
Preface

Post-traumatic stress disorder or PTSD is a psychiatric condition that can occur in anyone who has experienced a life-threatening or violent event. The trauma can be due to war, terrorism, torture, natural disasters, accidents, violence, or rape. PTSD was once associated exclusively with military service and characterized by the terms “shell shock” and “battle fatigue.” However, now it is recognized that PTSD can occur in any traumatic situation and can afflict children as well as adults. Studies across cultures, languages, and races suggest that PTSD is a universal response to exposure to traumatic events.

In the U.S. population, the prevalence rate of PTSD is approximately 8%, with the rate for women more than twice that for men (1). In the aftermath of Hurricane Katrina, the prevalence of PTSD in the New Orleans metro area (hardest hit by the hurricane) was 30.3% compared to 12.5% in the remainder of the hurricane area (2). Among U.S. military personnel, a study (3) found that during the 1991 Gulf War symptoms of PTSD were evident in 6.2% of the deployed troops versus 1.1% of the nondeployed peers. Importantly, 10 years later the rate of PTSD among deployed veterans (Operation Enduring Freedom-Operation Iraqi Freedom; OEF-OIF) was three times higher than in the nondeployed peers. In the Iraq War, a U.S. Army study found that 12.9% of the soldiers suffered from PTSD (4). Not all individuals exposed to a life-threatening event develop PTSD, indicating significant individual differences in coping with the stressful event. However, prior history of trauma may increase the risk for PTSD (5), suggesting an additive effect of stress.

The brain’s response to trauma and stress, also termed the “fight-or-flight” response, was first described by Walter Cannon in 1915 (6). Its purpose is to mobilize the body to action and protect us from danger. The cascade of chemicals unleashed during a fight-or-flight response acts on specific brain regions, in particular the hippocampus and amygdala, which are parts of the limbic system related to emotion, memory, and cognition. The amygdala is especially vulnerable because it is here that a fearful association of the event is processed and stored.

Individuals with PTSD have memories of the event that they relive again and again (i.e., flashbacks, nightmares, preoccupation with thoughts or images of the events of war); they avoid people and places associated with the trauma, becoming distressed at cues or reminders of the experience (e.g., the anniversary of the event); and they are hyperaroused (difficulty sleeping, trouble concentrating, hypervigilant).

In the past few years, there has been a tremendous growth in our understanding of PTSD. Relevant brain areas have been identified; there are animal models to study the disease; there are sound evaluation methods; and large-scale clinical trials are under way to examine the effectiveness of psychological and pharmacological treatments. In this text, we have invited experts to review the current state of knowledge regarding PTSD, including treatment strategies, both pharmacological and psychological. The collection of reviews in this book covers epidemiological findings, neurobiology and neurophysiology, brain imaging, and treatment strategies.

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