

Symptom Patterns Associated With Chronic PTSD in Male Veterans

New Findings From the National Vietnam Veterans Readjustment Study

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Abstract: A subsample of 255 male Vietnam veterans from the National Vietnam Veterans Readjustment Study received in-depth psychiatric diagnostic interviews. This paper focuses on the 88 veterans with a war-related onset of PTSD. Among these veterans, the avoidance cluster, especially its symptoms of numbing, was most strongly associated with chronic PTSD; less strongly but also significantly associated was the hyperarousal cluster. Further analyses show that these associations are not artifacts of the relationship of symptom patterns to prewar demographic factors (race/ethnicity, socioeconomic status, age at entry into Vietnam), comorbidity, treatment and compensation seeking, or probable severity of war-related trauma. We conclude that certain symptom profiles may predict enduring pathological responses to trauma and therefore provide targets for intervention efforts.

Key Words: PTSD, Vietnam, chronicity, NVVRS, avoidance.

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Symptomatic reactions after severe trauma are common (Rothbaum et al., 1992). Chronic PTSD is less common and is strongly associated with multiple indicators of severe impairment (Davidson et al., 1991; Marshall et al., 2001; McFarlane et al., 1994; Riggs et al., 1998). If a high-risk symptom profile could be identified, such knowledge would help guide both etiologic and intervention research.

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Given that acute symptomatic reactions after severe trauma are extremely common (Rothbaum et al., 1992), research on predictors of illness has focused on chronic PTSD as the outcome most strongly associated with multiple indicators of severe impairment (Davidson et al., 1991; Marshall et al., 2001; McFarlane et al., 1994; Riggs et al., 1998). If a high-risk acute symptom profile could be identified, such knowledge could help guide both etiologic and intervention research.

The PTSD diagnosis is a disjunctive category, meaning that only one out of any 4 re-experiencing symptoms (criterion B), 3 out of 7 avoidance symptoms (criterion C), and 2 out of 6 hyperarousal symptoms (criterion D) were required to receive the diagnosis in DSM-III-R. Thus, there can be considerable variation in actual symptom presentation within the diagnosis itself, allowing for the possibility that some symptoms or symptom clusters are more strongly associated with chronicity than others. Moreover, the presence of clinically significant comorbidity in most PTSD patients (Kessler et al., 1995) raises the possibility that associated problems or disorders, which vary considerably across individuals with PTSD, may be predictors of chronicity rather than PTSD symptoms per se.

The National Vietnam Veterans Readjustment Study database provides a unique opportunity to examine symptoms associated with highly chronic PTSD (i.e., 11–12 years after the end of the war). A subsample of veterans in the study received in-depth psychiatric assessments that included disorder history. In this paper, we use these histories to examine the association of the three main symptom clusters (re-experiencing, avoidance, and arousal) to the persistence of PTSD. We also examine the role of certain prewar demographic factors, comorbid psychiatric disorders, receiving treatment, seeking and receiving VA compensation, and severity of war-zone trauma.

METHODS

Respondents

The sample consists of 255 male Vietnam veterans from majority white, African American, and Latino backgrounds. These individuals were drawn from the pool of

veterans in the National Vietnam Veterans Readjustment Study who lived within commuting distance of 28 Standard Metropolitan Statistical Areas. All veterans likely to be PTSD cases on the basis of preliminary screening information were included, as was a sample of the likely negatives. Details regarding the sampling procedure and completion rates have been previously reported (Kulka et al., 1990).

Symptoms and Diagnoses

Twenty-eight clinicians interviewed this subsample using the Structured Clinical Interview for DSM-III-R (SCID; Spitzer et al., 1987). These SCID interviews were tape-recorded, and staff psychiatrists and psychologists at the Research Triangle Institute reviewed every tape to check the adequacy of the data elicited on PTSD. An independent reliability check of current and lifetime PTSD diagnoses resulted in κ statistics of .87 and .94, respectively (Weiss et al., 1992).

The basic distinction called for in the SCID PTSD module for each PTSD symptom was between “lifetime” (i.e., whether it occurred or not during the veteran’s lifetime) and, if lifetime, whether the symptom was current (present at any time during the past 6 months). The clinician then had to ascertain whether the symptoms recorded occurred together for at least a month in sufficient numbers and types to meet criteria for a diagnosis of PTSD and, if so, whether they also met criteria for current PTSD—that is, whether the syndrome was present for 1 month or more of the preceding 6 months (Research Triangle Institute, 1987).

In contrast to the way in which the SCID is normally administered, all symptom items were administered to all of the Vietnam theater veterans, even when a specific criterion A stressor was not reported. In such cases, the items were asked in reference to “your Vietnam experience.” Also, when criterion A traumatic events had occurred, the clinicians who administered the interview were asked to specify whether it occurred prior to, during, and/or following service in Vietnam. We used this information, combined with the date of initial onset of PTSD, to establish whether the first onset of PTSD for the respondents was related to their service in Vietnam, and to create three groups for the analyses: no PTSD ($N = 159$), past war-related PTSD only ($N = 30$), and current war-related PTSD ($N = 58$). Respondents with a PTSD onset that first occurred in relation to a traumatic event that happened either before or after service in Vietnam ($N = 5$) were excluded from analysis, as were three remaining cases missing data on PTSD, time of onset of PTSD, or the sampling weight.

Chronic war-related PTSD is defined here as a diagnosis of *current* war-related PTSD—that is, meeting criteria within 6 months prior to the SCID interview. There are two problems with this definition. First, it does not distinguish between *chronicity* and *recurrence*. Second, it is possible that some veterans with past but not current war-related PTSD had recovered only recently. Fortunately, the SCID clinicians were asked to chart the presence and severity of PTSD, from its initial onset to the time of the interview, by drawing a freehand graph on a severity-by-time Cartesian plane. There was no indication of a relatively symptom-free period in any of the 58 veterans with current war-related PTSD. Among veterans with past

PTSD, symptom levels severe enough to meet criteria for disorder had remitted long before. These findings indicated that our operational definition of chronicity was appropriate.

Other Variables

Comorbid psychiatric disorders were assessed by the same 28 clinicians using the SCID. Treatment-seeking was assessed with veterans’ self-reports of whether and from where they had sought help for psychological or emotional problems (drug or alcohol abuse included). Receipt of service-connected disability compensation was assessed from VA records. We also examine whether the veteran reported seeking or having sought such compensation, even if not successful. The measure of probable exposure to war-zone stressors builds on a measure we constructed previously (Dohrenwend et al., 2004). This measure combines data on occupational specialty (MOS), monthly casualty rates during the veteran’s service in Vietnam, casualty rate of his unit at the level of the division (e.g., 101st Airborne) or independent brigade (e.g., 199th Light Infantry), and number of soldiers killed in action in his company during his Vietnam service. All of this information comes from military records and/or the historical record, thus eliminating recall biases that might influence retrospective self-reports of combat experiences (see, for example, Southwick et al., 1997). These data were combined into a composite variable with categories of very high, high, moderate, and low probabilities of exposure.

Analyses

The analyses were conducted in two phases. The first compares the war-related lifetime symptom profiles of three groups: veterans with current war-related PTSD, veterans with past (but not current) war-related PTSD, and veterans with no PTSD diagnosis. Lifetime symptoms more prevalent in the group with current war-related PTSD compared with the group whose PTSD had remitted are those symptoms we deem to be associated with chronicity. The second phase of the analyses involves multiple regressions that assess whether symptom differences between the current and past PTSD groups remain after controlling for other variables possibly associated with chronic PTSD. In all analyses, the data are weighted to reflect each respondent’s probability of selection into the sample. *SEs* are obtained through Taylor-series estimation procedures using the software package SUDAAN (Shah et al., 1997).

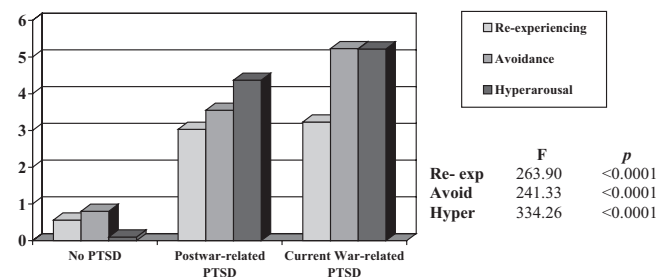


FIGURE 1. Comparison of war-related lifetime symptom profiles of three distinct groups of veterans.

TABLE 1. Mean Numbers of Lifetime Re-Experiencing, Avoidance, and Hyperarousal Symptoms by Diagnostic Status for War-Related PTSD

	No PTSD	Past War-Related PTSD	Current War-Related PTSD	F	p
Re-experiencing	0.56	3.03	3.23	263.90	<0.0001
Avoidance	0.80	3.55	5.23	241.33	<0.0001
Hyperarousal	0.99	4.37	5.22	334.26	<0.0001

Difference Between Mean Current and Mean Past Cluster Symptoms in All Subjects With Lifetime PTSD

	Current-Past	SE Current-Past	t Test	p
Re-experiencing	0.20	0.41	0.51	0.61
Avoidance	1.64	0.50	3.38	0.0008
Hyperarousal	0.84	0.38	2.21	0.0278

RESULTS

Symptom Predictors of PTSD Chronicity

Figure 1 and Table 1 show that levels of avoidance and hyperarousal symptoms are significantly higher in the current PTSD group than in the past PTSD group. This relationship is quite strong in the case of avoidance. Re-experiencing symptoms, in contrast, appear to be unrelated to PTSD chronicity.

Within the avoidance cluster, it is the symptoms of emotional numbing that show the strongest associations with chronic PTSD. For these three symptoms—diminished interest in significant activities, restricted range of affect, and feelings of detachment or estrangement from others—the difference in war-related prevalence between the current and past PTSD groups ranges from 27.9% to 39.6%. Two of these three contrasts are statistically significant ($p < 0.05$), and the third is marginally so ($p < 0.06$). Psychogenic amnesia was the only other individual avoidance symptom significantly associated with chronic PTSD. Within the hyperarousal cluster, only insomnia (current-past prevalence difference of 41.2%, $p = 0.004$) and irritability (difference of 21.2%, $p = 0.055$) are strongly associated with chronicity. In the re-experiencing cluster, only the flashback symptom—sudden acting or feeling as if the traumatic event were recurring—shows a substantial relationship to chronicity (prevalence difference of 25.0%, $p = 0.09$).

Testing Alternative Explanations

There are a number of factors that might explain the symptom patterns described. Columns 2 through 4 in Table 2 display the contrasts in number of war-related PTSD symp-

toms within each of the three clusters controlling on, respectively, comorbid disorders with overlapping symptoms, race/ethnicity and socioeconomic background, and probable severity of exposure to war-zone stress. None of these factors, taken individually, can explain the associations of the avoidance and hyperarousal symptom clusters with current PTSD.

Although not included in Table 2, we also considered whether the findings in Table 1 could be explained by the association of certain symptom patterns to treatment seeking or to the secondary gain of disability compensation. The associations are undiminished by controls for either variable. Indeed, treatment is actually more prevalent among veterans with current war-related PTSD than among those whose war-related PTSD had remitted, undoubtedly due to the increased probability of selection into treatment as the disorder persists in time.

The last column of Table 2 displays the mean differences between the current and the past war-related PTSD groups with all of the factors in the previous three models, plus seeking and/or receiving disability compensation and comorbid alcohol or drug abuse, controlled. The last variable is included because of its possible association to numbing and hyperarousal symptoms. Significant associations of both avoidance symptoms and hyperarousal symptoms with chronic PTSD remain with all of these control variables in the model.

DISCUSSION

These results provide support for the clinical theory that the dissociative and emotional numbing components of avoidance may be maladaptive responses to traumatic events

TABLE 2. Tests of Alternative Hypotheses: Comorbidity, Prewar Vulnerability, and Probable Severity of Exposure as Risk Factors for PTSD Chronicity^a

	(1) Unadjusted	(2) Adjusted for Comorbidity	(3) Adjusted for Prewar Factors	(4) Adjusted for Probable Exposure	(5) Full Model
Re-experiencing	0.20	0.11	0.15	0.50	0.32
Avoidance	1.68***	1.37**	1.71***	1.41*	1.14*
Hyperarousal	0.84*	0.67†	0.77*	1.22***	1.00**

^aNumbers in the table are weighted mean differences between the group with current war-related PTSD ($N = 58$) and the group with past PTSD: (1) unadjusted; (2) adjusted for current MDD and panic disorder; (3) adjusted for parental education, race/ethnic, and age at entry to VN; (4) full model as measured by our MHM.

† $p \leq 0.1$; * $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.0001$.

that impede cognitive and emotional processing of the experience necessary for gradual, spontaneous recovery (Marmar et al., 1994).

One possible explanation for inconsistencies in the literature is that the predictive value of re-experiencing for chronicity varies as a function of severity of trauma. After severe trauma, re-experiencing may be nearly universal and thus has no predictive power in risk factor analyses.

The identification of symptoms associated with long-term persistence of PTSD is important from both clinical and public health perspectives. Our results suggest that, among Vietnam veterans with a war-related PTSD onset, the avoidance cluster is strongly associated with the probability of current PTSD 11 to 12 years after the end of the war. The hyperarousal cluster is also significantly, though less strongly, associated with current PTSD. The re-experiencing symptom cluster, in contrast, does not discriminate between past and current war-related PTSD. These associations of war-related avoidance and hyperarousal symptoms with current PTSD cannot be explained by the association of these symptoms with comorbid disorders or with prewar demographic factors. Treatment and compensation seeking are not important factors and, although war-zone exposure is related to excess avoidance symptoms, it does not explain the association of this cluster with current PTSD.

Within the avoidance cluster, symptoms usually viewed as manifestations of emotional numbing showed the strongest associations with PTSD. It is possible that emotional numbing is a distinct fourth symptom cluster in PTSD that is particularly predictive of chronicity (Foa et al., 1997).

The main limitation of this research is the retrospective nature of the data. Fortunately, we do not have to deal with recall bias in our assessment of war-zone stress exposure, because our MHMs are contemporaneous and do not rely on self-report. However, our analyses assume that veterans accurately recall PTSD symptoms they experienced in the past but are no longer present. If veterans with past war-related PTSD are less able to recall past avoidance symptoms than past symptoms in other clusters, then this would make avoidance appear to be related to chronicity. We know of no reason that a veteran able to recall the three past avoidance symptoms necessary to get the war-related PTSD diagnosis would be less able to recall excess avoidance symptoms than excess symptoms in other clusters. Nor is there evidence for this from the most relevant prospective study we could find (Harvey and Bryant, 2000; Table 2).

The other important limitation is the absence of information about specific symptom fluctuations between war service and the diagnostic interview many years later. We cannot, therefore, investigate whether the patterns of war-related symptoms associated with current PTSD are the same as those present at the onset of the disorder.

Nevertheless, the finding of a strong role of avoidance is consistent with other studies that focus on traumas involving life threat (Blanchard et al., 1996; McFarlane et al., 1994; North et al., 1999; Riggs et al., 1998). The absence of an

association for the re-experiencing symptoms, however, is inconsistent with theoretical formulations that emphasize the role of both avoidance and re-experiencing (e.g., Horowitz, 1986). It may be that our pattern of findings is unique to exposures characterized by a high degree of life threat and threat to physical integrity.

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