

# Posttraumatic Stress Disorder in Women

## A Refresher Course After the Hurricane

Anita S. Kablinger, MD; Jasjit K. Singh, MD; Leigh T. Liles, MS

*Posttraumatic stress disorder (PTSD) is the most common diagnosis made after a natural disaster, and it goes undiagnosed in the majority of those affected. Prompt identification of PTSD in survivors of natural disasters such as Hurricane Katrina can be invaluable in the patient's prognosis. Several brief screening tools have been developed to aid in the diagnosis of PTSD. Moreover, recognition of the significant comorbidity that is associated with PTSD can help the clinician identify particular patients at risk. Women are twice as likely as men to have a diagnosis of PTSD, even though they have less exposure to traumatic events. Women also react more strongly than men to the same trauma. Once a diagnosis of PTSD has been established, treatment involving pharmacotherapy, psychotherapy, and psychosocial intervention has proved to be of maximum benefit to the patient.*

**H**urricane Katrina was one of the worst US natural disasters in recent times. The magnitude of its aftermath has been astounding. With more than one million Americans left homeless, many have relocated to communities across the country. If past disasters are a gauge for what practitioners will see with this population, one of the most common diagnoses that will be made is posttraumatic stress disorder (PTSD).<sup>1</sup> With the psychological trauma that has been associated with the hurricane and the prospective added struggle to rebuild, which the victims are facing with little social support, the impact of the hurricane will be seen in medical communities nationwide. It is important for the primary care community, who will be on the front lines of this impact, to be able to recognize the trauma that their patients are dealing with and start the necessary treatment.

### DEFINITIONS

A disaster is defined as an event that involves destruction of property, injury, and/or loss of life that affects a

large population. Disasters may occur naturally or be caused by humans. A disaster may include events such as earthquakes, floods, hurricanes, tornadoes, mass transportation accidents, chemical accidents, and terrorist attacks. The phases of a natural disaster include the predisaster conditions of the community, the warning of impending disaster, and the postdisaster period during which survivors and emergency workers go into rescue mode, remediation, and then recovery. The recovery phase of the com-

munity involves both emotional and physical rebuilding and may take years to complete.

PTSD is part of the anxiety group of disorders in the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV)* and involves anxiety or fear, depression, and anger, as well as sleep and cognitive problems. In addition, patients who suffer from PTSD may even hallucinate about their prior trauma, "reliving" the experience. PTSD occurs after an individual has been exposed to a traumatic event that is associated with intense fear or horror. It differs from acute stress disorder in timeline: Acute stress disorder symptoms and onset occur from two days to four weeks after the stressor. PTSD is the long-term version of acute stress disorder and, by definition, may be diagnosed after one month posttrauma. People with acute stress disor-

*Dr. Kablinger is the Director of Residency Training at the Department of Psychiatry at the Louisiana State University Health Sciences Center (LSUHSC) in Shreveport. She is also an Associate Professor in the Departments of Psychiatry and Pharmacology and Therapeutics. Dr. Singh is currently chief resident in the Psychiatry Department at LSUHSC. Ms. Liles will be awarded her MD from LSUHSC in May 2006.*

**PRIMARY POINTS**

- PTSD is common after traumatic, life-threatening events such as natural disasters, accidents, and terrorist attacks. Patients often relive the event in dreams or flashbacks and experience increased arousal. However, it is not uncommon for patients to experience general diminished responsiveness.
- PTSD differs from acute stress reaction in that it can appear months after the trauma occurred.
- Women are twice as likely as men to be diagnosed with PTSD.
- Comorbid conditions, such as depression, increase the risk for PTSD.
- Several screening tools can help diagnose PTSD. Once diagnosed, women should be treated with a combination of pharmacotherapy and psychotherapy.

der often progress to PTSD. The stressor involved in PTSD can be anything from violent crime, abuse (including sexual, physical, and emotional), trauma, war, terrorism, or natural disasters.<sup>2</sup> Women are more vulnerable to the development

**TABLE 1. RISK FACTORS FOR POSTTRAUMATIC STRESS DISORDER**

- History of trauma prior to the present trauma
- History of PTSD
- History of depression
- History of anxiety disorders
- Comorbid axis II disorders (predictive of greater chronicity)
- Family history of anxiety (including parental PTSD)
- Disrupted parental attachments
- Severity of exposure to trauma (more predictive of acute symptoms)
- Destruction of home and possessions
- Displacement from familiar surroundings
- Injury to self or other family members
- Threatened loss of life
- Age between 40 and 60
- Female gender
- Lower socioeconomic status

Adapted from Hollander and Simeon. *Concise Guide to Anxiety Disorders*. 2003.

of PTSD.<sup>3</sup> They have a lower exposure rate to traumatic events in general but have a higher lifetime prevalence rate of developing PTSD. A national comorbidity survey estimates women to have a prevalence rate of 10%, versus a 5% rate in men, making women twice as likely to have a diagnosis of PTSD.<sup>2</sup> There is some evidence that women are more symptomatic in response to trauma than men are, even when the trauma is not as severe.<sup>4</sup>

There are other risk factors besides sex that are associated with PTSD (Table 1).<sup>5</sup> Some of these risk factors pertain more to the current population of Hurricane Katrina victims. Specifically with disasters, the severity of exposure is one of the single most important factors for assessing the risk of adverse outcome.<sup>6</sup> Also, losing one's home and the comfort of familiar surroundings can have a major impact on the risk for PTSD and the severity of symptoms. Studies show that the risk of morbidity is closely linked to the destruction of the home and possessions of a victim, as seen in recent hurricanes.<sup>7</sup> Injury to self or another family member, threatened loss of life, separation from family (especially among children), extensive loss of property, relocation, displacement, and panic or other similar emotions are also major risk factors for the development of PTSD. Other issues that can increase disease risk are lower socioeconomic status, age between 40 and 60, poor predisaster functioning, and limited psychosocial resources.<sup>8</sup> Pre-existing physical handicaps, psychopathology, or family dysfunction can also be risk factors for the

development of PTSD. Finally, a history of exposure to trauma (especially interpersonal violence) is a strong predictor of PTSD, perhaps by sensitization to the detrimental effects of another stressor.<sup>8-10</sup>

### DIAGNOSIS

PTSD is listed as an anxiety disorder in *DSM-IV*; anxiety disorders, in general, are the largest represented category of mental disorders. Because most patients with these disorders are first seen in primary care, it is of paramount importance for clinicians to recognize such disorders.<sup>11</sup> Unfortunately, studies have shown that less than one third of patients with anxiety disorders are receiving adequate diagnosis or quality care from their primary care physicians.<sup>12</sup> Further studies show that the duration of PTSD symptoms was shorter in people who received treatment (36 months) versus people who did not receive treatment (64 months).<sup>2</sup> The question then arises as to how PTSD can be diagnosed in a timely manner.

In order for the diagnosis of PTSD to be made, several criteria must be met:

- PTSD occurs after exposure to a trauma in which a person experienced, witnessed, or was confronted with an event that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others. The person must also respond to the event with intense feelings of fear, helplessness, or horror.
- The patient will repeatedly relive the event by recurrent, intense recollection, dreams, or flashbacks. She may also experience psychological distress or physical reactions when exposed to a reminder of the traumatic event.
- The patient will constantly avoid situations that may trigger memories of the event and experience diminished general responsiveness. This can include avoidance of thoughts, feelings, and people associated with the trauma. Patients may be unable to recall the event or parts of the event, have decreased interest in activities, feel estranged from others, be unable to experience a wide range of emotions, and have a sense of a foreshortened future.
- The patient may experience increased arousal, including difficulty falling or staying asleep, irritability, problems concentrating, hypervigilance, or an increase in startle response.
- These symptoms must be present for more than one month.
- The symptoms cause significant distress or impairment in social, occupational, or other areas of functioning.<sup>13</sup> The majority of patients experience symptoms of PTSD within the first three months, although it may take months to years after the trauma for the symptoms to appear.<sup>13</sup>
- There is genetic susceptibility for anxiety disorders, but not for PTSD. However, if the entire family endured a trauma, as is the case with many in Hurricane Katrina, then all family members should be screened for PTSD. A mother's symptoms may inhibit her ability to help her children recover.

TABLE 2. COMORBIDITY BETWEEN PTSD AND OTHER DISORDERS

Affective disorders	Women	Men
Major depressive disorder	48.5%	47.9%
Dysthymia	23.3%	21.4%
Mania	5.7%	11.7%
<b>Anxiety disorders</b>		
Generalized anxiety disorder	15.0%	16.8%
Panic disorder	12.6%	7.3%
Simple phobia	29.0%	31.4%
Social phobia	28.4%	27.6%
Agoraphobia	22.4%	16.1%
<b>Substance use disorders</b>		
Alcohol abuse/dependence	27.9%	51.9%
Drug abuse/dependence	26.9%	34.5%
<b>Other disorder</b>		
Conduct disorder	15.4%	43.3%
<b>Any disorder</b>		
No other diagnosis	21.0%	11.7%
1 diagnosis	17.2%	14.9%
2 diagnoses	18.2%	14.4%
3 diagnoses	43.6%	59.0%

Adapted from Kessler et al. *Arch Gen Psychiatry*. 1995.<sup>2</sup>

## COMORBIDITY

An important consideration in the recognition of PTSD is the high rate of comorbidity associated with the disorder (Table 2). Men and women with a lifetime history of PTSD had an 88.3% and 79% chance, respectively, of having at least one other psychiatric disorder.<sup>2</sup> A recent study of female juvenile offenders diagnosed with PTSD showed increased rates of comorbid depression, substance and alcohol abuse or dependence, other anxiety disorders, psychoses, and eating disorders. In addition, 73% of the comorbid diagnoses in this study appeared at the same time as or after the onset of PTSD.<sup>14</sup> There is also evidence linking irritable bowel syndrome (IBS)—an illness that disproportionately affects women—to PTSD.<sup>15</sup> Irwin et al evaluated 50 consecutive patients with a diagnosis of IBS for trauma history and/or history of psychiatric disorders. Thirty-six percent of the patients were found to have a diagnosis of PTSD, and the average age of onset of IBS was nine years after the mean age of onset of PTSD. Of the patients with IBS/PTSD, 44% also had comorbid major depression.<sup>15</sup> Another study showed that patients with chronic PTSD had a significant increase in somatoform disorders and other anxiety disorders as opposed to patients with PTSD who were in remission.<sup>16</sup> Patients also showed an increase in suicidal behavior when PTSD was comorbid with major depressive disorder. Not only were suicidal acts more prevalent when PTSD was comorbid with clinical depression, but the suicide attempts occurred at an earlier age than in patients without a preexisting diagnosis of PTSD.<sup>17</sup> In light of the significant comorbidity associated with PTSD, it is important for clinicians to explore the possibility of PTSD in patients with complaints such as those mentioned above that cannot be attributed to other pathology.

## SCREENING

Diagnosing PTSD may be difficult, considering that some patients may not want to recall traumatic events or be willing to

share the experience with a clinician. Women who are depressed are more likely to seek help as compared to their depressed male counterparts and thus may be more willing to discuss the trauma. A brief screening scale may be helpful in establishing a diagnosis. The Short Screening Scale for *DSM-IV* Posttraumatic Stress Disorder is a shortened version of the National Institute of Mental Health Diagnostic Interview Schedule and the WHO Composite International Diagnostic Interview. It uses a seven-symptom scale to measure a lifetime history of PTSD in people exposed to a traumatic event according to the *DSM-IV*. A score of 4 or

TABLE 3. COMMON QUESTIONS TO ASK WHEN INTERVIEWING A PATIENT WITH SUSPECTED PTSD

- Have you witnessed or had to deal with an extremely traumatic event that included actual or threatened death or serious injury to you or someone else? (Examples include serious accidents, sexual or physical assault, being held-hostage, terrorist attack, fire, discovering a body, sudden death of someone close to you, war, or natural disaster.)
- Did you respond with intense fear, helplessness or horror?
- Have you recently had intrusive and distressing recollections of the event?
- Have you had distressing dreams of the trauma or felt as though the trauma were reoccurring ("flashbacks")?
- Have you experienced psychological or physiological distress at exposure to cues that symbolize the trauma?
- Have you avoided thinking about or talking about the event?
- Have you avoided activities, places, or people that arouse recollections of the trauma?
- Do you have trouble recalling important parts of the trauma?
- Do you have diminished interest in activities?
- Have you felt detached from others?
- Have you noticed that your feelings are numbed?
- Have you felt like your life will be shortened or that you will die sooner than other people?
- Have you had any difficulty sleeping?
- Have you been especially irritable or had any outbursts of anger?
- Have you had any difficulty concentrating?
- Have you been nervous or constantly on guard?
- Have you noticed that you are more easily startled?

Adapted from Breslau et al. *Am J Psychiatry*. 1999.<sup>18</sup>

Adapted from Sheehan et al. Mini International Neuropsychiatric Interview. 2003.<sup>20</sup>

more on the seven-symptom scale has 80% sensitivity and 97% specificity in diagnosing *DSM-IV* PTSD.<sup>18</sup> Another concise screening tool is the Startle, Physiological arousal, Anger, and Numbness (SPAN) scale, which is a four-item version of the Davidson Trauma Scale that is also sensitive to the effects of treatment. It is measured by the interviewer and is not self-rated like the Short Screening Scale for *DSM-IV*. The SPAN measures symptom severity on a 5-point scale as well as current PTSD symptomatology. It is unlike the Short Screening Scale for *DSM-IV*, which measures lifetime prevalence of the disorder. SPAN has a sensitivity of 88% and a specificity of 84%.<sup>19</sup> The Mini International Neuropsychiatric Interview (M.I.N.I.) is a short interview designed to help in diagnosing the major axis I psychiatric disorders. These include PTSD, major depressive disorder, and panic disorder, among others. The main criteria from each disorder are presented and rated by a yes or no response. The M.I.N.I. is designed to be administered in approximately 10 minutes with high validation and reliability scores.<sup>20</sup> A brief list of questions for screening patients with suspected PTSD is provided in Table 3.<sup>18,20</sup>

## TREATMENT

PTSD is a complex condition having both psychological and physiologic symptoms. Despite its complexity, civilian PTSD often has a good prognosis, especially with early poststressor intervention.<sup>21</sup> To be successful, treatment must involve psychopharmacotherapy, psychological therapies, and psychosocial interventions.

**Pharmacotherapies:** Antidepressants, specifically the SSRIs, are the mainstream of pharmacological treatment for PTSD.<sup>22</sup> Fluoxetine, parox-

TABLE 4. PHARMACOTHERAPY FOR PTSD AND SUGGESTED DOSAGES\*

Medication	Daily Dosage Range
<b>SSRIs</b>	
Sertraline	50 – 200 mg
Paroxetine	10 – 40 mg
Fluoxetine	20 – 80 mg
Escitalopram	10 – 20 mg
Fluvoxamine	100 – 300 mg
<b>Tricyclic antidepressants<sup>†</sup></b>	
Amitriptyline	50 – 300 mg
Imipramine	75 – 300 mg
Desipramine	100 – 300 mg
Nortriptyline	50 – 150 mg
<b>Monoamine oxidase inhibitors</b>	
Phenelzine	45 – 75 mg
Tranlycypromine	30 – 60 mg
<b>Other antidepressants</b>	
Trazodone	25 – 500 mg
Mirtazapine	15 – 45 mg
Venlafaxine	75 – 300 mg
<b>Mood stabilizers</b>	
Valproic acid	500 – 2,000 mg
Carbamazepine	400 – 1,200 mg
Lamotrigine	25 – 500 mg
Topiramate	12.5 – 500 mg
<b>Atypical antipsychotics</b>	
Olanzapine	5 – 20 mg
Quetiapine	25 – 700 mg
Risperidone	0.5 – 6 mg
Ziprasidone	40 – 160 mg
Aripiprazole	5 – 20 mg
<b>Adrenergic inhibitors</b>	
<b><math>\alpha_2</math>-Agonists</b>	
Clonidine	0.2 – 0.6 mg
Guanfacine	1 – 3 mg
<b><math>\alpha_1</math>-Antagonists</b>	
Prazosin	2 – 20 mg

\* Start with the lowest dosage and slowly increase the dosage as needed. Geriatric patients always require a lower starting dose.

† Monitoring of blood levels is suggested for all tricyclic antidepressants to ensure maximum efficacy and to limit side effects due to possible drug interactions.

etine, and sertraline are currently FDA approved for the treatment of PTSD. Double-blind controlled trials also show the utility of monoamine oxidase inhibitors, tricyclic antidepressants, and anticonvulsants in the treatment of PTSD (Table 4). Targeting isolated symptoms is also common, given that the SSRI may not fully alleviate all symptoms. Thus, adrenergic agents, lithium, novel antidepressants such as venlafaxine, and antipsychotic medications have all been successful in some trials.<sup>23-37</sup> Given the increased risk of drug abuse or dependence and the limited benefits attributed to benzodiazepines, this group of

*Despite its complexity, civilian PTSD often has a good prognosis, especially with early poststressor intervention. To be successful, treatment must involve psychopharmacotherapy, psychological therapies, and psychosocial interventions.*

drugs is not a first-line indication for PTSD.

Full remission from symptoms may be rare but can occur if adequate doses of medication are used for at least eight to 12 weeks' duration. Once remission or improvement is noted, medications should continue for six to 12 months as in major depressive disorder, to prevent relapse. Medications may be continued for longer periods based on the severity of preexisting illness, current illness, family history, and patient preference. That is why it is so important to use a broad biopsychosocial plan in the approach to patients with PTSD.

*Psychotherapy* is an integral part of treatment for PTSD and leads to a significant initial improvement in patients (Table 5).<sup>38</sup> There are no data available suggesting that specific types of therapy are better in women, but combined medications and therapy are the optimal treatment approach. A meta-analysis found that more than half of the patients who underwent various forms of cognitive behavioral therapy or eye movement desensitization and reprocessing (EMDR) improved. EMDR is a form of therapy that involves visualizing images about the trauma while inducing rapid eye movements.<sup>39</sup> Forms of behavioral therapy include exposure therapy. Cognitive therapy focuses on the restructuring of thoughts and generalizations that contribute to anxiety and depression. Other types of therapy include supportive therapy and relaxation training.

*Psychological debriefing (PD)* involves encouraging affected persons to seek help after they have experienced a crisis and preparing these individuals for long-term recovery. The most common form of PD is a Critical Incident Stress Debriefing series that originated in the military and stems from the crisis intervention tradition.<sup>40</sup> This intense method of intervention, consisting of recalling the event while paying attention to specific details and feelings, has been criticized because it paradoxically may actually *increase* the severity and duration of symptoms.<sup>41</sup>

TABLE 5. COMMON TYPES OF PSYCHOTHERAPY USED IN PTSD

Type	Technique	Goal
Cognitive Behavioral Therapy	Exposure, desensitization, cognitive restructuring, stress inoculation, relaxation	Reduce PTSD symptoms (anxiety, flashbacks); recall trauma without debilitating symptoms
Eye Movement Desensitization and Reprocessing (EMDR)	Uses eye movements to alter attention and applies cognitive techniques	Same as above
Group Therapy	Involves people with similar trauma history in a discussion to help with symptom relief	Relieve symptoms; provide support
Crisis Intervention	Psychoeducation to victims and support system	Reduce severity of symptoms and provide victims with support system

TABLE 6. WEB SITES ABOUT COPING WITH NATURAL DISASTERS OR PTSD

American Red Cross	<a href="http://www.redcross.org/services/disaster">www.redcross.org/services/disaster</a>
Anxiety Disorders Association of America (ADAA)	<a href="http://www.adaa.org">www.adaa.org</a>
Center for the Study of Traumatic Stress Disaster/Terrorism Care Resources	<a href="http://www.centerforthestudyoftraumaticstress.org">www.centerforthestudyoftraumaticstress.org</a>
Centers for Disease Control and Prevention/ Disaster Mental Health Resources	<a href="http://www.bt.cdc.gov/mentalhealth">www.bt.cdc.gov/mentalhealth</a>
National Center for Post-Traumatic Stress Disorder (NCPTSD)	<a href="http://www.ncptsd.org">www.ncptsd.org</a>
National Institute of Mental Health (NIMH)	<a href="http://www.nimh.nih.gov">www.nimh.nih.gov</a>
Posttraumatic Stress Disorder (PTSD) Alliance	<a href="http://www.ptsdalliance.org">www.ptsdalliance.org</a>
Substance Abuse and Mental Health Services Administration (SAMHSA)	<a href="http://www.samhsa.gov">www.samhsa.gov</a>

*Early intervention* is now an expanding concept. This suggests that those people at higher risk for developing PTSD can undergo therapeutic sessions before the onset of the condition in order to decrease the chances of sustained difficulties posttrauma.

Although there is little research on cultural, religious, or ethnic considerations in PTSD, it seems logical to discuss patients' involvement with their particular ethnic and/or spiritual groups, if these were a strong source for coping for the patients prior to the trauma. For additional information on this important topic see Table 6 and Web site data.

## CONCLUSION

PTSD may develop from many types of horrifying events, and the treatment must involve a holistic focus. Women are especially vulnerable in this type of situation, considering that they are often the primary support system for their families, even though they, too, suffer from the traumatic event. Women may recognize symptoms of PTSD in their children and seek treatment for them, while ignoring symptoms of their own. Women are at a higher risk of developing PTSD, due to the higher lifetime prevalence and severity of symptoms in their population. When making a diagnosis, it is essential that physicians recognize the high

incidence of PTSD in women.

Despite major advances in the field of PTSD, there is much more to be discovered in the area pertaining to the predisposing factors and effectiveness of treatment in females. The varying hormonal cascade could influence the responsiveness to pharmacotherapy.<sup>3</sup> Research in PTSD is expanding; a recent study by Nemeroff et al focused on new information concerning sex differences in PTSD, risk and resilience, the impact of trauma on early life, im-

aging findings including neural circuits and memory, and cognitive behavioral approaches.<sup>42</sup>

The impact of PTSD, of course, is seen not only in the initial period of a disaster but also in years to come. In past disasters, as seen in Hurricane Hugo, the rate of response and support services was essential. The less support the victims received, the more psychological impact it had on survivors.<sup>1</sup> Where the victims relocated and how many services they received will have a major part in whether they develop PTSD. It is essential to recognize the symptoms, screen properly, and help the patient start the road to recovery with treatment. Primary care clinicians could be seeing many cases such as these for years to come. The damage is still unknown, but with proper therapy, there is hope for recovery in these patients. ♀

## REFERENCES

1. Norris FH. Range, magnitude, and duration of the effects of disasters on mental health: review update 2005. Research Education: Disaster Mental Health. Dartmouth College NCPTSD. [www.redmh.org](http://www.redmh.org).
2. Kessler RC, Sonnega A, Bromet E, et al. Posttraumatic stress disorder in the National Comorbidity Survey. *Arch Gen Psychiatry*. 1995;52:1048-1060.
3. Seedat S, Stein DJ, Carey PD. Post-traumatic stress disorder in women: epidemiological and treatment issues. *CNS Drugs*. 2005;19:411-427.
4. Norris FH, Perilla JL, Ibanez GE, Murphy AD. Sex differences in symptoms of posttraumatic stress: does culture play a role? *J Trauma Stress*. 2001;14:7-28.

5. Hollander E, Simeon D. *Concise Guide to Anxiety Disorders*. Washington, DC: American Psychiatric Publishing; 2003:12.
6. Norris FH. Psychosocial consequences of major hurricanes and floods: range, duration, and magnitude of effects and risk factors for adverse outcomes. *National Center for PTSD*. www.ncptsd.va.gov/facts/disasters. Accessed December 7, 2005.
7. Sharan P, Chaudhary G, Kavathekar SA, Saxena S. Preliminary report of psychiatric disorders in survivors of a severe earthquake. *Am J Psychiatry*. 1996;153:556-558.
8. King DW, King LA, Foy DW, et al. Posttraumatic stress disorder in a national sample of female and male Vietnam veterans: risk factors, war-zone stressors, and resilience-recovery variables. *J Abnorm Psychol*. 1999;108:164-170.
9. Breslau N, Kessler RC, Chilcoat HD, et al. Trauma and posttraumatic stress disorder in the community: the 1996 Detroit Area Survey of Trauma. *Arch Gen Psychiatry*. 1998;55:626-632.
10. Dougall AL, Herberman HB, Delahanty DL, et al. Similarity of prior trauma exposure as a determinant of chronic stress responding to an airline disaster. *J Consult Clin Psychol*. 2000;68:290-295.
11. Young AS, Klap R, Sherbourne CD, Wells KB. The quality of care for depressive and anxiety disorders in the United States. *Arch Gen Psychiatry*. 2001;58:55-61.
12. Stein MB, Sherbourne CD, Craske MG, et al. Quality of care for primary care patients with anxiety disorders. *Am J Psychiatry*. 2004;161:2230-2237.
13. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition*. Washington, DC: American Psychiatric Association; 1994.
14. Dixon A, Howie P, Starling J. Trauma exposure, posttraumatic stress, and psychiatric comorbidity in female juvenile offenders. *J Am Acad Child Adolesc Psychiatry*. 2005;44:798-806.
15. Irwin C, Falesetti SA, Lydiard RB, et al. Comorbidity of posttraumatic stress disorder and irritable bowel syndrome. *J Clin Psychiatry*. 1996;57:576-578.
16. Perkonig A, Pfister H, Stein MB, et al. Longitudinal course of posttraumatic stress disorder and posttraumatic stress disorder symptoms in a community sample of adolescents and young adults. *Am J Psychiatry*. 2005;162:1320-1327.
17. Oquendo M, Brent DA, Birmaher B, et al. Posttraumatic stress disorder comorbid with major depression: factors mediating the association with suicidal behavior. *Am J Psychiatry*. 2005;162:560-566.
18. Breslau N, Peterson EL, Kessler RC, Schultz LR. Short screening scale for DSM-IV posttraumatic stress disorder. *Am J Psychiatry*. 1999;156:908-911.
19. Meltzer-Brody S, Churchill E, Davidson JR. Derivation of the SPAN, a brief diagnostic screening test for post-traumatic stress disorder. *Psychiatry Res*. 1999;88:63-70.
20. Sheehan D, Janavs J, Baker R, et al. MINI International Neuropsychiatric Interview. M.I.N.I. 5.0.0. (November 1, 2003).
21. Zohar J, Amital D, Miodownik C, et al. Double-blind placebo-controlled pilot study of sertraline in military veterans with posttraumatic stress disorder. *J Clin Psychopharmacol*. 2002;22:190-195.
22. Cooper J, Carty J, Creamer M. Pharmacotherapy for posttraumatic stress disorder: empirical review and clinical recommendations. *Aust NZ J Psychiatry*. 2005;39:674-682.
23. Brady K, Pearlstein T, Asnis GM, et al. Efficacy and safety of sertraline treatment of posttraumatic stress disorder: a randomized controlled trial. *JAMA*. 2000;283:1837-1844.
24. Davidson JR, Rothbaum BO, van der Kolk BA, et al. Multicenter, double-blind comparison of sertraline and placebo in the treatment of posttraumatic stress disorder. *Arch Gen Psychiatry*. 2001;58:485-492.
25. Zohar J, Amital D, Miodownik C, et al. Double-blind placebo-controlled pilot study of sertraline in military veterans with posttraumatic stress disorder. *J Clin Psychopharmacol*. 2002;22:190-195.
26. Marshall RD, Beebe KL, Oldham M, et al. Efficacy and safety of paroxetine treatment for chronic PTSD: a fixed-dose, placebo-controlled study. *Am J Psychiatry*. 2001;158:1982-1988.
27. Tucker P, Zaninelli R, Yehuda R, et al. Paroxetine in the treatment of chronic posttraumatic stress disorder: results of a placebo-controlled, flexible-dosage trial. *J Clin Psychiatry*. 2001;62:860-868.
28. Ruggiero L, Pitts CD, Dillingham K, et al. A flexible-dose study of paroxetine in the treatment of PTSD [poster]. 154th Annual Meeting of the American Psychiatric Association; May 5-10, 2001; New Orleans, La.
29. Stein DJ, Davidson J, Seedat S, et al. Paroxetine in the treatment of post-traumatic stress disorder: pooled analysis of placebo-controlled studies. *Expert Opin Pharmacother*. 2003;4:1829-1838.
30. Martenyi F, Brown EB, Zhang H, et al. Fluoxetine versus placebo in post-traumatic stress disorder. *J Clin Psychiatry*. 2002;63:199-206.
31. Connor KM, Sutherland SM, Tupler LA, et al. Fluoxetine in post-traumatic stress disorder: randomized, double-blind study. *Br J Psychiatry*. 1999;175:17-22.
32. Davidson J, Kudler H, Smith R, et al. Treatment of posttraumatic stress disorder with amitriptyline and placebo. *Arch Gen Psychiatry*. 1990;47:259-266.
33. Davidson JR, Weisler RH, Butterfield MI, et al. Mirtazapine vs placebo in posttraumatic stress disorder: a pilot trial. *Biol Psychiatry*. 2003;53:188-191.
34. Hertzberg MA, Butterfield MI, Feldman ME, et al. A preliminary study of lamotrigine for the treatment of posttraumatic stress disorder. *Biol Psychiatry*. 1999;45:1226-1229.
35. Braun P, Greenberg D, Dasberg H, et al. Core symptoms of posttraumatic stress disorder unimproved by alprazolam treatment. *J Clin Psychiatry*. 1990;51:236-238.
36. Kosten TR, Frank JB, Dan E, et al. Pharmacotherapy for posttraumatic stress disorder using phenelzine or imipramine. *J Nerv Ment Dis*. 1991;179:366-370.
37. Stein MB, Kline NA, Matloff JL. Adjunctive olanzapine for SSRI-resistant combat-related PTSD: a double-blind, placebo-controlled study. *Am J Psychiatry*. 2002;159:1777-1779.
38. Bradley R, Greene J, Russ E, et al. A multidimensional meta-analysis of psychotherapy for PTSD. *Am J Psychiatry*. 2005;162:214-227.
39. Foa EB. Psychosocial treatment of posttraumatic stress disorder. *J Clin Psychiatry*. 2000;61(suppl 5):43-48.
40. Mitchell JT, Everly GS Jr. The scientific evidence for critical incident stress management. *JEMS*. 1997;22:86-93.
41. Bisson JI, Jenkins PL, Alexander J, Bannister C. Randomized controlled trial of psychological debriefing for victims of acute burn trauma. *Br J Psychiatry*. 1997;171:78-81.
42. Nemeroff CB, Bremner JD, Foa EB, et al. Posttraumatic stress disorder: a state-of-the-science review. *J Psychiatr Res*. 2005; Oct 17; [Epub ahead of print].