



# Army Medicine Peer Reviewed Publications

## August 2012

August 2012-- Journal coverage for August focused on post traumatic stress disorder prevention and treatment, suicide prevention and upcoming medical technologies. This is on par with traditional media, although traumatic brain injury is not discussed exclusively in any of the journals, and is a common topic in traditional media. Because of record-breaking suicide numbers released in August, many of the PTSD articles incorporated discussion of suicide causes and prevention. PTSD was the most discussed topic in medical journals for August with three outlets covering research on the topic. The Journal of American Medical Association had the most coverage of military medical issues with two very robust articles covering PTSD treatment and suicide.

Upcoming journal coverage will likely cover suicide prevention and awareness as the numbers for July's record-breaking suicide numbers were released August 15. This is after many journals had already been published for August, not providing enough time for in depth coverage by medical journals for the August timeframe.

## Medical journal coverage

### *PTSD*

*American Medical News* focused on post traumatic stress disorder and its correlation to paranoia with the public following shootings like the Aurora, Colo. incident at a neighborhood movie theater. "Anxiety, depression and panic attacks can arise in the public after a large-scale and widely publicized random act of violence, mental health professionals say. Such violence can lead to "a sense of loss of community, that everyone is out for themselves and that no one is safe," said Dr. Karasu, psychiatrist-in-chief at Montefiore Medical Center in New York. "People feel helpless and can become totally irrational." (*American Medical News*, 6 August). The article goes on to state that feelings of anxiety or depression after a public tragedy are usually temporary, but may have a more significant and longer-lasting effect on patients with a history of mental illness. The author stresses the importance of public health professionals being aware of these types of incidents and keeping them in mind when diagnosing patients.

*The Journal of American Medical Association* discussed two treatments of PTSD are discussed. It is argued in the article that PTSD is often comorbid with substance abuse, and it can be a challenge treating someone with both of these issues. One of the treatments for PTSD, prolonged exposure, involves sitting down with a patient and walking through their memories that have caused them pain. This treatment is used with substance abuse treatment, which can include detox, rehab and pharmacotherapy. This treatment is found to be

as effective as traditional therapy, working better in some variable, but not significantly more effective. One fault with this study was that the treatment took too long which resulted in many participants dropping out of the analysis.

The other therapy discussed was couples therapy, which showed reductions in PTSD symptoms and improved the relationships of the participants. Overall the study was successful, but there was a need to diversify the participants. The issue with this study was that the participants were hand-picked, predominantly white and employed. The article also did not specify whether participants were paid for their time, which could have a significant impact on the study's success.

*Molecular Psychiatry Journal* focused more on the cause of PTSD, describing a genetic link to the disorder. This study used a diverse group of participants and their intimate partners for the analysis. This article stated that this was an important step in the process to identify the genetic underpinning of PTSD.

### **Research**

*Forbes* highlighted a new technology that has the ability track every single human-subject research project in one database. The technology is called PROMIS (Protections in Research, Oversight Management System), and is the first technology of its kind. Originally developed by the U.S. Navy's Office of Research Protections in 2006 to consolidate Navy-funded human research into a single, searchable database, the technology is now being used by fifteen Navy commands and one Army command. Upcoming development will include all military funded research at universities as well. The database is highly regarded and supported by Pentagon officials and federal leadership as a way for the military to be accountable for research already completed. It was found in a report that divulged that many offices did not have access to research already completed, and often took upwards of seven months to pull all of the relevant research already DoD funded. This technology would alleviate those issues, and provide a platform where research could be found quickly and easily and utilized for its original purpose: to create treatments and procedures for military members and their families.

### **Military suicides**

*The Journal of American Medical Association* emphasized that before Iraq and Afghanistan, the military suicide rate was 25 percent lower than the civilian population. Since that time, the number of suicides within the military has nearly doubled. One issue that was discussed was why suicides increased so much in the Army and Marine Corps, but not in the Air Force or Navy. One study explained the difference was due to cumulative strain in Soldiers and Marines from the protracted war effort, across both deployed and garrison environments, causing more instances of mental disorders. Screening for mental health issues is often touted as the default strategy, but this article argues that it not the most effective.

## **Future Medical Technologies**

**Popular Science:** [Scientists turn adult red blood cells into embryonic stem cells](#)

**Popular Science:** [Electronic sutures can check infections and even help wounds heal](#)

## **Medical journal clips**

### **Expanding the Boundaries of PTSD Treatment**

JAMA

Lisa M. Najavits, PhD

Aug. 15, 2012

HOW BEST TO TREAT POSTTRAUMATIC STRESS DISORDER (PTSD) is a long-standing question. Treatments for PTSD, which began in the late 19th century, have varied greatly. In the current era, numerous PTSD treatments are available, some with a strong evidence base.<sup>2</sup> In this issue of JAMA, the findings of randomized controlled trials of interventions for PTSD expand the boundaries of treatment to relatively underserved populations: the trial by Mills et al<sup>3</sup> assesses interventions in persons with PTSD and substance dependence, and the trial by Monson et al<sup>4</sup> assesses interventions in couples in which 1 partner has PTSD.

The trial by Mills et al<sup>3</sup> evaluated Concurrent Treatment of PTSD and Substance Use Disorders Using Prolonged Exposure (COPE) plus usual treatment for substance dependence (n=55) vs usual treatment for substance dependence alone (n = 48). COPE involved an individual modality treatment totaling 19.5 hours, whereas usual treatment was any type of substance use treatment available in the patient's community, including counseling, detoxification, residential rehabilitation, and pharmacotherapy. Prolonged exposure therapy is a type of cognitive-behavioral therapy that exposes patients to memories and reminders of traumatic events associated with intense negative emotions such as anxiety, anger, and sadness. Although this is the first published randomized controlled trial using prolonged exposure in patients with PTSD and substance use disorder, trials of other models for concurrent treatment of PTSD and substance use disorders have shown positive findings.<sup>5</sup> Prolonged exposure therapy is an evidence-based treatment for PTSD currently being implemented on a large scale within the US Veterans Affairs Healthcare System<sup>6</sup>; thus, results of this trial of prolonged exposure for co-occurring PTSD and substance dependence are of immediate interest.

Patients with PTSD have been treated with prolonged exposure therapy since the 1990s, and several variants of this therapy have been developed.<sup>2</sup> Although the evidence base for prolonged exposure therapy is strong, previous clinical trials have consistently excluded many of the complex PTSD cases that clinicians routinely encounter, such as patients with suicidal ideation; histories of self-harm, homelessness, and intimate partner violence; and comorbid conditions such as psychosis and substance use disorder. In fact, patients with substance use disorders have been excluded from most PTSD treatment trials.<sup>7</sup> For exposure-based models in particular, PTSD experts indicated that the treatment was not appropriate for patients with comorbid PTSD and substance use disorders until patients attained substantial recovery from substances. In recent years, pilot studies have evaluated exposure-based treatments for patients with PTSD and substance use disorders, with no finding of exacerbation of symptoms<sup>7</sup> and with improvements in various domains,<sup>8,9</sup> but the study by Mills et al<sup>3</sup> is the first randomized controlled trial to assess the efficacy of

prolonged exposure for co-occurring PTSD and substance use disorder, specifically substance dependence, the more severe form of the disorder. It is thus a welcome addition to the PTSD literature.

However, the results of the study by Mills et al showed no differences between patients in the COPE plus usual treatment condition and those in the usual treatment alone condition in outcomes for any substance use variable, depression, or anxiety at any point. For the outcome of PTSD symptoms, there were no differences between conditions at 3 months, which was the point with the greatest number of patients still participating and would be the typical end-of- treatment point for a 13-session treatment such as COPE. However, the investigators allowed a time frame of 9 months so that study participants had more time to attend treatment sessions. At 9 months, compared with baseline, PTSD had significantly improved in both study conditions, but there was a greater reduction in PTSD symptoms in the COPE group.

The strengths of this trial comprise inclusion of well- trained clinicians, monitoring of treatment quality, measurement of the amount of therapies provided as usual treatment, validated measures of patient outcomes, and appropriate statistical analyses. The investigators conducted the study in a substance abuse treatment setting, and the trial included a broad range of patients typically excluded in studies of prolonged exposure therapy, such as patients with substance dependence, injection drug use, and recent substance use. In addition, study participants included patients who were unemployed, had prior criminal justice involvement, abused multiple drugs, had histories of childhood or repeated trauma, had made prior suicide attempts, or had co-occurring borderline personality disorder. Notably too, patients were not paid for treatment attendance, which has occurred in some prior trials of prolonged exposure therapy, including the precursor to this trial,<sup>9</sup> and which may have artificially inflated results in those trials.

By the end of the trial by Mills et al, as is common with complex populations, both study conditions still had notable impairment in all domains assessed, despite the improvements from baseline. The majority of patients still had PTSD and moderate depression, and nearly half of the patients still had evidence of substance dependence, despite receiving treatment and close monitoring in this trial and, for 65% of the patients, other treatments for PTSD prior to this trial. Such findings highlight the difficulty of working with patients with PTSD and complex comorbidities. Allowing up to 9 months for study participants assigned to the intervention group to complete their treatment sessions resulted in a lack of consistent timing for end-of-treatment outcome assessment, which was a methodological weakness of this trial. Even with the time extension, the COPE dropout rate was considered high by the investigators, with patients attending a median of only 5 of 13 sessions.

In sum, the trial by Mills et al addresses important scientific and clinical questions, but its limited results indicate the need for continued work. Professionals consistently report that the comorbidity of PTSD and substance use disorder is more difficult to treat than PTSD alone.<sup>10</sup> Although prolonged exposure therapy may be considered by many clinicians to be optimal therapy for PTSD in the absence of comorbidity, the results of this trial indicate that the benefit on PTSD of prolonged exposure therapy for patients with PTSD and substance dependence was only modestly better than usual treatment at 9 months and not better on substance use variables, depression, or anxiety at any point. Moreover, prolonged exposure therapy requires intensive training,<sup>6</sup> which is not typically feasible in substance abuse settings, where group therapy modalities and a less skilled workforce predominate. Thus, exposure- based therapy for

co-occurring PTSD and substance dependence cannot be widely recommended based on the results of this trial alone. Which patients can most benefit from prolonged exposure therapy and how to assess readiness for it are areas for future work.

In another trial in this issue of JAMA, Monson et al address Cognitive-Behavioral Conjoint Therapy (CBCT) for couples in which one partner had PTSD. This intervention comprised 18.75 hours of treatment sessions that include a blend of cognitive-behavioral approaches relevant to couple treatment and PTSD. Patients assigned to receive couple therapy (n = 20) had clinically meaningful reductions in PTSD symptom severity and a modest improvement in relationship satisfaction, as compared with patients (n = 20) assigned to a wait list (who were scheduled to receive couple therapy after the conclusion of the trial). Strengths of this trial include the inclusion of same-sex as well as heterosexual couples, the detailed description of the treatment model, validated assessments, fidelity monitoring, and blinded evaluation.

In this study, the primary weaknesses were not what occurred but what was left out. There were no data on how concurrent psychotherapies may have affected outcomes or whether the couples were compensated financially for their participation in the trial, and neither the patients assigned to the wait-list condition nor patients who dropped out of treatment were included in the follow-up assessment. From a clinical perspective, the study sample also appeared generally "easier to treat" than is typical in community settings (including the study by Mills et al<sup>3</sup>), as indicated by baseline measurements of relationship satisfaction, a general lack of severe comorbidities, and the support of an intimate partner who was willing to participate in treatment. In the report by Monson et al,<sup>4</sup> the sample was predominantly white and employed, with virtually no substance use disorder at baseline.

Although the results of this trial were positive, study participants were carefully selected, and thus the applicability of this intervention to a wide range of clinical settings and patient characteristics remains unclear. For example, the authors describe their CBCT intervention as being designed to treat PTSD and its comorbid symptoms but address very few psychiatric comorbidities. Treatment strategies may be quite different, for example, for patients with PTSD and substance use disorder than for patients with PTSD and obsessive-compulsive disorder. The study by Monson et al also did not assess for Axis II disorders, which are known to influence outcomes. Because of the selection of study participants in this trial, it is difficult to generalize the results to couples who may have more strained relationships. In this trial, the couples had high relationship satisfaction and stability at baseline (those randomized to receive CBCT had been together for 8 years on average). In addition, couples were excluded if one or both had recent substance dependence, if there was evidence of severe intimate partner aggression in the past year, or if both partners had PTSD. Thus, the trial by Monson et al<sup>4</sup> cannot be interpreted as being applicable to couples with these additional challenges, which may be the couples in greatest need of help. Hopefully, future trials will evaluate couples therapy for PTSD among a broader range of patients.

The results of the trials by Mills et al<sup>3</sup> and Monson et al<sup>4</sup> are important scientific attempts to study new options for treatment of PTSD. Overall, comparative studies of PTSD therapies find that they rarely outperform each other in efficacy.<sup>11,12</sup> Thus, the cost and appeal of treatments to clinicians and patients, their intensity of intervention, and clinical setting and training issues may ultimately be as or more relevant than comparative efficacy in choosing a course of treatment for PTSD. In the current era, there is a focus on short-term treatments (in part an antidote to the overly long psychotherapies of much of the 20th century). However, it is not clear how long

treatment needs to be maintained to produce enduring positive outcomes, especially for patients with PTSD and comorbidities and difficult social circumstances. The field of PTSD therapy is still young, and the pursuit of clinically meaningful treatments for all types of patients, like the process of recovery for patients with PTSD, is an ongoing challenge.

# Preventing Suicides in US Service Members and Veterans Concerns After a Decade of War

JAMA

Charles W. Hoge, MD and Carl A. Castro, PhD

August 15, 2012

BEFORE THE WARS IN IRAQ AND AFGHANISTAN, THE incidence of suicide in active duty US service members was consistently 25% lower than that in civilians, attributable to “healthy-worker” effects from career selection factors and universal access to health care.<sup>1</sup> Between 2005 and 2009, the incidence of suicide in Army and Marine personnel nearly doubled. From 2009 through the first half of 2012, the incidence of suicide among Army soldiers remained elevated (22 per 100 000 per year), with the number dying of suicide each year exceeding the number killed in action. High rates of suicide have also been reported for US veterans, although incidence studies in veteran populations have drawn conflicting conclusions.

The pressing question is why suicides increased so markedly in soldiers and Marines, but not in Navy or Air Force personnel (or in civilians). An obvious answer would be repeated ground combat tours. However, to date no study has definitively confirmed an independent association with deployment variables. This may be due to confounding factors such as higher service attrition for personnel with deployment-related mental health problems (contributing to healthy-worker effects). The optimal way to study military-specific risk factors is to follow individuals longitudinally beyond the time of their service, an endeavor few research groups are able to undertake. Although longitudinal studies may eventually establish deployment associations, current evidence suggests that such associations are likely to be weak and not independent of well-established risk factors, especially underlying mental health problems. A logical explanation for the high suicide rates in soldiers and Marines is the cumulative strain from the protracted war effort, across both deployed and garrison environments, causing higher population prevalence of mental disorders. If this explanation is accurate, the most effective medical intervention strategies are those that facilitate access to effective treatment.

Determining the value of intervention strategies requires reliable effectiveness measures. However, military and veteran suicide research is hampered by problems with determination of “veteran” status on surveillance records; misclassifications of the manner of death; lack of integration of data from the US Department of Defense (DOD), Department of Veterans Affairs (VA), and National Death Index; and wide rate variability in population subgroups.

Pressures exist to rapidly implement multicomponent prevention programs. However, apparent program successes based on observational evidence (eg, Air Force effort in the 1990s) cannot be replicated without knowing which components contributed to effectiveness. As the war effort in Afghanistan draws down, caution is advised in attributing future reductions in suicide rates to specific programs. Attention must stay focused on the most promising suicide intervention strategies within the broad categories of screening, education, and treatment, considering also potential iatrogenic effects.

Screening and Risk Assessment



Screening is often heralded as the default mental health strategy of priority. Screening for mental disorders, particularly depression, posttraumatic stress disorder (PTSD), and substance misuse, in primary care, when combined with care management, has acceptable evidence for benefits. In contrast, the available evidence for deployment-related screening is insufficient. Problems with deployment screening include low predictive value of validated tools when used on population levels and the unwillingness of many service members to truthfully report concerns, because of stigma and other reasons.<sup>6</sup> The only deployment-related screening program associated with significant benefits, including lower rates of suicidal ideation, linked screening to close coordination of in-theater medication management by unit medical personnel.

Screening specifically for suicidal propensity (as distinct from underlying mental disorders) is also being actively pursued. However, critical problems arise when researchers or policy makers recommend tools developed with high-risk patients for application in primary care or population settings. Instruments that quantify severity of suicidal ideation or behavior in recent attempters (eg, Columbia Suicide Severity Rating Scale) will have very low predictive value when used outside specialty care. Potential unintended consequences of such use include unnecessary referrals, adverse treatment effects, stigma, reduced patient satisfaction, and treatment withdrawal.

#### Education and Public Awareness

Although suicide awareness training is mandatory for military personnel, evidence demonstrating effectiveness is lacking, and there are other reasons for concern. Many factors influence public understanding apart from education campaigns, including news media. Studies suggest associations of news reports (print and television), film, and web content with attempted and completed suicides, particularly when details surrounding deaths are reported.<sup>8</sup> This suggests a need to study the relationship between media reporting and military suicides, as well as how educational efforts portray stories involving suicidal behavior. Interactive military training videos may convey the wrong messages through illustrating details of suicidal behavior or implying that peers or leaders could be blamed for failing to heed warning signs. It is critical to validate training tools in the military environment and ensure they are associated with improvements in mental health awareness, attitudes concerning suicide, and help seeking.

#### Examining communication strategies i

, such as “zero tolerance” or “one suicide is one too many,” expressed by well-intentioned VA or military leaders. These slogans convey an implicit message: suicides are different from any other medical condition, the result of a bad “choice” by the individual or negligence by peers or leaders. These types of communications would not be used to describe attitudes toward depression, PTSD, or cancer. Suicide occurs for many reasons but is not the “fault” of the individual or those closest to the individual. To put things in perspective, for a brigade of 4000 soldiers, approximately 200 soldiers (5%) will seriously consider suicide each year, while less than 1 (0.02%) will die of suicide. Although social support, including strong leadership and unit cohesion, is associated with improved mental health, leaders and peers cannot be expected to know which soldier is in need of immediate intervention. No intervention or treatment can prevent all suicides; one-quarter of service members who die of suicide saw a mental health professional within the previous 30 days.<sup>9</sup> Individuals who make serious attempts often report perceiving suicide as an option that represents relief from chronic suffering or the burden they feel they place on others (for combat veterans, this may involve survivor’s guilt). Although suicide seems to be within an individual’s

control, it is not a decision or choice a person reaches when other options appear to have been exhausted. Suicidal intent is no different than any other life-threatening condition.

#### Treatment

Although evidence remains insufficient, experience from clinical practice and some trials lends support to a wide range of targeted interventions focused on enhancing access to care (eg, crisis call lines, providing emergency contact information), means restriction (eg, gun locks, bridge netting, dispensing medications in individual blister packages rather than bottles), and psychosocial treatment to reduce repeated attempts (eg, problem solving, risk management, cognitive or dialectical behavioral therapy). In response to the urgent need for high-quality clinical trials, DOD has established a suicide interventions research consortium.

The most important challenges in suicide prevention are stigma surrounding mental illness, negative perceptions of treatment, and other barriers (including confidentiality concerns in the military setting) that result in the majority of service members and veterans not accessing care when needed or dropping out prematurely.<sup>10</sup> It is imperative that intervention strategies—and research efforts—prioritize patient engagement and satisfaction, screening for underlying mental disorders in primary care, care coordination, capacity for timely appointments, effective treatment, and reinforcing protective effects of family and peer connections.

## Military Plans Mega-Database To Track Human Studies

Forbes

By Katie Drummond

Aug. 13, 2012

The U.S. military is behind some of the country's most sophisticated medical research, from brain-mediated prosthetics to laser-based wound healing. Their ability to track those myriad projects? Not so cutting edge — until now, at least.

A web-based system, developed by the Office of Naval Research, has been tapped as the first-ever platform to track and manage every single human-subject study under the Pentagon's umbrella.

Called PROMIS (for "Protections in Research, Oversight Management System"), the innovation was initially conceived in 2006 by personnel in the Navy's Office of Research Protections, in an effort to consolidate Navy-funded human research into a single, searchable database.

"We recognized that we needed a way, in real time, to monitor these research activities," Dr. Tim Singer, director of research protections division with the ONR's Warfighter Performance Department, says. In essence, the Navy was after a system that could track a study's every step — from initial conception by a research team, to the development of a study protocol, to the approval process, subsequent participant enrollment and (finally!) the collection of actual study data, analysis and conclusions.

Right now, PROMIS is used by fifteen Navy commands and a single Army command. But a Pentagon memorandum, finalized in July, will see PROMIS refined and built-out, in order to act as a one-stop shop for the military's human research projects. Of course, that doesn't merely mean studies run by military investigators — the system would also incorporate any human-subject study funded by the military, including those run out of universities or by private enterprises.

The importance of such a database — both for logistical and, most critically, ethical reasons — has already been emphasized by federal officials. A streamlined system for study proposals and approvals would no doubt hasten the research process. Among military projects, that process is particularly bogged down, largely because of a requirement for review and oversight of study proposals by both an institutional review board and military officials.

"After a proposal is approved by an institutional review board, it becomes subject to [service branch] headquarter review," Dr. Andy Jones, deputy director of the Research Protections division, says. "In the past, we've relied sometimes on email, but also on snail-mail or even CDs."

And where accountability is concerned, PROMIS could solve a critical problem: A 2011 report by the Presidential Commission for Bioethical Issues, authors noted that "many federal offices could not provide basic data about the research they support." The Pentagon

was called out specifically, with the report adding that officials there “required more than seven months to prepare information on specific studies supported by the Department of Defense.”

With the development of PROMIS, officials hope to see those seven-month time lags reduced to mere hours and a few simple keystrokes. “It would provide a look at every part of the study process, and answer questions that...used to take days and days,” Dr. Jones says. “How many studies on children? How many high-risk studies?”

Civilians looking for answers to those questions (or, for the adventurous among us, high-risk studies to enroll in ourselves) shouldn’t hold their breath. For now, PROMIS is being designed as an internal platform — though Dr. Jones and co. aren’t entirely opposed to changing that. With a few caveats, of course. “We do need to guard personal information of participants, [especially] health information,” he says. “And of course, be very careful about whatever classified information is in the system.”

## **Aurora-style rampages can lead to anxiety, depression among the public**

By Christine S. Moyer

Aug. 6, 2012

More than 1,500 miles east of Aurora, Colo., in New York City, some patients of psychiatrist T. Byram Karasu, MD, are afraid to go to the movies.

They fear they might be shot.

Their anxiety stems from the July 20 shooting at an Aurora movie theater that left 12 people dead and 58 injured during a midnight opening of "The Dark Knight Rises."

Anxiety, depression and panic attacks can arise in the public after a large-scale and widely publicized random act of violence, mental health professionals say. Such violence can lead to "a sense of loss of community, that everyone is out for themselves and that no one is safe," said Dr. Karasu, psychiatrist-in-chief at Montefiore Medical Center in New York. "People feel helpless and can become totally irrational."

For example, one of his patients now sits by the exit at a movie theater and bought a protective jacket, like those used by law enforcement, to wear while watching the film.

Although such responses typically are temporary, they can escalate if left untreated. Most at risk of developing problems are people with a history of mental illness and those who experienced a traumatic event in the past, including abuse, say mental health professionals.

They encourage primary care physicians to be aware that incidents such as the Aurora shooting could negatively affect their patients, even if they have no connection to the tragedy. Some patients might feel depressed and have insomnia and unexplained physical complaints, including back pain, gastrointestinal problems and headaches.

When seeing a patient with those types of symptoms after a widely publicized violent event, physicians should inquire about whether the individual's feelings are linked to the incident, mental health experts say.

A doctor could ask the patient: Are these issues "related to something you might have experienced lately, including what happened in Colorado?" said Anthony Ng, MD, medical director of psychiatric emergency services at the Acadia Hospital in Bangor, Maine. Physicians should listen to their patients' concerns, respond with empathy and emphasize that these random events are rare, he said.

"Doctors should reassure patients that this is not an everyday occurrence," Dr. Ng said. "It's certainly a tragedy, but it's almost no different than an accident if you walk across the street."

## Responding to tragedy

In Aurora, several hours after the shooting, staff from the city's mental health center gathered near the movie theater to offer support to survivors and their families. Since then, the Aurora Mental Health Center has staffed a crisis phone line 24 hours a day and is allowing walk-in appointments during business hours. In the initial days after the shooting, the center was open for patient visits around the clock, said Marlene Husson, a clinical psychotherapist and grief counselor at the center.

Many of the center's patients are survivors of the shooting and family members of victims. They're grappling with a broad spectrum of mental health issues, including fear, a lack of control and trouble sleeping and eating, Husson said. Large-scale violence can prompt psychiatric problems caused by other traumas to re-emerge.

Posttraumatic stress disorder is among the most talked-about responses to a traumatic event, but it does not affect everyone involved in the incident, said Texas psychiatrist Carol North, MD. When caring for victims of a violent event, she encourages physicians not to assume that the individual has PTSD or will develop it. Twenty-five percent to 30% of victims of significant trauma develop PTSD, according to a Dec. 15, 2003, American Family Physician report.

"People can go through horrific experiences and not become psychiatrically ill as a result," said Dr. North, director of the program in trauma and disaster at the VA North Texas Health Care System. She also is professor of psychiatry and surgery in the division of emergency medicine at the University of Texas Southwestern Medical Center in Dallas.

Several factors affect how people respond to trauma they experience or see. They include a person's emotional predisposition (anxiety or depressive), level of resilience and support system, psychiatrists say. Often exacerbating mental health issues among the public is footage of the event that is replayed on news programs for weeks, such as video of the Aurora shooting survivors dashing out of the theater, said Denver psychiatrist Elizabeth Cookson, MD.

"It's very hard for people emotionally to realize they're seeing the same thing over and over again. It seems like it wasn't an event that happened last week for 10 minutes, but an event that continues to happen and grow," said Dr. Cookson, president of the Colorado Psychiatric Society.

She often recommends that patients stop watching programs that discuss the incident, especially if nothing new is being reported.

Large-scale acts of violence also can prompt the re-emergence of psychiatric problems caused by other traumatic incidents. For example, in Colorado, news of the Aurora shooting stirred up memories and fears of the 1999 Columbine High School shooting in the Denver area that killed 13 and injured 24, Dr. Cookson said.

Some of Dr. Karasu's patients in New York who were at the World Trade Center during the Sept. 11, 2001, attacks began experiencing anxiety and nightmares again after learning about what happened at the Aurora movie theater.

"The conditions [these patients have] decrease in intensity but always require" monitoring, Dr. Karasu said.

Physicians can use the Aurora shooting to talk to patients about past abuse or trauma and identify people who might have trouble coping with large-scale random violence in the future, said American Medical Association President Jeremy A. Lazarus, MD, a Denver psychiatrist. He also encourages pediatricians and family physicians to discuss gun safety with the parents of their young patients.

Doctors should recommend that parents prohibit children younger than 8 from watching news related to any violent event, because the images and messages can be troubling for youths, said David F. Curtis, PhD, a psychologist at Texas Children's Hospital in Houston. Parents should closely monitor what older children watch and read about traumatic incidents, he said.

When discussing random violence with young patients, physicians should tell them that their concerns are normal, Curtis said. In fact, some doctors may have them, too.

Curtis attended a midnight showing of "The Dark Knight Rises" in Texas with two teenage nephews the same night as the Aurora tragedy.

"It certainly affected me," he said. "It became part of our conversation for the rest of the week."