Posttraumatic Stress Disorder

Acute Stress in Response to the Terrorist Attacks on September 11, 2001

David Spiegel, MD[1], Lisa D. Butler, PhD[2]

Abstract: This article reviews psychological responses to the terrorist attacks of September 11, 2001. We describe acute stress reactions, including disruption in affect, cognition and social support. We discuss factors that predict the development of later posttraumatic stress disorder (PTSD), along with current Internet-based research on September 11 stress responses. We also discuss the natural tendencies for people to reach out to social, religious and group support, which offer therapeutic opportunities. In addition, components of effective therapeutic interventions are talked about, and we review basic psychopharmacology of acute stress response.

Résumé : Stress aigu en réaction aux attaques terroristes du 11 septembre 2001
Cet article examine les réactions psychologiques aux attaques terroristes du 11 septembre 2001. Nous décrivons les réactions au stress aigu, y compris un dérèglement de l'affect, de la cognition et du soutien social. Nous discutons des facteurs qui prédisent le développement du syndrome de stress post-traumatique (SSPT) de même que des réactions actuelles au stress du 11 septembre, selon des recherches sur Internet. Nous discutons en outre de la tendance naturelle des gens à recourir au soutien social, religieux ou de groupe, qui offre des possibilités thérapeutiques. Enfin, nous discutons des éléments des interventions thérapeutiques efficaces et examinons la psychopharmacologie de base des réactions au stress aigu.

Key Words: terrorism, acute stress disorder, posttraumatic stress disorder, psychotherapy, psychopharmacology

We have all been shaken to our foundations by the terrorist assaults on New York and Washington. The brutal attacks on innocent civilian populations, the immense loss of life and property destruction and the recognition of the depth of others' arrogance and irrational hatred remind us of the fragility of life and the human capacity for evil.

[1]Professor and Associate Chair of Psychiatry and Behavioral Sciences, Stanford University School of Medicine, Stanford, California

[2]Senior Research Scholar, Department of Psychiatry and Behavioral Sciences, Stanford University School of Medicine, Stanford, California

Clearly, the attacks affected everyone deeply, with many suffering intrusive recollections of the events, avoiding event reminders, changing their involvement in and enjoyment of usual activities, and experiencing irritability, sleeplessness and other signs of hyperarousal. Two major surveys have been published indicating the extent of emotional response to the attacks. The first was a telephone survey conducted between September 14 and 16, 2001, in the United States among 560 adults, using random digit dialing (1). Of the survey respondents, 90 per cent reported one or more stress symptoms at least to some degree, and 44 per cent reported substantial impairment. When asked about coping resources, virtually all (98 per cent) reported that they talked with others. A total of 90 per cent cited their religious faith as a source of help. In addition, 60 per cent engaged in group activities, and 36 per cent made donations of one kind or another. Within five days of the attacks, most Americans were symptomatic, at least to some degree, and were engaged in largely social restorative activities.

A more recent survey (2) used random digit dialing to contact 1,008 adults living in Manhattan south of 110th Street, five to eight weeks after the attacks. It found a prevalence rate of 7.5 per cent for PTSD, and 9.7 per cent had symptoms of current depression (within the past 30 days). Degree of trauma exposure was an important factor in that 20 per cent of those living south of Canal Street (near the World Trade Center) had symptoms of posttraumatic stress disorder (PTSD). Poor social support, prior stressors, a history of panic attacks and the loss of a loved one or a job as a result of the attacks were each associated with higher PTSD or depression-symptom prevalence.

We are conducting an Internet survey of risk and resilience factors in response to the terrorist attacks. We launched our Web site on September 28, 2001, and collected questionnaire data from over 7,000 individuals from all 50 states and 26 countries between then and December 4, 2001 (3). Of the respondents, 17 per cent lived in states where the attacks occurred or in states that were proximal. So far, about one-half of this sample has provided us with follow-up data. We are examining factors

related to the risk of subsequent PTSD symptoms, including prior trauma history, poor social support, internal or socially mediated constraints on expression of emotion, and demographic variables. We are also assessing those factors that indicate resiliency; namely, flexibility in cognitive reorientation, preservation of psychological well-being, obtaining meaning out of the experience and post-traumatic growth.

Spectrum of Acute Stress Symptoms

Undoubtedly, the terror attacks profoundly disrupted emotional, cognitive and social equilibrium. They constituted a sudden challenge to emotion regulation, imposing an unwelcome mixture of fear, anxiety, sadness, anger and other feelings. Modulating such emotions is difficult, and most people alternate between feeling flooded with distress and attempting to suppress or avoid it. The emotional preoccupation can interfere with cognitive function, making even simple tasks difficult. For example, there were three minor automobile accidents in the parking lot outside our psychiatry building in California on the morning of September 11. For many Americans, schedules were disrupted: they cancelled trips, they reconsidered plans and they reevaluated priorities. Many people tried to carry on as though life were "normal" as a means of minimizing the impact of the trauma. But real work cannot get done in the days following such an event, and it is wise at such times to put usual routines on hold and postpone major decisions.

The virtually universal impulse to contact loved ones and reach out to victims of the attacks is clearly an adaptive response. It can help individuals normalize their own emotional reactions to the trauma, feel less isolated with their distress and modulate the negative emotions with the experience of warmth and solidarity with others.

While the events of September 11 affected nearly everyone, early reports indicated that a substantial minority suffered sufficiently, to the extent that they qualified for a psychiatric diagnosis. The spectrum of symptomatology includes anxiety-based symptoms, such as intrusive thoughts, nightmares, irritability and restlessness; dissociative symptoms, including numbness, being in a "daze," amnesia, reliving, depersonalization and derealization; and depressive symptoms, such as a sense of foreshortened future and a loss of pleasure. Acute stress disorder was introduced as a category in the DSM-IV to acknowledge the severity of symptomatology that may occur in the immediate aftermath of trauma. It also predicts PTSD development (4–7,9–12). While some symptoms—dissociative numbing, depersonalization and amnesia—may initially be adaptive, helping individuals to survive physical trauma by focusing on escape rather than on the enormity of the disaster or helping them to manage emotional disruption may become maladaptive over time (13,14). It delays necessary cognitive processing and emotional working through of traumatic experiences (15). MacFarlane has shown that dissociative symptoms on the day of a motor vehicle accident do not predict PTSD 6 months later, but dissociation two weeks after the accident does (16).

Many acute and PTSD symptoms are overlooked—especially the "negative" symptoms such as numbing and avoidance, which may be interpreted as normal reactions to abnormal circumstances. Consequently, these symptoms are less likely to receive treatment. Numbing, however, is a strong predictor of later PTSD development (for example, among Israeli combat soldiers and in a recent analysis of the Oklahoma City bombing data) (17–19). Among children, who are more prone to dissociation than are adults, we see similar results (20).

Further, evidence shows that dissociation in the immediate aftermath of trauma is associated with a tendency to endanger oneself (for example, crossing police barricades or engaging in irrelevant activities that do not promote safety during a crisis) (8,21). Among those prone to endangering themselves, intervention could reduce risk behaviour and reduce subsequent retraumatization.

Components of Effective Interventions

If the essence of trauma is helplessness, then we can understand psychotherapeutic interventions as a means of reestablishing control over one's internal state by enhancing control over specific symptoms or problems. The following describes the four domains (emotion, cognitive restructuring, symptom management and social support):

1. *Emotion.* Traumatic memories are associated with strong emotion. Finding the means to ventilate, metabolize, come to terms with and manage strong emotion is essential to good psychotherapeutic support (15,22–24).

2. *Cognitive restructuring*. Many effective therapies help traumatized individuals examine their memories and experiences from a new point of view, thus allowing them to find new meaning in the experience. Patients may, for example, come to recognize their good fortune in surviving the trauma, to acknowledge an action they performed to either protect themselves or others, or to realize that they were not responsible for the traumatic event that befell them (23–25). Effective techniques for helping victims gain this new vantage point range from educational

videotapes for rape victims, prior to their medical examination, to cognitive therapies designed to desensitize rape victims' PTSD symptoms (26,27). Potentially helpful interventions encompass the spectrum, from providing simple information to profound cognitive restructuring.

3. *Symptom management*. Many interventions involving graduated exposure, including imaginal desensitization (26) and hypnosis (28,23), can help patients manage the symptoms of hyperarousal and somatic distress that accompany intrusive recollections of trauma or exposure to reminders of traumatic experiences.

4. *Social support*. The doctor–patient relationship is a crucial therapeutic tool. Many trauma victims feel deeply ashamed of their emotional reactions and thus feel alienated from others. Helping patients develop a sense of acceptance and assisting them with working through traumatic effects on relationships are both important components of therapy.

Considerable controversy exists about the efficacy of critical incident stress debriefing (CISD) (29,30). A Cochrane database review indicated no specific efficacy for it, and a recent review by Foa and colleagues (26,30) found that, in some circumstances, CISD may actually worsen outcome, especially among those with high initial symptom levels. There are two components of many stress-debriefing approaches that have the potential to be toxic. The first is the anticipation of future emotional problems. In the immediate aftermath of trauma, trauma victims do not want or need to hear the prediction of future difficulties. Indeed, such predictions may induce rather than prevent certain emotional reactions. The second component is the brevity of the intervention. Many of these interventions are conducted very quickly, lasting perhaps one hour to ninety minutes and occur only once. They may have the effect of stirring up emotional reactions without providing any means for restructuring the meaning of the emotional experiences and traumatic events, enhancing skill at regulating emotional response, or providing a supportive social environment for managing the emotion.

Psychopharmacology

While there is no definitive pharmacotherapy for acute and PTSD, recently two selective serotonin reuptake inhibitors (SSRIs), paroxetine and sertraline, have been approved for use with these disorders. In fact, depression is a common comorbid condition, which provides further rationale for their use. Benzodiazepines are overused generally and are ineffective. Sedative hypnotics may be used temporarily for acute sleep disruption, but problems with habituation should be considered. The use of beta-adrenergic blockers in the acute aftermath of trauma as a means to prevent PTSD development is being investigated.

Conclusion

The terrorist attacks have changed us all, challenging our assumptions about our safety and security and causing us to reexamine our priorities. Yet, we have learned much from the study of past traumatic stressors, and we continue to learn more about our natural tendency to seek out social support and the need to manage emotions elicited by trauma. The attacks were an assault on our social fabric; therefore, using natural as well as professionally guided social support may be essential for our individual and collective healing.

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