

## Continuing Education

# Psychological Trauma and Posttraumatic Stress Disorder: A Review

Raymond B. Flannery, Jr., Ph.D.

**ABSTRACT:** *This paper presents a concise, fully-referenced, state-of-the-art review of psychological trauma and Posttraumatic Stress Disorder (PTSD) for emergency mental health practitioners. The nature of traumatic events, their common symptomatology, their disruptions to normal psychological and biological functioning, and the negative health consequences of untreated incidents are presented. Implications for the treatment of victims of traumatic events within the context of a Critical Incident Stress Management (CISM; Everly & Mitchell, 1999) approach are discussed. [International Journal of Emergency Mental Health, 1999, 2, 135-140.]*

**KEY WORDS:** psychological trauma; symptoms of psychological trauma; psychoneuroendocrinology; critical incident; CISM; posttraumatic stress disorder

Emergency mental health (EMH) services cover an array of services from individual crisis intervention to group debriefing to professional referrals for victims of extreme stressor critical incidents, including disasters and human perpetrated violence (Everly & Mitchell, 1999). As these services have evolved and expanded, Critical Incident Stress Management (CISM; Everly & Mitchell, 1999) has emerged as a paradigm for conceptualizing and organizing these EMH services so that the care provided to victims is enhanced and the stress experienced by EMH practitioners is reduced.

CISM (Everly & Mitchell, 1999) is an integrated, comprehensive, multicomponent crisis intervention approach to critical incidents. Its purpose is to stabilize and mitigate the acute psychological distress associated with psychological trauma and to prevent or mitigate any potentially adverse posttraumatic sequelae associated with Acute Stress Disorder, Posttraumatic Stress Disorder (PTSD), and other manifestations of acute human crisis. CISM (Everly & Mitchell, 1999) spans a continuum of services from pre-crisis to acute crisis to post-crisis procedures, and as currently evolved, includes seven core elements: 1) pre-crisis preparation; 2) large scale demobilization procedures; 3) individual acute crisis counseling; 4) brief small group discussions, called debriefings, to assist in acute symptom reduction; 5) longer small group discussions, known as

Critical Incident Stress Debriefing (CISD; Mitchell & Everly, 1996), to assist in achieving a sense of closure after an incident; 6) family crisis intervention procedures; and 7) referrals for additional psychological assessment or treatment, when indicated. CISM (Everly & Mitchell, 1999) is based on sound empirical findings (Everly, Flannery, & Mitchell, 1999; Everly & Mitchell, 1999) and is emerging as an international standard of care for primary, secondary, and tertiary victims.

Central to EMH and CISM interventions (Everly & Mitchell, 1999) is the concept of the critical incident. A critical incident may be thought of as an event which serves as a perceived threat or challenge to one's well-being. A crisis results when that critical incident then serves to overwhelm one's usual coping mechanisms yielding manifest evidence of impaired functioning and/or evidence of a psychiatric syndrome or disorder. (Everly & Mitchell, 1999). Typically, these critical incidents are specific, often unexpected, sometimes potentially life-threatening, time-limited events which present the individual with loss or threats to personal goals or well-being. Examples might include divorce, financial ruin, and serious medical illness. While some individuals encounter critical incidents with minimal disruptions in their daily functioning (Flannery, 1994), more common in threatened individuals are experiences of psychological disorganization, anxiety, depression, and somatic pain. These latter medical conditions are usually time-limited and pass when the critical incident has been adequately addressed.

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Raymond B. Flannery, Jr., Ph.D. Harvard Medical School.

Address correspondence concerning this article to Raymond B. Flannery, Jr., Ph.D., Department of Psychiatry, The Cambridge Hospital, 1493 Cambridge Street, Cambridge, MA 02139.

Of special importance to emergency mental health programs are the extreme stressor critical incidents, such as natural and man-made disasters and human perpetrated violence in the form of physical or sexual assaults. Frequently, these events result in psychological trauma (American Psychiatric Association, 1994; Everly & Lating, 1995; Flannery, 1994; van der Kolk, McFarlane, & Weisaeth, 1996) with its major and painful disruptions in psychological functioning. Unlike less severe critical incidents, these traumatic impairments do not necessarily pass with the closure of the critical incident, but may continue as Posttraumatic Stress Disorder (PTSD), a state which will last until death, if it is not treated.

It is estimated that more than half of the population in the United States will experience one traumatic event over the course of their lives and that twenty-five percent of these will undergo two or more of these events in a lifetime (American Psychiatric Association, 1994; Norris, 1992; Tomb, 1994a; Yehuda, 1998). Since many of these extreme stressor critical incidents have remained untreated, the prevalence of PTSD in the population varies in frequency from 1% - 14% depending on the type of critical incident. By any standard, this is a serious public health problem.

The purpose of this paper in the Continuing Education Series is to provide a basic overview of the nature of psychological trauma and PTSD. The focus is on symptoms, common disruptions in psychological functioning, and biological underpinnings. It concludes with common negative outcomes, outcomes that can be precluded by emergency mental health services, especially within a comprehensive CISM approach (Everly et al., 1999).

### **The Nature of Psychological Trauma and PTSD**

Psychological trauma refers to the impact of an extreme stressor critical incident on an individual's psychological and biological functioning. This process and its aftermath have been the subject of extensive scrutiny during the past five years (American Psychiatric Association, 1994; Beall, 1997; Danieli, 1998; Dean, 1997; Everly & Lating, 1995; Flannery, 1994, 1998; Pynoos, 1994; Roth & Friedman, 1998; Sommer & Williams, 1994; Tomb, 1994b; van der Kolk et al., 1996; Wilson & Raphael, 1993; Yehuda, 1998).

Traumatic events may arise when an individual is confronted with actual or threatened death or serious injury or some other threat to one's physical integrity. It also may occur by witnessing these events occurring to others (American Psychiatric Association, 1994). In addition, adult

victims or witnesses must experience intense fear, horror, or helplessness. In children, this intense fear may be exhibited as disorganized or agitated behavior. Common examples of traumatic events that may be encountered by individuals and their families include combat, being a prisoner of war, acts of terrorism, hostage-taking, natural and man-made disasters, homicides, robberies, physical and sexual assaults, major car accidents, and serious life-threatening illnesses.

Those who are traumatized will develop characteristic symptoms that may include intrusive recollections of the event, avoidance of the traumatic situation with a numbing of general responsiveness, and increased physiological arousal. See Table 1 below for a listing of some of the more common symptoms. The American Psychiatric Association (1994) provides a complete listing of all symptoms.

*Intrusive symptoms* involve the persistent re-experiencing of the event in images, thoughts, recollections, day dreams, and nightmares. Victims may act or feel as if they were reliving these events, and may experience great distress in the face of events that remind the victim of the trauma. *Avoidance symptoms* involve avoiding places and thoughts associated with the trauma, problems in recall of the event, a marked loss of interest in other significant aspects of the person's life,

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**Table 1: Some Common Symptoms of Psychological Trauma and PTSD**

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***Intrusive Symptoms:***

- Persistent re-experiencing of the event in images, thoughts, recollections, daydreams, and nightmares
- Acting and feeling as if re-living the event
- Distress in the presence of symbolic reminders

***Avoidance Symptoms:***

- Avoiding places and thoughts symbolic of the trauma
- Problems in recalling the event
- Loss of interest in important activities
- Restricted emotions
- Sense of foreshortened future

***Arousal Symptoms:***

- Hypervigilance
  - Exaggerated startle response
  - Sleep disturbance
  - Difficulty concentrating
  - Irritability or angry outbursts
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restricted emotions, and the sense of a foreshortened future. *Arousal symptoms* include difficulties with sleep, hypervigilance, exaggerated startle response, difficulty concentrating, and irritability or angry outbursts.

These three symptom clusters may be found in states of Acute Stress Disorder, and in acute, chronic, and delayed onset PTSD. Acute Stress Disorder arises when victims develop these symptoms and three or more additional symptoms that include a subjective sense of numbing or detachment, a reduction in awareness of surroundings, derealization, depersonalization, or dissociative amnesia. Acute Stress Disorder symptoms need to appear within one month of the traumatic incident, and must be present for a minimum of forty-eight hours but no more than four weeks. After one month, the presence of symptoms from the first three symptom clusters (Table 1) indicates the onset of PTSD. The diagnosis of acute PTSD is made if the symptoms last for less than three months. Chronic PTSD is defined as the presence of these symptoms for three or more months duration, and delayed onset PTSD refers to the onset of these symptoms for the first time at least six months after the onset of the traumatic incident.

Furthermore, while any individual exposed to an extreme stressor may develop Acute Stress Disorder or PTSD, there is an additional emerging body of empirical evidence that suggests some individuals are at greater risk to develop one or both of these conditions. [See reviews by Tomb (1994a) and Yehuda (1998)].

Risk factors that enhance the probability of being traumatized include genetics, limited intelligence, limited formal education, and limited social support. Similarly, prior mental illness, dysfunctional family life, and a previous history of being traumatized all increase the risk for impaired functioning in the face of traumatic events. Nevertheless, these factors may account for relatively little of the explained variation in the causality of PTSD. The greatest risk factor for developing Acute Stress Disorder and/or PTSD may be exposure. There is evidence that there exists a dose-response relationship between one's exposure to critical incidents and the ultimate development of Acute Stress Disorder and PTSD (Everly & Mitchell, 1999).

Everly (1993) argues that to truly understand the nature of psychological trauma and PTSD, one must examine an inherent two-factor constituency consisting of both psychological and biological phenomena.

## The Psychology of Psychological Trauma and PTSD

There are three domains of human functioning that contribute to good physical and mental health: reasonable mastery, caring attachments to others, and a meaningful purpose in life (Flannery, 1994). Reasonable mastery refers to one's ability to shape the environment to meet one's needs. Caring attachments are links to others that provide emotional support, information, companionship, and occasional instrumental support, such as political favors or monetary assistance. A meaningful purpose in life refers to a central event or value that motivates a person to actively participate in the world each day, and which provides direction in life's darker moments. Examples might include one's marriage and children, advancement at work, or volunteer assistance for a special charity. These three sets of skills and resources assist an individual to cope adequately. These three domains are also frequently disrupted by traumatic events, and inadequate coping in these areas is reflected in the symptoms presented in Table 1.

*Faulty Mastery.* When traumatic events occur, by definition they are frequently beyond the victim's control. In addition, certain inadequate coping responses are frequently present as victims attempt to take charge of their lives in the aftermath. Supercontrol is one manifestation of this process. Here the victim in a state of hypervigilance attempts to control every possible aspect of life to prevent a second, unexpected, life-threatening event. At the other extreme of a continuum of control is the victim who gives up completely and learns to become helpless (Seligman, 1975). This victim incorrectly assumes that, because he or she could not control one situation, he or she cannot control any others as well. A third faulty coping response is to self-medicate the immediate psychological distress with drugs or alcohol to calm one's nerves. This strategy of coping does not work over the longer term, and may complicate the victim's life with the addition of an addictive illness. Finally, some victims appear to gain some mastery over the original traumatic event by placing themselves in harm's way again in potentially traumatic situations similar to the original critical incident. This process is known as the repetition compulsion (van der Kolk et al., 1996). Examples might include combat veterans who are continually getting into fights in civilian life or a health care worker that is repeatedly assaulted by a series of different patients.

*Inadequate Caring Attachments to Others.* Traumatic events may also disrupt the victim's network of caring attachments. First, some traumatic events, such as natural disasters, disrupt caring attachments as families and whole communities are impacted and dispersed by the critical incident. Second, some traumatic events are so painful that victims understandably want to withdraw from others and avoid painful reminders of the situation. This is especially true of acts of violence committed by other persons. If the perpetrators of these acts are also responsible for the care of the victim (e.g., incest), a sense of betrayal may further enhance the desire to withdraw. Third, when the victim is in need of outreach from the victim's network of caring attachments, many of these nonvictim attachments withdraw from the victim and engage in victim-blaming. Traumatic events illustrate how tenuous are human links to life itself. Many nonvictims are frightened by the violence and realize how easily they could have become victimized. To restore their sense of mastery, they blame the victim of the random event for causing that event. This provides the nonvictims with the illusion of control over critical incidents. The need for this illusion leads them to withdraw from and blame the victims, and caring attachments are further ruptured.

*Loss of Meaningful Purpose.* Sustaining an important commitment in life is enhanced by a sense of coherence of the world (Antonovsky, 1979). A helpful sense of coherence includes the beliefs that the world is safe and predictable, that it is worthy of our investing energy in it, and that individuals can exercise some reasonable mastery in daily life events. However, as Janoff-Bulman (1992) has documented, traumatic events shatter all of these assumptions. The world does not seem orderly and safe nor worthy of one's investment. Victims are overwhelmed by the forces of nature in natural disasters or are unable to understand the deliberate evil acts freely chosen by twisted human minds in human-perpetrated violence. Traditional purposeful meanings in life seem inadequate and empty, and victims are left without direction.

## **The Biology of Psychological Trauma and PTSD**

While a full discussion of the complex psychoneuro-endocrinology of trauma and PTSD is beyond the scope of this paper, an awareness of the basic physiologic response of victims may prove helpful to EMH personnel in assessing the intervention needs of victims onsite.

Recent reviews (Everly & Lating, 1995; Southwick, Brenner,

Krystal, & Charney, 1994; van der Kolk, 1996; Yehuda, 1998) have established that the physiology of trauma and PTSD is a separate bodily response that is different from states of major depression and the body's general physiological response to routine life stressors.

Adrenaline is released from the adrenal glands and becomes epinephrine in the body. This neurotransmitter mobilizes the body's emergency response system, which includes strengthened heart rate, better respiration, dilation of the pupils for improved vision, and release of sugar into blood for greater energy. A second emergency mobilization process is occurring simultaneously in the brain. Here, adrenaline has been converted into norepinephrine, which rivets the potential victim's attention to the immediate threat. Also released in the brain are chemicals known as endorphins. When endorphins are freely circulating in noncritical events, the person feels calm and relaxed. However, during critical incidents, the endorphins appear to act as analgesics so that the person's attention is not distracted by pain and suffering from efforts to stay alive. Both norepinephrine and the endorphins appear to be involved in the development of intrusive symptoms, and may represent the best brain chemistry for remembering traumatic events and how to respond to them, should they ever be encountered again.

Finally, the presence in the brain of norepinephrine, or other neurotransmitters, such as glutamate, repeatedly or for protracted periods of time may result in changes to the nervous system, especially in the limbic system (Everly & Lating, 1995). The repeated presence of norepinephrine in the limbic system appears to alter the sensitivity of these nerve fibers such that small amounts of norepinephrine at a later, noncritical time period may produce an emergency mobilization response as intense as the response to the original traumatic event. This sensitization is referred to as *kindling*. Since both negative and positive events in life may produce small increments in norepinephrine, victims frequently experience unwanted emotional responses, and tend to constrict their lives. Victims who have kindling from previous traumatic events may experience intense distress in the face of a second traumatic event due to its impact and the unresolved impact of the first critical incident.

## **Untreated Consequences**

In addition to Acute Stress Disorder and the various types of PTSD, untreated victims may develop additional and serious medical and psychological complications in the

aftermath of traumatic events. These complications may evolve from PTSD, be comorbid with PTSD, or exist by themselves. They include generalized anxiety disorder, panic, major depression, dysthymia, alcoholism, somatoform disorders, and personality disorders. If these medical conditions remain untreated, these disorders with their attendant pain and suffering may last until death.

Untreated trauma and PTSD may result in permanent disability, medical and legal expense, increase sick leave, increased industrial accidents, social and community disorganization, lost productivity, and intense psychological distress. The toll in human suffering is enormous and unacceptable.

### Summary

This review of psychological trauma and PTSD demonstrates the need for EMH personnel to prevent or mitigate the maladaptive cognitive and behavioral coping that may result in the aftermath of severe critical incidents

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and to return victims to their preincident level of functioning.

The literature suggests that the general goals in this process should be to reduce symptomatology (Table 1) and foster the restoration of reasonable mastery, of caring attachment networks, and of some renewed meaningful purpose in life (Everly & Mitchell, 1999; Flannery, 1994, 1998; Raphael, 1986; Wollman, 1993). Both psychological trauma and PTSD are complicated medical conditions that manifest themselves in a range of individual differences and suggest the need for multicomponent intervention programs to address this range of individual differences.

Crisis intervention procedures within a CISM paradigm (Everly & Mitchell, 1999) that emphasize early intervention, direct action, the gathering of facts, the expression of difficult emotions, and the mobilization of needed resources appear particularly suited to address the needs of victims of traumatic events (Auerbach & Kilmann, 1997; Raphael, 1986; Robinson & Mitchell, 1995; Sandoval, 1985; Schwartz, 1971; Wollman, 1993). Such CISM interventions can have a meaningful impact in lessening our serious public health problem.

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