

## Chronic PTSD Patients' Functioning Before and After the September 11 Attacks

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This study examined how treatment-seeking veterans with preexisting posttraumatic stress disorder (PTSD) ( $n = 178$ ) were affected by vicarious exposure to the September 11 terrorist attacks. Participants were surveyed 0 to 5 months prior to 9/11 and resurveyed 6 months after the attacks. Half the patients reported that thoughts and feelings about 9/11 impaired their functioning *some* (37%) or *most or all of the time* (13%). However, there was little evidence that vicarious exposure to 9/11 altered the course of these patients' functioning. Mean symptom, substance use, and role functioning outcomes were unchanged from pre-9/11 levels. Time spent following media coverage of 9/11 events was weakly associated ( $r = .17$  to  $.18$ ,  $p < .05$ ) with only two of eight functioning outcomes.

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Individuals with preexisting posttraumatic stress disorder (PTSD) are thought to be at risk for problems following vicarious exposure to a new potentially traumatic event (PTE) due to reactivation of traumatic memories and rekindling of arousal. Prior exposure to PTEs and prior psychological problems are associated with higher risk for PTSD following direct exposure to a new PTE (Brewin, Andrews, & Valentine, 2000; Ozer, Best, Lipsey, & Weiss, 2003; Norris et al., 2002). Prospective studies in New Zealand (Long, Chamberlain, & Vincent, 1994) and the United States (Wolfe, Brown, & Bucsela, 1992) showed that Vietnam veterans' prior PTSD symptoms predicted their degree of psychological distress during the first Persian Gulf War, but did not report whether veterans' symptoms increased from prewar levels.

In surveys after the September 11, 2001 terrorist attacks, acute symptoms were associated with prior exposure to PTEs, prior mental disorders, and exposure to media coverage of the attacks among general population samples not directly exposed to the events (Schuster et al., 2001; Silver, Holman, McIntosh, Poulin, & Gil-Rivas, 2002). Exposure to media images of the September 11 attacks was associated with higher rates of PTSD among New Yorkers directly exposed to the attacks, but not among those not directly exposed (Ahern et al., 2002). It is therefore unclear how exposure to media images of terrorism would impact people exposed to other types of events.

Vicarious exposure to a PTE might or might not exacerbate the functioning of individuals already having PTSD symptoms severe enough to require treatment. Violent media images of distant events may have little incremental impact on people whose minds are already filled with intrusive memories. Postdisaster shock and disillusionment may be less profound among survivors well aware of life's unpredictability.

Two preliminary studies suggested the September 11 attacks had little enduring effect on veterans with PTSD who were not directly exposed to the attacks. Intake and posttreatment functioning of veterans receiving residential PTSD treatment in the 6 months after the 9/11 attacks

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were not significantly worse than those of prior cohorts (Rosenheck & Fontana, 2003). In a study of 17 PTSD patients, symptoms increased sharply immediately following 9/11 but returned to baseline levels within a few months (Niles, Wolf, & Kutter, 2003). Neither study assessed PTSD patients' exposure to media coverage of the attacks or their subjective perception of how 9/11 events impacted their functioning.

The present study sought to answer three questions. First, did PTSD patients perceive their ongoing functioning to be impaired by the 9/11 attacks and subsequent events? Second, did patients' functioning change significantly from predisaster levels? Third, did patients' amount of exposure to media coverage following 9/11 predict changes in their functioning over time?

## Method

### Sample

The present study was an outgrowth of a longitudinal study of veterans receiving PTSD treatment at five West Coast VA medical centers. Prospective participants were randomly sampled from all patients receiving a PTSD diagnosis during a treatment visit between March and August 2001. Patients were surveyed by mail, with telephone follow-up to encourage participation. Of 605 eligible patients, 265 (44%) completed a baseline survey prior to September 11, 2001. Participants and nonparticipants were similar ( $p > .20$ ) in gender, race, period of service, POW status, and comorbid psychiatric and substance use diagnoses, but participants were an average of 3 years older,  $t(359) = 4.4, p < .01$ .

Participants were recontacted in March 2002 and invited to complete an additional survey on their response to 9/11 events. The follow-up survey was conducted 6 months after the attacks to allow for remission of acute distress. Two thirds ( $n = 178$ ) of those completing the baseline survey responded to the follow-up survey. Relative to nonrespondents, veterans completing the follow-up survey were nonsignificantly older,  $t(255) = 1.87, p < .07$ , more likely to be white (81% vs. 69%),  $\chi^2(1, N = 205) = 3.5, p < .06$ , and more likely to be female (7% vs. 1%),  $\chi^2(1, N = 266) = 4.0$ , Fisher's test  $p < .07$ . Respondents were similar ( $p > .10$ ) to nonresponders in baseline symptoms, substance use, role functioning, and social functioning. An average of 10 months ( $SD = 1.6$ ) elapsed between the baseline and follow-up surveys.

Respondents were overwhelmingly male (93%), ranging in age from 29 to 86 ( $M = 59, SD = 11.3$ ). Racial/ethnic information was available for 125 subjects,

of whom 80% were Caucasian, 10% African-American, 7% Hispanic, and 3% Asian/Pacific Islander. Half (53%) were currently married, and 76% had a medical or psychiatric disability related to their military service. The majority of participants served in the military during major conflicts, including the Vietnam War (64%), World War II (14%), the Korean War (10%), and Operation Desert Storm (3%). Fewer than 10% were enlisted during the post-Korean (2%), post-Vietnam (6%), or other (1%) eras.

### Measures

The Impact of Events Scale-Revised (Weiss & Marmar, 1997) assessed PTSD symptoms in the previous week related to past stressful events. Psychological distress was assessed with the Symptom Checklist-6 (SCL-6; Rosen et al., 2000), a six item index, which correlates .87 with the full SCL-90 (Derogatis, Lipman, & Covi, 1973). SCL-6 items include feeling blue, hopeless, tense, fearful, alone even with others, and believing that something is wrong with one's mind. Substance use problems were assessed with alcohol and drug composites from a self-report version of the Addiction Severity Index (McLellan et al., 1992). Violent behavior was evaluated with a four item index used in evaluations of VA PTSD treatment programs (Rosenheck & Fontana, 2003). Role functioning was assessed with the role-emotional subscale from the Veterans Short Form-36 (SF-36; Kazis et al., 2004). Social contacts were evaluated with two items (Cronbach's alpha = .50) from the Health and Daily Living Form (Moos, Cronkite, & Finney, 1990). Family conflict was assessed with two items from the family composite of the Addiction Severity Index: number of days of serious conflict in the past month and level of concern about family problems (Cronbach's alpha = .57).

Participants were asked whether they were in New York or Washington on September 11, participated in recovery efforts, and whether they knew anyone exposed to or killed in the attacks. Respondents were also asked how many hours per day they spent watching television, listening to the radio, searching the Internet, or reading newspapers and magazines for information in the first few days after 9/11. Two 5-point Likert scales assessed veterans' subjective impairment related to 9/11 events: 1) "In the past week, how much of the time have thoughts and feelings about the events of September 11 interfered with your regular daily activities?" and 2) "In the past week, how much of the time has concern about the risk of new terrorist attacks interfered with your regular daily

**Table 1.** PTSD Patients' Symptoms and Functioning Prior to and 6 Months After September 11, 2001

Measure	Possible Response Range	<i>n</i>	Spring/ Summer 2001		March 2002		<i>t</i>	Semi-Partial Correlation of March 2002 Scores <sup>a</sup>	
			<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		With Media Exposure	With Subjective Impairment From 9/11
Subjective impairment from 9/11	(1–5)	158	–	–	2.36	1.07	–	.36 <sup>b**</sup>	–
SCL-6	(0–4)	177	2.42	1.00	2.43	1.00	–0.15	.12	.21 <sup>**</sup>
IES-R Total	(0–84)	163	53.2	18.0	52.1	18.4	0.84	.12	.31 <sup>**</sup>
ASI - Alcohol	(0–1)	137	0.09	0.15	0.09	0.13	0.90	–.05	–.01
ASI - Drug	(0–1)	133	0.06	0.08	0.06	0.09	–0.45	.16	.10
Family conflict	(0–1)	163	0.63	0.48	0.65	0.48	–0.52	.17 <sup>*</sup>	.21 <sup>**</sup>
Impaired role functioning	(3–15)	176	10.38	2.84	10.41	3.08	–0.14	.07	.18 <sup>*</sup>
Social contacts	<sup>c</sup>	174	6.57	8.95	7.32	9.98	–0.96	–.18 <sup>*</sup>	–.11
Violence	(0–4)	169	0.53	0.92	0.45	0.84	1.28	–.08	.07

Note. PTSD = posttraumatic stress disorder; SCL-6 = Symptom Checklist-6; IES-R = Impact of Events Scale-Revised; ASI = Addiction Severity Index.

<sup>a</sup>Controlling for baseline score on same variable. <sup>b</sup>Simple correlation, as there was no pre-9/11 baseline. <sup>c</sup>Total number of visits with friends or relatives in the past month.

\* $p < .05$ , \*\* $p < .01$ .

activities?" The items were highly correlated ( $r = .80$ ,  $p < .001$ ) and their values were averaged to produce a single index.

### Data Analysis

Changes in functioning from pre-9/11 baseline to follow-up were assessed with paired *t*-tests. Relationships between amount of exposure to media coverage following 9/11 and clinical outcomes were assessed with partial correlations controlling for pre-9/11 scores.

### Results

In the first few days after September 11, 30% of participants spent more than 8 hours per day following television or other media, 38% spent 2 to 8 hours, 27% spent less than 2 hours daily, and 5% had no media exposure. Only four participants had been in the New York or Washington, D.C. areas or were involved in recovery efforts. Seventeen individuals knew people killed or endangered in the attacks. Removing these individuals did not substantially alter our findings, so they were retained.

Half of the veterans reported that thoughts and feelings about the events of September 11 and their aftermath interfered with their functioning *none* or *a little* of the time in the past week, 37% said they interfered with their functioning *some* of the time, and only 13% said they interfered *most* or *all* of the time. There was a medium-

sized association ( $r = .36$ ,  $p < .001$ ) between subjective impairment from 9/11 events and time spent following media coverage of 9/11 events.

None of the eight outcome measures changed significantly between baseline (May to August 2001) and March 2002 (see Table 1). Time following 9/11 media coverage was weakly associated ( $r = .17$  and  $.18$ , respectively,  $p < .05$ ) with less social contact and greater family conflict, and was not significantly associated with the other six outcome measures.

### Discussion

Veterans' average symptoms and functioning 6 months after 9/11 were not worse than before the attacks. Veterans' amount of exposure to 9/11 media coverage was weakly associated with only two of eight longitudinal outcomes, social isolation and family conflict. This association may reflect the negative social effects of isolative television viewing habits rather than retraumatization.

Despite a lack of an observed increase in average symptom distress, half the patients attributed problems in functioning to September 11 and its aftermath, especially those patients who viewed more 9/11 media coverage. We cannot fully determine reasons for the discrepancy between patients' stable course and their subjective reports of impairment from 9/11. Our measure of subjective impairment may reflect 9/11-related distress that was not assessed by other indices of functioning. Exposure to

media coverage of 9/11 may have increased such distress, and/or more distressed individuals may have tended to more closely follow 9/11 events. Another possibility is that the salience of 9/11 events may have cued some patients to misattribute fluctuations in chronic symptoms to the recent terrorist attacks.

The retrospective nature of most disaster research makes it difficult to differentiate new onset of PTSD from exacerbation of subclinical symptoms, undiagnosed prior conditions, or misattribution of preexisting problems to a new stressor (Ozer et al., 2003, p. 67). Our data could have shown two very different pictures of how the 9/11 attacks impacted PTSD patients. If we had access to only retrospective information and patients' subjective attributions of impairment, we could easily have concluded that vicarious exposure to 9/11 events exacerbated many patients' symptoms, particularly because those reporting greater impairment spent more time attending to 9/11 media coverage and had more severe symptoms.

Our prospective data enable us to see that VA PTSD patients' long-term functioning did not significantly worsen following vicarious exposure to the 9/11 attacks. This is consistent with other studies on this population (Niles et al., 2003; Rosenheck & Fontana, 2003). The September 11 attacks brought a loss of innocence and unaccustomed vulnerability to many Americans. Such effects may have been less profound among veterans already traumatized by prior events, particularly if they were so severely impaired that they were unlikely to worsen further.

Our study has some important limitations. None of our participants were directly exposed to the 9/11 attacks. The September 11 attacks were also dissimilar from most veterans' combat experiences. Our results therefore say little about how individuals with preexisting PTSD are affected by direct exposure to a new PTE (Brewin et al., 2000), or by viewing media images similar to a PTE they have experienced directly (Ahern et al., 2002). Finally, we cannot determine whether patients who chose not to respond to the follow-up survey may have been more severely affected by 9/11 events.

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