# War and Anxiety Disorders

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Psychologic reactions are common after trauma. Much attention has been devoted to posttraumatic stress disorder after harrowing events, including natural disasters such as earthquakes and floods, assault of individuals, episodes of mass violence such as riots and terrorist attacks, and combat.[1–5] The prevalence of stress disorders varies among these studies, in part as a result of differences in sampling schemes, type and timing of measurements, and types of exposures (eg, natural or manmade, extent of damage).[6]

In this issue of EPIDEMIOLOGY, Donald Black and his colleagues[7] report on anxiety among Gulf War veterans. Their article provides insights into the psychologic impact of trauma—both in general and as it relates to combat in particular. Importantly, this report assesses not only veterans who experienced combat, but also those who were deployed and not in combat, as well as personnel who were not deployed. It is notable that an increase in psychologic symptoms was seen in both deployed groups, whether or not they directly experienced combat.

Previous studies have focused mostly on direct victims of violence, and, in the case of mass disasters, the victims' families, first-responders, and their families. There are fewer data on responses among the general population or among persons considered "indirectly exposed." In recent work on New York City residents after the September 11 attacks, posttraumatic stress disorder was most common among those directly exposed to the collapse of the World Trade Centers, but rates were elevated also among most of people not directly exposed. In fact, the latter group produced nearly half of the cases of probable posttraumatic stress disorder among city residents.[4] Similarly, the present study of Gulf War veterans suggests that psychologic trauma can extend to less-exposed populations.

Although much of the literature on trauma has dealt with posttraumatic stress disorder, Black and his colleagues found that panic attacks and generalized anxiety disorders were also related to wartime exposure. Other documented consequences of traumatic events include depression and substance abuse, both of which have been closely tied to posttraumatic stress disorder.[8,9] These findings emphasize the need to cast a wide net when searching for psychologic outcomes after traumatic events.

The increased prevalence of posttraumatic stress disorder, anxiety, and panic attacks in this military population even 4 years after the Gulf War is a reminder that a substantial psychologic burden could linger years after the event. In prospective studies of trauma (patients hospitalized as a result of a traumatic event, female rape victims, and persons affected by motor vehicle accidents), more than half of cases of posttraumatic stress disorder have been found to remit in the first 3 to 6 months after onset.[1,8,10] Similarly, the National Comorbidity Survey showed a steep decline in posttraumatic stress symptoms in

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the first year after a traumatic event and remission in approximately two thirds of cases.[11] Longer-term studies (particularly among Vietnam veterans) suggest that one third of cases of posttraumatic stress disorder persist chronically.[5,12] Although data on other outcomes after trauma are less clear, the data presented in this study suggest that a range of psychologic reactions can persist for many years after the traumatic experience.

Although posttraumatic stress disorder, panic attack, and generalized anxiety disorder are reported in this study as distinct outcomes, the authors acknowledge that their assessment 4 years after the war could mask a more nuanced picture. The type of disorder could well depend on the type and intensity of exposure (for example, the combat-experienced troops being more likely to have the more complicated diagnosis of posttraumatic stress disorder). The evidence presented here suggests that studies need to include a diverse range of possible psychologic outcomes to capture the full effects of traumatic experience.

> *"Psychological reactions can persist for many years after the traumatic experience."*

The relationships among various psychologic outcomes after trauma are complicated in other ways. For example, the authors observed that panic might be considered a consequence of trauma. This finding is compelling when considered in the light of observations that panic attack around the time of the event could be strongly associated with the later onset of posttraumatic stress disorder[4] as well as subsequent panic disorder.[13] The authors noted that anxiety, panic, and posttraumatic stress disorder were associated with exposure to media, substance use, somatic complaints, and other psychopathology. These are similar to the correlates of posttraumatic stress disorder among New York City residents after the September 11 attacks[9,14] and other disasters. Taken together, these results suggest that certain early factors could trigger symptoms, which in turn could suggest specific interventions for prevention, screening, and treatment.

Much of what we know about response to psychologic trauma has been inferred from a mosaic of literature, with data collected at varying times after diverse types of trauma. This report on the Gulf War veterans adds an important piece to the picture. Future research should seize on opportunities to begin collection of prospective data from near the time of exposure (and ideally before the exposure) and continue at regular intervals thereafter. Such data will be critical in extending our understanding of the natural history of stress reactions, their prognostic indicators, and the ways in which we might intervene to reduce the effects of trauma.

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DAVID VLAHOV and SANDRO GALEA are at the Center for Urban Epidemiologic Studies, New York Academy of Medicine. Under the sponsorship of the Commissioner of Health of New York City, they responded to the attacks of September 11 with an epidemiologic assessment of mental health among New York City residents, completed in 60 days. This effort has evolved into a cohort study to identify prognostic factors associated with mental health response to massive disasters.

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