lewin, Carr, and Webster, 1998). Individuals who live in poverty tend to have fewer resources available to them to attenuate the effects of disaster.

Pre-existing psychopathology is a risk factor for developing psychopathology from a trauma (Norris et al., 2002a) in that individuals who suffer from a psychological disorder are more susceptible to further distress in the aftermath of a disaster. For example, pre-disaster anxiety disorders (Asarnow et al., 1999), depression (Knight, Gatz and Heller, 2000), and suicidal ideation (Warheit, Zimmerman and Khoury, 1996) were found to increase the likelihood of post-disaster psychopathology.

In terms of age, Norris et al. (2002a) noted that middle-aged adults appear to be the group most affected by disasters. This age group may have more burdens and stresses (Thompson, Norris and Hanacek, 1993), such as caring and providing support for a family that may be amplified in the aftermath of a disaster.

Social network characteristics influence vulnerability. For example, a lack of perceived (Bromet, 1982; Dougall, Hyman and Hayward, 2001) or received (Sanchez, Korbin and Viscarra, 1995; Udwin, Boyle and Yule, 2000) social support may lead to greater post-disaster distress.
These risk factors do not operate in isolation. Many of these factors are often interrelated with others. As an example, let’s take a closer look at how two of these factors (gender and minority) interact with one another.

Gender

Norris et al. (2002) stated that in 94 percent of 49 studies that investigated the issue, female survivors of disaster were more seriously affected than were males. There are several possible explanations for this difference. For example, as mentioned in the previous paragraph, low socioeconomic status is a risk factor for post-disaster psychopathology, and women more often live in poverty than men (Belle, 2000).

The gender difference may be in part explained by differences we often observe between the genders in the way psychological distress is expressed. In general, women are more likely than men to acknowledge psychological symptoms and to report them (Nolen-Hoeksema, 1990). After a disaster, males may suppress feelings of psychological distress because of the expectation that men must be strong and capable (Wolfé and Kimerling, 1997).

Substance abuse and other acting-out behaviors, such as interpersonal violence, are seldom assessed. Men are more likely to express psychological distress through these kinds of behaviors, rather than reporting neurotic-type symptoms like depression and anxiety (Myers, Weissman, Tischler, et al., 1984).

Women have higher pre-disaster rates of depression and more anxiety disorders than men (Myers et al., 1984), putting them at risk for disaster-related distress. Furthermore, there may be some experiences that women are more likely to have that may contribute to the development of PTSD post-disaster. The experience of rape and sexual assault is higher among women than men (Kessler, Sonnega, Bromet, Hughes and Nelson, 1995), and it has been shown that when compared with other forms of trauma, unwanted sexual contact is more likely to result in PTSD (Breslau, Davis and Andreski, 1997; Kessler et al., 1995). Pulcino et al. (2003) found that the experience of previous unwanted sexual contact increased a woman’s likelihood of endorsing PTSD symptoms after the September 11 attacks by 33 percent.

The interaction of gender and various social/family factors highlights the interconnectedness of vulnerability factors. While men typically cope using individual and immediate decision-making, women use their social network to process and work through problems (Kawachi and Berkman, 2000; Taylor, Klein and Lewis, 2000). After a disaster, changes often occur in one’s social network (Kaniasty and Norris, 1997).

In a study with victims of Hurricane Andrew, Norris, Perilla, Riad, Kaniasty and Lavizzo (1999) noted that nearly all of the events that were experienced in common by the sample were related to changes in the social environment. Women’s PTSD symptoms have been shown to increase as their available social supports decrease, a finding that was not true for men (Pulcino et al., 2003). Change in the social network, which may involve a decrease in available social support, may be more devastating for women than for men because of its negative effect on their coping ability.

Traditionally, women have been assigned the role of caregiver, a role that may lead to increased stress levels in the aftermath of a disaster. First, for women who are primary caretakers, the extra stress of caring for children and the home may fall disproportionately on them. Norris et al. (2002) noted in their review of disaster studies that being a parent, especially a mother, was associated with higher disaster-related distress. In a study with survivors of the 1999 earthquake in Turkey, a higher percentage of women than men reported that their first thoughts were of their family (Yilmaz, 2004). Second, women may be more likely to provide care for others affected by disaster (Kaniasty and Norris, 1995; Solomon, Smith, Robins, and Fischbach, 1987).

In a study with victims of the September 11 attacks, more than twice as many women as men reported engaging in collective helping behavior (Wayment, 2004). When women offer support to other people, not only can they be further exposed to the trauma through contact with others, but they also may be burdened by the stress of providing support in times of need (Solomon et al., 1987). A particularly devastating situation may be the one in which a woman provides support services to others in the aftermath of a disaster, but does not receive an equal amount of social support back, especially in light of our previous discussion on coping styles.

There may be something about the traditional caregiving role that leads to vulnerability. A brief investigation of gender, ethnicity and this role will again highlight the complexity of the interaction between vulnerability factors. Studies with members of varying cultural groups have suggested that the gap between PTSD symptoms in men and women is higher in societies that are more traditional (Norris et al., 2002a). Norris et al. (2001) conducted a study using a sample of non-Hispanic white and black Americans affected by Hurricane Andrew and Mexicans affected by Hurricane Paulina.

In all cultural groups, women reported more PTSD symptomology than men. However, this gap was widest in the Mexican sample and smallest in the black sample. When compared to non-Hispanic white American culture, Mexican culture is understood to be more traditional in its adherence to gender roles (Chia, Wunsch and Childers, 1994; Davenport and Yurich, 1991), and black American culture is understood to be more egalitarian in its gender role definitions (Davenport and Yurich, 1991; McAdoo, 1988). This suggests that women who assume the traditional female role are most vulnerable to post-disaster psychopathology.

Minority or Third World ethnicity

Norris et al.’s study with Americans and Mexicans brings us to our consideration of a second vulnerability factor, ethnicity. Post-disaster effects in developing countries tend to be greater than in the U.S. (Norris et al., 2002), and within the U.S., adult members of ethnic minority groups are more negatively affected by disasters (Norris et al., 2002; Perilla, Norris and Lavizzo, 2002). Differential exposure to disasters may account for some of these differences. For example, in the U.S., ethnic minority members are often concentrated in the lower income strata and are more likely to live in less safe homes and at-risk areas (Quarantelli, 1994), increasing their trauma exposure.

Factors beyond the amount of exposure to disaster-related trauma are likely in operation as well. Again, poverty leads to lower access to post-disaster resources for minorities (Kaniasty and Norris, 1995). Also related to low socioeconomic status is a higher pre-disaster exposure to community violence. Similarly, immigrant members of minority groups or individuals who live in developing nations may live or have lived in cultures where they are likely to have experienced trauma. This could include the community or personal violence that is common in countries characterized by political or social unrest. Previous exposure to community or personal trauma increases the risk of post-disaster psychopathology. For example, Perilla et al. (2002) found that the incidence of neighborhood and personal trauma was higher among the black and Latino participants in their study, and that the severity of their exposure accounted for much of their higher rates of PTSD post-Hurricane Andrew.
There also may be culturally influenced ways of interpreting or expressing distress that account for the vulnerability of minority groups. Members of an ethnic minority group may have experienced prejudice, discrimination or oppression. These experiences can result in psychological vulnerability in general, but could also be related to the way trauma is expressed. African-Americans, for instance, may, because of experiences of oppression, become hypervigilant to perceived threats, and this in turn could result in the expression of certain post-traumatic symptoms (Allen, 1996). The Latino concept of “susto,” which refers to an experience of fright, is often to what Spanish-speaking individuals attribute any symptoms they experience (Hough et al., 1996; Kirmayer, 1996). The incidence of a disaster is consistent with this cultural concept, because it represents a singular traumatic event to which one can attribute distress. In this way, the expression of PTSD in response to a disaster is quite culturally consistent.

In certain cultures, such as African-American and Latino ones, family ties are emphasized and there is a strong reliance on the family for social support (Chia et al., 1994; Hatchett and Jackson, 1993; Sabogal, Marin and Otero, 1987). As in the discussion of women, disruption to the family or social network that can occur post-disaster can lead both to a loss of available support for minority group members (Kaniasty and Norris, 1997) and to increased stress that comes with the obligation of tending to others’ needs. In addition, such a family-orientation can also result in less receipt of outside sources of support (Kaniasty and Norris, 2000).

**Psychological interventions and therapy**

Numerous individuals and organizations have written about disaster planning and interventions from a psychological perspective (Ehrenreich, 2001; Jacobs, 1995; Roberts, 2000; SAMHSA, 2000). In the panoply of ideas and techniques put forward, a valuable model for looking at psychological interventions for disaster victims is that provided by Caplan (1964), the father of community psychology, who developed the model of prevention of mental disorder. If, as the community psychology model posits, stress is the major cause of psychopathology, the best way of preventing psychopathology is to reduce the stress of the environment.

This is primary prevention, and as it applies to disasters, primary prevention places psychology squarely in the process of emergency preparedness. Psychologists might, for instance, help develop campaigns to persuade the public not to build houses in a flood plain, or find ways to increase the public’s emergency preparedness through education, or influence legislation that requires insurers to provide disaster insurance or prompt payment of benefits after a disaster.

Because psychology has so much to contribute to education and policy development, it is important for emergency managers to involve psychology in all their planning efforts.

The term secondary prevention is used to describe the process of identifying people at risk and intervening to assist them. As applied to disasters, secondary prevention requires psychologists to conduct rapid screening after disasters and to begin interventions as soon as possible. Again, emergency managers need to include psychologists in the immediate aftermath of a disaster.

This type of prevention is often labeled crisis intervention, an attempt to reduce the stress of a crisis at the time it occurs. Lindemann’s (1944) groundbreaking research at the Cocoanut Grove nightclub fire, mentioned earlier, involved helping survivors and the bereaved express their grief in the belief that this would reduce their later symptoms.

Caplan (1964) proposed that a crisis is a turning point, and that individuals in crisis can either cope successfully and thereby enhance their ability to cope, or they can make maladaptive attempts to cope, and thereby decline in their psychological functioning.

The availability of resources is critical to post-disaster adjustment, and Caplan identified the provision of resources as a major form of crisis intervention. Resources include material resources (for instance, helping victims locate temporary housing after a flood, or locate missing family members) and social resources (for instance, providing emotional support to an individual who lost a family member in the flood, and locating other individuals who can provide support). Social resources may be especially critical for female victims, as we have mentioned. Psychologists should be involved in the allocation of resources after a disaster by emergency managers.

Helping deal with coping resources is another form of crisis intervention. While many models of crisis counseling have been proposed and discussed (McCle, 1992; Roberts, 2000), most tend to be solution focused, with an emphasis on the victim’s strengths and finding appropriate solutions to the problems they face.

In general, active problem-solving strategies are more effective than passive ones (Lazarus and Folkman, 1980). One issue for psychologists applying crisis intervention to disasters is that often there are not good solutions to the crisis, regardless of the individual’s coping strengths.

One type of crisis intervention, critical incident stress debriefing (CISD), has received a great deal of attention of late. Developed by Jeffrey Mitchell (1982), the model has a strict format and is applied to victims, family members, and especially rescue workers, including fire and police personnel. It is conducted in groups, and includes seven phases:

1. Introduction;
2. Facts about what happened in the crisis;
3. Thoughts about what happened;
4. Feelings about what happened;
5. Symptoms;
6. Teaching and information about stress and stress management; and
7. Re-entry (Mitchell and Everly, 2000).

Traditional psychotherapy falls into the category of secondary prevention. A number of interventions have been developed for victims with PTSD. Similar to strategies for other anxiety disorders, therapists use exposure (Foa and Kozak, 1986) to require clients to revisit the trauma of the disaster experience. The theory is that in dealing with a traumatic event, we use avoidance strategies to reduce the pain,
and these avoidance strategies are part of the symptom picture. More psychodynamic therapists may work to have disaster victims confront their feelings about their experience, using different labels from the behaviorist, but doing similar work.

Usually, cognitive restructuring is also a part of therapy for individuals with PTSD. We have mentioned that disasters lead to a shift in cognitions (Janoff-Bulman and Frieze), and victims of disaster often have distorted beliefs regarding their safety, the likelihood of another disaster, their personal worth and so forth.

Many forms of therapy have been developed for other disorders, such as depression and anxiety, which may result from disasters. These therapies are not specific to the treatment of post-disaster survivors. It is important that emergency managers be able to provide some forms of therapeutic intervention to victims and responders after a disaster.

Tertiary prevention involves preventing further deterioration of those already emotionally disturbed, and is less relevant to disaster work. It might apply to long-term victims of disaster, like Vietnam veterans whose problems persist, and who may need new and as yet undeveloped forms of treatment.

Australian psychologist researchers Devilly, Gist and Cotton (2006) point out that while individuals cope with trauma in varying ways and with varying degrees of success, a consistent finding in disaster research is that the vast majority of individuals recover from a traumatic experience without experiencing significant psychopathology.

Devilly, Gist and Cotton, (2006) Streeck-Fischer and van der Kolk (2000) identified the following issues as essential to address in trauma treatment:

- Safety.
- Stabilizing impulsive aggression against self and others.
- Affect regulation.
- Promoting mastery experiences.
- Compensating for specific developmental deficits.
- Judiciously processing both traumatic memories and trauma-related expectations.

In 2003, van der Kolk added two more issues specific to traumatized children:

- Developing an awareness of who they are and what has happened to them; repair of the sense of self.
- Learning to observe what is happening in the present time and to physically respond to current demands instead of recreating the traumatic past behaviorally, emotionally and biologically. The latter process is referred to as desomatizing memory. (Crenshaw, 2006)

Smyth, Hockemeyer, Anderson, et al. (2002) administered the task of writing about victimization experiences in Hurricane Floyd, and found that it reduced the relationship between intrusive thoughts and symptoms, not as dramatic a finding as that of Pennebaker and Harber (1993) who had earlier reported that writing down one’s feelings about a disaster can ameliorate symptoms. Lange, Riedijk, Hudcovicova, van de Ven, Schrieken and Emmelkamp (2003) have incorporated writing tasks into an Internet treatment for post-traumatic stress, which they report as successful. Newner, Schauer, Klaschik, Karunakara and Elbert (2004) describe an effective narrative exposure therapy for PTSD in Sudanese refugees, in which participants replayed the events of their life until they formed a coherent narrative. Pitman, Sanders, Zusman, et al. (2002) report that propranolol administered to victims of trauma interferes with memory of the event and ameliorates the potential for PTSD.

The issue of special characteristics of disaster that make psychological interventions more problematic should be addressed. Individuals in a disaster are more likely to see their needs as physical and real rather than as emotional, especially in a non-Western culture (Satel, 2005). Emotional problems may only emerge years later, as with many Vietnam veterans. It may be that psychologists in their work with other emergency managers need to educate individuals about possible emotional reactions instead of stepping in to try to intervene too quickly with those who are not in search of services.

It has been noted that most psychological efforts are directed at helping individuals develop active coping strategies instead of passive, fatalistic ones. It is sometimes the case in disasters, however, that there are no active strategies to take. One issue that has not been sufficiently discussed is that of individual styles and needs.

Fullerton, Ursano, Vance, and Wang (2000) reported that female emergency workers were three times more likely than males to seek out debriefing. The previous discussion of gender differences in vulnerability would suggest that women may be in special need of social support services post-disaster.

Roth and Cohen (1986) note that individuals seem to have preferred styles for either avoiding or approaching stress, and that these styles are difficult to change. Both avoidance and confrontation can be helpful depending on the circumstances. Most psychologists, going back as far as Lindemann, assumed that individuals need to confront the trauma of a disaster. It may be that enabling individuals to avoid effectively is just as useful, especially when the trauma is severe and there is little that can be done to change the situation.

Another issue is the perception that needing and taking help from a psychologist is stigmatizing. Jenkins (1998) reports, for instance, that co-workers were the most frequently sought-out resource (by 94 percent of emergency workers dealing with a mass shooting) and the most consistently useful source of emotional support. Although counselors were equally effective, only 50 percent of victims sought them out. Again, education from psychologists about the possible emotional consequences of disaster could normalize this process and make it easier for victims to seek help. It may also be that forms of paraprofessional intervention other than CISD need to be developed.

Gray, Maguen and Lidz (2004) point out that current crisis interventions focus on PTSD and its prevention, and that the wide range of victim responses, which we have reviewed earlier, demands a more nuanced and individuated range of treatments. Few interventions have been tailored to the needs of children (Wooding and Raphael, 2004), and it is possible that many interventions for children need to be addressed to their parents (Norris, 2001).

Sensorimotor psychotherapy

Sensorimotor psychotherapy (SP) is a method that integrates sensorimotor processing with cognitive and emotional processing in the treatment of trauma (Ogden and Minton, 2000). By using the body as the primary entry point in processing trauma, SP directly treats the effects of trauma on the body, which in turn facilitates emotional and cognitive processing. SP interventions that promote somatic resources include somatic awareness, the practice of mindfulness, contacting and tracking the body, completing actions evoked in trauma, economical movement, containment and specific movement exercises (Ogden and Minton, 2000).

One major component of SP is “maintaining the patient’s arousal levels within a ‘window of tolerance’ and expanding their integrative capacity” (Ogden and Minton, 2000). Another is the “synthesis of somatic ‘bottom-up’ techniques with cognitive ‘top-down’ interventions” (Ogden and Minton, 2000). People participating in creative arts therapy make art and move their bodies while dancing or making music, embodying the principles of SP and therefore experiencing the counterbalance of healing in a somatic form.
The difficulty of researching the post-disaster environment

In a report about obtaining consent for post-disaster studies, Jacobs et al write that “Gaining access to participants in the aftermath of trauma is difficult, and it is important that those rushing to collect data not traumatize survivors a second time. Submitting general protocols to an institutional review board (IRB) on a prospective basis may obviate hurrying proposals through after a disaster. Following the disaster, researchers can provide the IRB with the specific details for the incident to be studied. Among the questions to carefully address is whether one can adequately provide informed consent to participate in the aftermath of significant trauma” (Jacobs, et al, 2002).

In a report from a meeting jointly sponsored by the New York Academy of Medicine and the National Institute of Mental Health (NIMH) a group of 37 mental health professionals, trauma researchers, public health officials, ethicists, Institutional Review Board (IRB) representatives, and family members and first responder representatives from the Oklahoma City and World Trade Center disasters met to discuss ethical issues pertaining to research in the aftermath of disaster.

Four areas of critical importance to development, evaluation and conduct of research protocols post-disaster were identified by the planners of the meeting:

1. Decisional capacity of potential participants.
2. Vulnerability of research subjects.
3. Risks and benefits of research participation.
4. Informed consent.
   (NIMH meeting proceedings, 2002).

The attendees of this meeting published a 12-point list in the conclusion section with recommendations and considerations for research in future disaster events. They concluded that research can be conducted with survivors when their ability to consent has been evaluated and the research does not hinder their access to legal aid, government assistance or medical or mental health treatment (Collagen, et al, 2003).

The role of timing in a post-disaster intervention has been addressed by Polack, Vandebergh and Williams, who found that single intervention sessions with bereaved people in the early, acute stages of grief are found to be less effective than interventions that commence months later and for a longer duration.

Polack, Vandebergh, Williams (1975) Raphael, Wilson, Meldrum and McFarlane (1996) warn that early interventions may have negative effects and are a cause for concern, pointing out that a “sense of imperative to act may undermine the propensity for reflection.”

Medication

The medical model is challenged by Perry, who describes it as relying heavily on medications to bring about behavioral change by asserting that they do not reorganize dysfunctional neural networks. Both Perry (2005) and van der Kolk (2002, 2003) write about the importance of using nonverbal therapies, such as complementary therapies for treating children, youth and adults who have been affected by trauma exposure.

Specifically addressing children who have been abused, Perry suggests that children with brainstem-mediated hypervigilence, impulsivity and anxiety require patterned, repetitive brainstem activities to begin to regulate and organize these brainstem systems; talking, or even therapeutic relational interactions, are not particularly effective at providing brainstem-altering experiences.

Effective types of psychotherapy

Several clinical practice guidelines offer recommendations for the treatment of PTSD; for examples, see the newly revised PTSD Clinical Practice Guideline (2010). These guidelines come from different federal agencies, professional organizations and countries. The Institute of Medicine (IOM) also published a report in 2007 evaluating the evidence on PTSD treatment. The guidelines unanimously recommend cognitive behavioral therapies as the most effective treatment for PTSD, and the majority of guidelines recommend eye movement desensitization and reprocessing (EMDR) as well.

Cognitive behavioral treatments typically include a number of components, including psycho-education, anxiety management, exposure and cognitive restructuring. Exposure and cognitive restructuring are thought to be the most effective components.

Exposure-based treatments

The greatest number of studies have been conducted on exposure-based treatments, which involve having survivors repeatedly re-experience their traumatic event. There is strong evidence for exposure therapy, and of the various approaches, prolonged exposure (PE) has received the most attention. PE includes both imaginal exposure and in vivo exposure to safe situations that have been avoided because they elicit traumatic reminders.

In a multisite randomized controlled trial of PE in female veterans and active-duty personnel with PTSD, those who received PE experienced greater reduction of PTSD symptoms than women who received present-centered therapy and were less likely to meet PTSD diagnostic criteria.

Moreover, PE was more effective than the combination of PE plus stress inoculation training (SIT), SIT alone, or a waitlist control in female sexual assault survivors. In addition, PE alone and PE plus cognitive restructuring reduced PTSD and depression relative to a waitlist control in intention-to-treat and completer samples.

Cognitive approaches

Cognitive interventions also are widely supported in treatment guidelines. Cognitive behavioral therapy (CBT) is a psychotherapeutic approach that addresses dysfunctional emotions, behaviors and cognitions through a goal-oriented, systematic process. The name refers to behavior therapy, cognitive therapy and to therapy based upon a combination of basic behavioral and cognitive research.

CBT is effective for the treatment of a variety of conditions, including mood, anxiety, personality, eating, substance abuse, tic and psychotic disorders. Many CBT treatment programs for specific disorders have been evaluated for efficacy; the health-care trend of evidence-based treatment, where specific treatments for symptom-based diagnoses are recommended, has favored CBT over other approaches, such as psychodynamic treatment.

Studies that have targeted all trauma survivors, regardless of levels of stress reactions, have been ineffective in preventing PTSD (Roberts et al., 2009b). Trauma-focused CBT has been found to be effective in
reducing and preventing post-traumatic stress symptoms in individuals who were symptomatic, especially those meeting criteria for ASD (Roberts et al., 2009a; Stapleton, 2006).

These interventions have focused on the traumatic experience via exposure to memories and trauma reminiscence, sometimes combined with cognitive therapy or other behavioral interventions. One study has indicated that combined imaginal and in vivo exposure is significantly more effective than pure cognitive restructuring in reducing subsequent PTSD among individuals diagnosed with ASD (Bryant, et al., 2008a). This is an important finding that requires replication.

Cognitive behavioral therapy was more effective in reducing symptoms than a self-help booklet or repeated assessment. The combination of an elevated initial symptom score and failure to improve with self-monitoring was effective in identifying a group of patients with early PTSD symptoms who were unlikely to recover without intervention (Ehlers, 2003).

Cognitive processing therapy (CPT), one of the well-researched cognitive approaches, has a primary focus on challenging and modifying maladaptive beliefs related to the trauma, but also includes a written exposure component.

### The addition of other components

Some investigators have added a novel component to an effective treatment in hopes of further optimizing outcomes. Three groups of investigators compared an enhanced treatment to a waitlist control group: Cloitre and colleagues sequenced skills training in affect and interpersonal regulation before PE; Falsarri and colleagues developed multiple channel exposure therapy, a combination of PE, CPT and interoceptive exposure techniques for panic disorder; and Lindauer and colleagues developed brief eclectic therapy, a combination of psychodynamic and cognitive behavioral therapy. These studies showed that the combined treatments were effective, but not whether the additional components enhanced the standard treatments.

Glynn and colleagues compared exposure therapy alone with exposure therapy followed by behavioral family therapy, and Arntz and colleagues compared imaginal exposure alone with imaginal exposure plus imagery rescripting. In both studies, the combined treatment did not result in a greater reduction of PTSD severity, which suggests that the novel component was not necessary. However, statistical power may have been too low to compare the active treatments adequately.

### Eye movement desensitization and reprocessing (EMDR)

A relatively new and controversial therapy for PTSD is eye movement desensitization (EMDR), which involves controlled eye movements back and forth while the client is thinking about the trauma that occurred. Empirical findings are mixed (e.g., Taylor, Thordarson, Maxfield, Federoff, Lovell, and Ogrodniczuk, 2003).

The explanatory mechanism for why the technique should work is involved and many psychologists find it unconvincing.

For victims of fire, Krakow, Melendrez, Johnston, et al. (2002) described a sleep dynamism therapy, involving psychoeducational approaches about sleep, and found that both sleep disturbances and other anxiety and depressive symptoms lessened. Basoglu, Livano and Salmcioglu (2003) report that a single session with an earthquake simulator diminished symptoms of traumatic stress in earthquake victims.

In addition to cognitive behavioral therapies, eye movement desensitization and reprocessing (EMDR) is recommended in most practice guidelines. EMDR was the first of the new therapies that suggested the prospect of rapidly and effectively integrating traumatic memories. EMDR has a number of advantages over hypnosis, including that it could easily be put into a treatment protocol, which makes it relatively simple to conduct outcomes research. Since Francine Shapiro first articulated it in the late 1980s, EMDR has received intense scientific scrutiny and has been found to be a very effective treatment for PTSD.

Patients receiving EMDR engage in imaginal exposure to a trauma while simultaneously performing saccadic eye movements. There is good evidence that EMDR is more effective than waitlist and nonspecific comparison conditions. Further, two well controlled studies compared EMDR to PE. One study found equivalent results while the other found PE to be superior.

Additional research has investigated the mechanism of action in EMDR, and there is growing evidence that the theorized eye movements are an unnecessary component, suggesting that perhaps the mechanism of action is exposure.

In a randomized clinical trial study comparing the effects of EMDR, fluoxetine, and pill placebo among people between the ages of 18 and 65 with PTSD, EMDR was significantly superior to placebo treatment in reduction of PTSD symptoms and showed a percentage of loss of diagnostic status. Although there was no significant difference immediately post-treatment between the EMDR and fluoxetine groups, EMDR was superior to the medication at the six-month follow-up in complete remission of PTSD symptoms. EMDR was also superior to fluoxetine in the reduction of self-reported depressive symptoms for both samples (van der Kolk, et al, 2004).

### Music and art therapy

The arts have a history of helping in traumatic times. Judith Rubin writes that making creative activities available to people who have experienced trauma is a form of “secondary prevention” (Rubin, 2006). This is particularly helpful for those who are at increased risk for psychological problems. She states, “Like medicating at the first sign of an infection, offering arts to people who are in the throes of responding to overwhelming events may well prevent more serious and prolonged emotional damage” (Rubin, 2006). Throughout the articles reviewed and
included in this study, a repetitious refrain is heard singing the praises of
the use of creative arts therapies in trauma work.

The fact that trauma often involves and resides in the body is well
known and has been studied by numerous clinicians across disciplines
(van der Kolk, 2001, 2002, 2007; Levine, 1997; Morse, Mitchum and
Vander Steen, 1998; Rubin, 2005). The fact that it can occur before
the child has language or after it has rendered a person psychically
speechless is also well known and well documented (Austin, 2001,
2002, 2006; Crenshaw, 2006; Glass, 2006; Rubin, 2002, 2004 and
Webb, 2006). This can make accessing memories of traumatic events
difficult, if not impossible, to access with verbal therapy alone (Rubin,
2006). The success of using the arts in addressing the non-verbal
aspects of trauma work is not unique to clinicians trained in the
creative arts therapy modalities.

Dance; drumming; music; and massage-patterned, repetitive, sensory
input will begin to provide the kinds of experiences that may influence
brainstem neurobiology to reorganize in ways that will lead to
smoother functional regulation (Perry, 2005).

Perry also states that the complementary therapies, such as the creative
arts modalities, are being “rediscovered and appreciated for their
fundamental therapeutic value. Music and movement activities that
provide patterned, repetitive, rhythmic stimulation of the brainstem
are very successful in helping modulate brainstem dysregulation”
(Miranda, Arthur, Milhan, Mahoney and Perry, 1998; Miranda, Schick,
Dobson, Morgan and Perry, 1999).

Controversially, van der Kolk also embraces therapies that “use action
more than verbalization, such as EMDR (eye movement desensitization
and reprocessing,) sensorimotor psychotherapy, somatic therapies,
movement therapies, theater groups, massage, and martial arts training
such as aikido (van der Kolk, 2003a)” (Crenshaw, 2006).

This is controversial only because of the criticism received from some
in the scientific community who insist that there isn’t enough data to
prove efficacy of these non-traditional therapies. However, van der Kolk
points out that “The body keeps score,” and that the effects of trauma are
often stored in body memories and that verbal therapies can’t release the
trauma victim from this condition (van der Kolk, 1994).

When faced with the daunting task of helping severely traumatized clients,
those with training in verbal therapy turn to drawing, sand play, moving,
singing or using puppets to unlock painful secrets (Rubin, 2006). A
recent example was referred to as “music therapy for tsunami survivors”
although it was facilitated by clinical psychologist and stress-management
expert Sharada Sreedevi. The facilitator composed songs out of the stories
and images shared by participants affected by the earthquake and resulting
hand-impact that impacted the southeastern Asian coastal areas.

After months of group therapy sessions, the participants were led to
sing songs based on their stories (Tulasi, 2005). She states, “Music can
be a pathway to negotiate anger and aggression, to alleviate sadness
and fear and to arouse, awaken and activate victims who are paralyzed
by depression and fear” (Tulasi, 2005).

Harnessing to importance of music in the local culture, she makes the
point that “In the past, village life revolved around communal songs and
dances. With the advent of mass media, this has largely been lost. Here
on the tsunami-ravaged seashore, the survivors are reclaiming this ancient
way of communicating and healing as a community” (Tulasi, 2005).

Culture plays a key role in how individuals cope with potentially
traumatizing experiences by providing the context in which social
support and other positive and uplifting events can be experienced.
The interactions between an individual and his or her environment and
community play a significant role in determining whether the person is
able to cope with the potentially traumatizing experiences that set the
stage for the development of PTSD. Thus, PTSD reflects the socio-
cultural environment in which it occurs (DeVries, 1996).

Music therapy and other experiential therapies, such as the creative arts
therapies, hold an essential place in trauma work. In her book introducing
the therapeutic spiral model, Hudgins quotes Bessel van der Kolk in his
keynote address to the 1997 American Society of Group Psychotherapy
and Psychodrama, stating “Body-centered, experiential methods are the
‘treatment of choice’ for traumatized people” (van der Kolk, 1997).

Music therapy and other experiential therapies also hold an essential
place in trauma work because they can provide an unobtrusive, positive
format for debriefing responding personnel. By providing diffusion and
creating an atmosphere that is positive, supportive and based on care and
concern for the team members, music therapy provides a safe place for
necessary expression. In recent years, music therapists have used their
skills and training to provide services to survivors of mass trauma.

Some examples of situations where music therapy has been used are
the terrorist attacks in New York City, war-torn Bosnia and Sierra-
Leone, Africa, the school shootings in Columbine and Colorado, and
recently in the Gulf Coast region of Mississippi and Louisiana after a
deadly and destructive series of hurricanes.

The design of this research is a literature-based study. The matrix
method, developed by Judith Garrard (1999), was used to compile
and code the data to thoroughly study the data and systematically and
carefully build the theory. The articles and book chapters were then
analyzed with the qualitative method of grounded theory.

A qualitative, systematic literature based study using grounded theory
methodology provides an overarching statement on the state of the
field, locating all the work on a given topic, utilizing appropriate
standards for inclusion or exclusion, and then evaluating, comparing,
coding and synthesizing.

Through the articles and book chapters, the methods used to prevent,
treat or alleviate symptoms of vicarious traumatization and secondary
post-traumatic stress disorders were collected, coded, analyzed and
themes were extrapolated from the data to form a theoretical model.

Many common themes emerged as the preparation and training methods
for mental health practitioners across all disciplines were examined.
Those themes included receiving training before the disaster response,
being well-informed about trauma and trauma work, setting up and
participating in supervision or debriefing during the work with other
advanced, knowledgeable professionals, purposely designing scheduled
breaks from the environment and the work, and preparing for rejection
when survivors choose not to use the available therapeutic services.

Other themes related to preparation specific to music therapy emerged,
such as the need for music therapists to make music for themselves
during or directly after providing care to traumatized people; the value
of collaborating with peers and participating in peer debriefing after
providing services; the value of analyzing music therapists’ internal
responses when making music; the importance of the timing of the
music therapy interventions; the importance of presenting music on a
sophisticated level; and the need to maintain focus on major goals, such as
relieving tension, expressing anxiety, and building resilience and hope.

Currently, the standard clinical preparation for music therapy students
does not include crisis response or trauma work, leaving the majority
of working professionals in the field with little or no preparation for
this type of trauma work (AMTA Clinical Training Guidelines, 2007).

Most professional music therapists who have been involved in mass
trauma responses have had no prior education or training regarding
implementing music therapy in the immediate aftermath of crisis. Art
therapist Hayley Berman in South Africa wrote about introducing the
creative arts therapies to trauma workers on a national level through
an organization called Dedel’ingoma. In addition to art therapy, the
core team consists of a drama therapist, music therapist, clinical
psychologist and a massage therapist.
Author Hayley Berman writes, “If caregivers are held and contained, they are essentially able to hold and contain those they work with and live with. Thus, this work engages both on a reparative and healing level, as well as a preventive one in addressing future generations of history-making through the process of art therapy in South Africa” (Berman, 2005).

Play therapy for children

Children are one of the most vulnerable populations during and after natural disasters (Speier, 2000). Most children experience temporary symptoms, such as nightmares, fears or disruptive behavior in school, after a disaster (Speier, 2000). Some children with risk factors, such as limited intellectual ability, female gender, younger age, unstable family life, and intense exposure to frightening events, may experience ongoing symptoms (Yule and Canterbury, 1994). Vernberg, LaGreca, Silverman, and Prinstein (1996) found 55 percent of elementary school children in their study exhibited moderate to very severe symptoms three months after Hurricane Andrew in Dade County, Florida.

Play therapists have essential knowledge and skills that many disaster responders lack. Play therapists know child development principles, can build rapport with children through toys and puppets, communicate empathy and unconditional acceptance to children, and understand children’s language of play (Nalavany, Ryan, Gomez, and Lacasse, 2005). Their skills of tracking play behavior, reflecting feelings, setting therapeutic limits, and enlarging the meaning of children’s play are also valuable in disaster response situations (Baggerly, 2004).

Group therapy

Dyregrov (1997) described how, in times of mass crisis, a group experience provides optimal support in several ways. A group experience normalizes the cognitive and affective reactions being experienced by the surviving loved ones. The group also mobilizes support and acts as a resource for its members. Specifically, the group experience is capable of validating the emotional impact of the trauma, challenging distorted thinking and mobilizing alternative coping resources in a supportive peer environment (Foy et al., 2000; Galante and Foa, 1986; Yalom, 1975).

The decision to provide a group experience for the surviving loved ones following the Flight 427 disaster was made for several reasons. The importance of emotional support following a shared traumatic experience was seen as the strongest rationale for the use of a group intervention. A group modality also allowed professionals to promptly serve a greater number of families.

Finally, literature supports the importance of informal partnerships and peer networks that form during group intervention (Galante and Foa, 1986; Gottlieb, 1998), which act to supplement the efficacy of group therapy and to promote the effects of treatment following termination. Droge, Arntson, and Norton (1986) found that group members who were actively involved in extra-group social ties experienced greater benefit from the group experience following group closure.

It was predicted that a group experience for the survivors of the victims of Flight 427 would facilitate recovery. We recognized that the mass destruction at the disaster site left many questions unanswered and compromised the opportunity for family members to accept their losses and move on with their lives. Because of the traumatic nature of the losses, trauma processing and bereavement support were paramount foci of treatment. Furthermore, we theorized that specialized coping skills and psychosocial support would be necessary for family members as they attempted to deal with legal matters, attendance at hearings, and the eventual identification of body parts.

Overall, it is believed that the support generated by the group process would lead to bonding and support that would go beyond the time limitations of the group. Specifically, the group would become a self-serving resource that would provide ongoing support as the long processes of bereavement, investigation and litigation continued.

Psychological debriefing

Psychology has a long history of evaluation research, again making it an important partner for emergency managers who need to assess the effectiveness of their planning and interventions. Psychologists have investigated the effectiveness of therapeutic interventions for disaster victims with mixed results.

Recent focus on the efficacy of critical incident stress debriefing has taken emphasis away from the many efficacious types of intervention that mental health fields have developed, and perhaps represents a backlash against an overly enthusiastic application of the CISD model. There was little empirical investigation of the efficacy of CISD in its early days.

More recently, CISD and other debriefing approaches have been scrutinized intensely. Here again, the approaches are under investigation for their efficacy with many types of victimization, not just disasters. Mitchell and Everly (2000) argue that the findings are mixed because of the variability of the training and skill of the provider.

Many studies, however, have found no positive results beyond that of a placebo condition (Humphries and Carr, 2001; Rose, Brewin, Andrews and Kirk, 1999) or no treatment (Conlon, Fahy, and Conroy, 1998; Kenardy, Webster, Lewin, Carr, Hazell, and Carter, 1996). Some studies with randomized assignment to groups have actually found that trauma victims who underwent debriefing showed higher levels of symptoms than those who did not (Bisson, Jenkins, Alexander, and Bannister, 1997; Mayou, Ehlers, and Hobbs, 2000).

Such results have even reached the popular press in an article in the New Yorker, which focused on the lack of benefit of debriefing for individuals suffering from reactions to the September 11 attack on the World Trade Center (Groopman, 2004), and the New York Times, which featured an article about the inappropriateness of psychological help for non-Western victims of disasters (Satel, 2005).

A number of reviews (Arendt and Elklit, 2001; Ehlers and Clark, 2003; Emmerik, Kamphuis, Hulsbosch, and Emmelkamp, 2002; Litz, Gray, and Adler, 2002; Raphael, 2000) conclude that the lack of benefit for debriefing after disasters means it should be used cautiously, never be compulsory, and that further research is necessary.

Since CISD has been the primary technique used post-disaster, these findings have thrown the whole issue of psychology’s ability to understand and help disaster victims and responders into question. It is important to note that psychotherapy itself is effective (Lambert and Ogles, 2004), and has been effective in treating PTSD (Marks, Lovell, Noshirvani, Lavanou, and Thrasher, 1998).

There are several possible explanations for this disparity between the effectiveness of CISD and psychotherapy in treating PTSD:
● CISD may be too short-term and unfocused to have enough of an impact.
● Psychotherapy may need to be adapted to the particular situation of disaster victims.
● There may be characteristics of disaster that are different from other traumatic stress, making intervention more difficult.

We will take each of these explanations in order.

CISD is an extremely short-term form of treatment. Reviews that compare debriefing with cognitive behavioral therapy (CBT) (Litz et al., 2002; Ehlers and Clark, 2003) show that CBT is more effective in ameliorating trauma symptoms, perhaps because it is longer term and more focused on symptoms.

CISD is also a treatment provided mainly by other disaster workers trained in the process, rather than by professional psychologists, although professionals certainly sometimes provide CISD.

Barker and Pistrang (2002) argue convincingly that the processes of social support and psychotherapy are overlapping and should be conceptualized in similar ways. For instance, the outcome of professional helping seems to be no more helpful than paraprofessional helping (e.g., Faust and Zlotnick, 1995).

Hogan, Linden and Najarian (2002) review 100 studies on social support intervention and conclude that they in general are helpful, although we do not know which kinds of interventions work best for treatment of PTSD. However, no trials of ACT for PTSD have been published to date.

Finally, there is also interest in alternative medicine treatments. For example, acupuncture was as effective as group cognitive behavioral treatment, and both were more effective than the waitlist condition.

Overall, cognitive behavioral therapies such as prolonged exposure and cognitive processing therapy as well as eye movement desensitization reprocessing are considered first-line treatments for PTSD and have strong evidence bases. Components of these treatments have been combined with other interventions, with no support for improved benefits over the standard treatments alone.

Other treatments, such as group treatment, show promise; however, more research is needed before drawing firm conclusions about their effectiveness.

Other approaches

Other treatments in addition to cognitive behavioral therapy and EMDR may be effective; however, at this time we do not have enough evidence to confidently indicate that they are effective. For example, despite the appeal of group treatments, results of the few randomized controlled trials of group therapy have been mixed. In addition, psychodynamic therapy, hypnotherapy, and trauma desensitization were more effective than a waitlist control group in one trial. Rogerian supportive therapy was less effective in treating symptoms of PTSD and anxiety than cognitive behavioral therapy in one study.

Acceptance and commitment therapy (ACT), which is considered a third-wave behavioral therapy, focuses on reducing experiential avoidance and engagement with maladaptive thoughts and encourages clients to approach activities consistent with their personal values. Several case studies have documented support for ACT in the

Recommendations specific to PTSD therapy

There are several models of treatment for people who have been exposed to mass trauma and violence as well as those who have developed PTSD. In an article published in 2004, Australian psychologists Robertson, Humphreys and Ray discuss findings on a number of interventions that are commonly used in the treatment of trauma victims or patients with PTSD: critical incident stress debriefing, psychoeducation, exposure therapy, eye movement desensitization reprocessing, stress inoculation therapy, trauma management therapy, cognitive therapy, psychodynamic psychotherapy, and hypnotherapy (Robertson, Humphreys and Ray, 2004).

Van der Kolk points out “Until recently, clinicians had limited knowledge of how to help people integrate such disintegrated traumatic imprints. Traditionally, before the advent of contemporary methods of treatment outcome evaluation, many clinicians, from Pierre Janet to Milton Erikson and his followers, considered hypnosis to be the treatment of choice. Unfortunately, the efficacy of hypnosis for the treatment of PTSD was never systematically studied” (van der Kolk, 2005, p. 26).

Robertson et al., also discuss a number of treatment strategies that have recently been studied in PTSD, including imagery rehearsal, memory structure intervention, interpersonal psychotherapy and dialectical behavior therapy (Robertson, Humphreys and Ray, 2004).

The following are recommendations for treatment of PTSD:

1. All patients should have a thorough assessment of medical and psychiatric history, with particular attention paid to the following:
   ○ Baseline functional status.
   ○ Baseline mental status.
   ○ Medical history, including any injury (e.g., mild-TBI).
   ○ Medications, including medication allergies and sensitivities; prescription medications; herbal or nutritional supplements; and over-the-counter (OTC) medications (caffeine, energy drinks or use of other substances).
   ○ Past psychiatric history, including prior treatment for mental health and substance use disorder, and past hospitalization for depression or suicidality.
   ○ Current life stressors.

2. All patients should have a thorough physical examination, with particular attention to the neurological exam and stigmata of physical/sexual abuse, self-mutilation, or medical illness. Note distress caused by or avoidance of diagnostic tests and examination procedures.
3. All patients, particularly the elderly, should have a mental status examination (MSE), including assessment of the following:
   ○ Appearance and behavior.
   ○ Language/speech.
   ○ Thought process (loose associations, ruminations, obsessions) and content (delusions, illusions and hallucinations).
   ○ Mood (subjective).
   ○ Affect (to include intensity, range, and appropriateness to situation and ideation).
   ○ Level of consciousness (LOC).
   ○ Cognitive function.

4. Survivors who present with symptoms that do not meet the diagnostic threshold of ASD or PTSD should be monitored and may benefit from follow-up and provision of ongoing counseling or symptomatic treatment.

5. Recommend monitoring for development of PTSD using validated symptom measures (e.g., PTSD Checklist, other screening tools for ASD/PTSD).

6. Psychotherapy:
   ○ Consider early brief intervention (four to five sessions) of cognitive-based therapy that includes exposure-based therapy, alone or combined with a component of cognitive restructuring therapy for patients with significant early symptom levels, especially those meeting diagnostic criteria for ASD.
   ○ Routine formal psychotherapy intervention for asymptomatic individuals is not beneficial and may be harmful.
   ○ Strongly recommend against individual psychological debriefing as a viable means of reducing acute stress disorder (ASD) or progression to post-traumatic stress disorder (PTSD).
   ○ The evidence does not support a single session group psychological debriefing as a viable means of reducing acute stress disorder (ASD) or progression to post-traumatic stress disorder, but there is no evidence of harm (Note: this is not a recommendation pertaining to operational debriefing).
   ○ Groups may be effective vehicles for providing trauma-related education, training in coping skills, and increasing social support, especially in the context of multiple group sessions.
   ○ Group participation should be voluntary.

7. Pharmacotherapy:
   ○ There is no evidence to support a recommendation for use of a pharmacological agent to prevent the development of ASD or PTSD.
   ○ Strongly recommend against the use of benzodiazepines to prevent the development of ASD or PTSD.

Research suggests that relatively brief but specialized interventions may effectively prevent PTSD in some subgroups of trauma patients. Several controlled trials have suggested that brief (four to five sessions) cognitive-behavioral treatments comprised of education, breathing training and relaxation, imaginal and in vivo exposure, and cognitive restructuring delivered within weeks of the traumatic event, can often prevent PTSD in survivors of sexual and nonsexual assault (Foa et al., 1995), MVAs, and industrial accidents (Bryant et al., 1998, 1999).

Brief intervention with patients hospitalized for injury has been found to reduce alcohol consumption in those with existing alcohol problems (Gentilello et al., 1999). Controlled trials of brief early intervention services targeted at other important trauma sequelae (e.g., problems returning to work, depression, family problems, trauma recidivism, and bereavement problems) remain to be conducted, but it is likely that targeted interventions may be effective in these arenas for at least some survivors.

At present, it is unknown how much time should elapse after a traumatic experience before cognitive behavioral intervention is initiated (Foa, 2009). If provided too early, individuals who may not need therapy will consume helping resources. For this reason, trials have not commenced before two weeks after the trauma (Bryant, 2003).

When providing therapeutic services to those diagnosed with ASD, clinicians are encouraged to do the following:

1. Address acute medical/behavioral issues to preserve life and avoid further harm by:
   ○ Providing appropriate medical/surgical care or referring to stabilize.
   ○ Evaluating the use of prescribed medications.
   ○ Preventing possible biological or chemical agent exposure.
   ○ Managing substance intoxication or withdrawal.
   ○ Stopping self-injury or mutilation.
   ○ Addressing inability to care for oneself.

2. Arrange a safe, private and comfortable environment for continuation of the evaluation:
   ○ Assess danger to self or others (e.g., suicidal, or homicidal behavior).
   ○ Establish a working treatment alliance with the patient.
   ○ Maintain a supportive, non-blaming, non-judgmental stance throughout the evaluation.
   ○ Assist with the removal of any ongoing exposure to stimuli associated with the traumatic event.
   ○ Minimize further traumas that may arise from the initial traumatic event.
   ○ Assess and optimize social supports.
   ○ Secure any weapons and explosives.

3. Legal mandates should be followed:
   ○ Reporting violence and assault.
   ○ Confidentiality for the patient.
   ○ Mandatory testing.
   ○ Attending to chain of evidence in criminal cases (e.g., rape, evaluation).
   ○ Involuntary commitment procedures if needed.

4. Carefully consider the following potential interventions to secure safety:
   ○ Find safe accommodation and protect against further trauma.
   ○ Voluntary admission if suicidal.
Restraint or seclusion only if less restrictive measures are ineffective.
Provide medications managing specific symptoms as needed (i.e., sleep, pain).

5. Educate and “normalize” observed psychological reactions to the chain of command.
6. Evacuate to next level of care if unmanageable, if existing resources are unavailable, or if reaction is outside of the scope of expertise of the care provider

**Recommendations specific to anxiety disorder treatment**

While the majority of the focus is on PTSD, it should be noted that anxiety disorder is another common result of disasters. Everyone feels anxious from time to time. Stressful situations, such as meeting tight deadlines or important social obligations, often make us nervous or fearful. Experiencing mild anxiety may help a person become more alert and focused when facing challenging or threatening circumstances.

But individuals who experience extreme fear and worry that does not subside may be suffering from an anxiety disorder. The frequency and intensity of anxiety can be overwhelming and interfere with daily functioning. Fortunately, the majority of people with an anxiety disorder improve considerably by getting effective psychological treatment.

There are several major types of anxiety disorders, each with their own characteristic:

- People with generalized anxiety disorder have recurring fears or worries, such as about health or finances, and they often have a persistent sense that something bad is just about to happen. The reason for the intense feelings of anxiety may be difficult to identify. But the fears and worries are very real and often keep individuals from concentrating on daily tasks.
- Panic disorder involves sudden, intense and unprovoked feelings of terror and dread. People who suffer from this disorder generally develop strong fears about when and where their next panic attack will occur, and they often restrict their activities as a result.
- A related disorder involves phobias or intense fears about certain objects or situations. Specific phobias may involve things such as encountering certain animals or flying in airplanes, while social phobias involve fear of social settings or public places.
- Obsessive-compulsive disorder is characterized by persistent, uncontrollable and unwanted feelings or thoughts (obsessions) and routines or rituals (compulsions) in which individuals engage to try to prevent or rid themselves of these thoughts. Examples of common compulsions include washing hands or cleaning house excessively for fear of germs, or checking work repeatedly for errors.
- Someone who suffers severe physical or emotional trauma, such as from a natural disaster or serious accident or crime, may experience post-traumatic stress disorder. Thoughts, feelings and behavior patterns become seriously affected by reminders of the event, sometimes months or even years after the traumatic experience.

Symptoms such as extreme fear, shortness of breath, racing heartbeat, insomnia, nausea, trembling and dizziness are common in these anxiety disorders. Although they may begin at any time, anxiety disorders often surface in adolescence or early adulthood. There is some evidence that anxiety disorders run in families; genes as well as early learning experiences within families seem to make some people more likely than others to experience these disorders.

If left untreated, anxiety disorders can have severe consequences. For example, some people who suffer from recurring panic attacks avoid any situation that they fear may trigger an attack. Such avoidance behavior may create problems by conflicting with job requirements, family obligations or other basic activities of daily living.

People who suffer from an untreated anxiety disorder often also suffer from other psychological disorders, such as depression, and they have a greater tendency to abuse alcohol and other drugs. Their relationships with family members, friends and coworkers may become very strained. And their job performance may decline.

Most cases of anxiety disorder can be treated successfully by appropriately trained mental health professionals, such as licensed psychologists. Research has demonstrated that cognitive-behavioral therapy (CBT) can be highly effective in treating anxiety disorders. Psychologists use CBT to help people identify and learn to manage the factors that contribute to their anxiety.

Behavioral therapy involves using techniques to reduce or stop the undesired behaviors associated with these disorders. For example, one approach involves training patients in relaxation and deep breathing techniques to counteract the agitation and rapid, shallow breathing that accompany certain anxiety disorders.

Through cognitive therapy, patients learn to understand how their thoughts contribute to the symptoms of anxiety disorders, and how to change those thought patterns to reduce the likelihood of occurrence and the intensity of reaction. The patient’s increased cognitive awareness is often combined with behavioral techniques to help the individual gradually confront and tolerate fearful situations in a controlled, safe environment.

Along with psychotherapy, appropriate medications may have a role in treatment. In cases where medications are used, more than one treatment provider may manage the patient’s care collaboratively. It is important for patients to realize that there are side effects to any drugs, which must be monitored closely by the provider who prescribed the medication.

Licensed psychologists are highly trained and qualified to diagnose and treat people with anxiety disorders using techniques based on best available research. Psychologists’ extensive training includes understanding and using a variety of psychotherapies, including CBT.

Psychologists sometimes use other approaches to effective treatment in addition to individual psychotherapy. Group psychotherapy, typically involving unrelated individuals who all have anxiety disorders, can be an effective approach to delivering treatment and providing support.

Further, family psychotherapy can help family members better understand their loved one’s anxiety and learn new ways of interacting that do not reinforce the anxiety and associated dysfunctional behaviors.

Individuals suffering from anxiety disorders may also want to consider mental health clinics or other specialized treatment programs dealing with specific anxiety disorders, such as panic or phobias, that may be available in their local area.

The large majority of people who suffer from an anxiety disorder are able to reduce or eliminate their anxiety symptoms and return to normal functioning after several months of appropriate psychotherapy. Indeed, many people notice improvement in symptoms and functioning within a few treatment sessions. The patient should be comfortable from the outset with the psychotherapist. Together the patient and psychotherapist should develop an appropriate treatment plan. The patient’s cooperation is crucial, and there must be a strong sense that the patient and therapist are collaborating well as a team to treat the anxiety disorder.

No one plan works well for all patients. Treatment needs to be tailored to the needs of the patient and to the type of disorder or disorders that the individual suffers. The psychotherapist and patient should work together to assess whether a treatment plan seems to be on track.

Patients respond differently to treatment, and adjustments to the plan sometimes are necessary. Anxiety disorders can severely impair a person’s functioning in work, family and social environments. But the prospects for long-term recovery are good for most individuals who seek appropriate professional treatment (APA, 2010).
Conclusion

In summarizing psychology’s achievements in understanding and dealing with disaster, the following seem clear. Disasters can cause severe psychological disturbance, with many victims experiencing PTSD, depression and anxiety. More research is needed to determine the entire range of disorders and the frequency of their occurrence after disaster. The severity and duration of the disaster will predict much of the extent of the reaction. Vulnerability factors in the individual do play a part, with gender, age, previous level of psychopathology, poverty, ethnicity and social support correlating with extent of post-disaster psychopathology in victims. These variables interact in complex ways.

Mental health fields use both pre-disaster techniques in emergency planning and post-disaster methods in crisis intervention, debriefings, psychotherapy, and evaluation of emergency management efforts. Recent research has questioned the usefulness of single session debriefings, but there is support for longer-term interventions and there is the promise of new types of interventions for disaster victims.

References

POST-THERAPY ON DISASTERS

Final Examination Questions

Select the best answer for each question and then proceed to www.EliteCME.com to complete your final examination.

1. While it’s important to understand what qualifies as a disaster and its impact on individuals, the next step is an understanding of ___________ to effectively help those who have experienced disaster.
   a. Political ramifications.
   b. Social norms.
   c. Best practice therapeutic interventions.
   d. Historical trends.

2. Individuals with ___________ have a decrease in emotional responsiveness, often finding it difficult or impossible to experience pleasure in previously enjoyable activities, and frequently feel guilty about pursuing usual life tasks.
   a. Obsessive-Compulsive Disorder.
   b. Depression.
   c. Acute Stress Disorder.
   d. Reactive Attachment Disorder.

3. Socioeconomic status (SES), available resources, previous level of psychopathology, age, social/family factors, gender, and ethnicity are all examples of:
   a. Vulnerability factors.
   b. Cross-analytical factors.
   c. Post-therapeutic factors.
   d. Symbolic factors.

4. ___________ is critical to post-disaster adjustment.
   a. Self-assessment.
   b. The quality control guide.
   c. Social media networking.
   d. Availability of resources.

5. By using the body as the primary entry point in processing trauma, ___________ directly treats the effects of trauma on the body, which in turn facilitates emotional and cognitive processing.
   a. Exposure Based Treatment.
   b. Sensorimotor Psychotherapy.
   d. Cognitive Processing Therapy.

6. ___________ is effective for the treatment of a variety of conditions, including mood, anxiety, personality, eating, substance abuse, tic, and psychotic disorders.
   a. Exposure Based Treatment.
   b. Sensorimotor Psychotherapy.
   d. Eye Movement Desensitization and Reprocessing.

7. ___________ holds an essential place in trauma work as they can provide an unobtrusive, positive format for debriefing responding personnel.
   b. Play Therapy.
   c. Music and Art Therapy.
   d. Family Engagement.

8. Though previously widely utilized for disasters, research has shown that ___________ is not effective.
   a. Play Therapy.
   b. Critical Incident Stress Debriefing.
   c. Group Therapy.

9. ___________, which is considered a third wave behavioral therapy, focuses on reducing experiential avoidance and engagement with maladaptive thoughts and encourages clients to approach activities consistent with their personal values.
   a. Exposure Based Treatment.
   b. Eye Movement Desensitization and Reprocessing.
   c. Acceptance and Commitment Therapy.
   d. Play Therapy.

10. ___________ is characterized by persistent, uncontrollable and unwanted feelings or thoughts and routines or rituals in which individuals engage to try to prevent or rid themselves of these thoughts.
    a. Panic disorder.
    b. Reactive attachment disorder.
    c. Obsessive-compulsive disorder.
    d. Attention deficit disorder.