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PTSD Symptoms Among Male Vietnam Veterans: Prevalence and Associations With Diagnostic Status

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The present study examined reported rates of specific posttraumatic stress disorder (PTSD) symptoms in a veteran sample and the extent to which specific symptoms predicted PTSD diagnostic status. A sample of 1325 unmedicated male Vietnam veterans were interviewed using the Structured Clinical Interview for the *Diagnostic and Statistical Manual, 3rd edition revised* (*DSM–III–R*) by doctoral-level clinicians. Of the total sample, 798 met diagnostic criteria for current PTSD, 189 met criteria for a lifetime diagnosis of PTSD, and 338 did not meet criteria for either current or lifetime PTSD. Overall, participants endorsed a median of 9, and a mean of 8.4 ($SD = 5.4$) out of 17 possible PTSD symptoms. The most frequently endorsed symptoms among participants meeting criteria for current PTSD were hypervigilance and detachment from others, followed by intrusive recollections and sleep difficulties. The symptoms with the greatest diagnostic sensitivity in this sample were hypervigilance and detachment from others and those with the greatest diagnostic specificity were flashbacks and nightmares. Intrusive recollections and interpersonal detachment were the overall best predictors of current PTSD diagnostic status. Psychiatric comorbidity was associated with increased overall symptom endorsement rather than the presence of a different pattern of symptom distribution. The finding that hyperarousal and detachment symptoms are more strongly associated with PTSD diagnosis is consistent with reports from other studies conducted with veterans and other trauma-exposed samples. However, certain symptoms were found to occur at higher rates than have been reported in different populations with PTSD.

Keywords: posttraumatic stress disorder, symptoms, comorbidity, veteran

Given that endorsement of only 6 out of a possible 17 posttraumatic stress disorder (PTSD) symptoms (1 reexperiencing, 3 avoidance and numbing, and 2 hyperarousal) are necessary to achieve caseness, a great deal of heterogeneity is observed among those diagnosed with the disorder. Determining which symptoms are most frequently endorsed and which are most likely to indicate the presence of the disorder may be a useful heuristic in assessment and diagnosis. Comparing the symptom presentations of those with PTSD with those who do not currently meet criteria for the disorder may provide a clue regarding which symptoms might serve as an indication of the presence of PTSD or which symptoms are likely to persist when the disorder is no longer present. Furthermore, many individuals exposed to potentially traumatic events may exhibit PTSD symptoms in the context of other psychiatric disorders.

There is as yet no consensus in the field with regard to the relative prevalence or the predictive power of individual symptoms of PTSD. For instance, some researchers have found that a sense of foreshortened future was more likely to persist in nonclinical samples exposed to trauma (Herkov & Biernat, 1997) and was also associated with greater overall PTSD severity (Palm, Strong, & MacPherson, 2009). Others have found intrusive recollections and exaggerated startle (Creamer, 1989) or avoidance of thoughts and feelings (Foa, Riggs, & Gershuny, 1995) to be the most frequently endorsed symptoms. Some have suggested that the presence of flashbacks provided little information about levels of PTSD severity (Betemps, Smith, Baker, & Rounds-Kugler, 2003), though others have noted high rates of endorsement of this particular symptom among Vietnam veterans with PTSD (Kimbrell, Myers, Freeman, & Zammit, 2003).

There is similarly no consensus regarding the relative prevalence or the predictive power of the PTSD reexperiencing, avoidance and numbing, and hyperarousal symptom clusters. Although some researchers have identified the hyperarousal cluster as particularly important in predicting the development of PTSD (O'Donnell, Elliott, Lau, & Creamer, 2007; Schell, Marshall, & Jaycox, 2004; Solomon, Horesh, & Ein-Dor, 2009), others have found reexperiencing symptoms to be more frequently endorsed (Rasmussen, Smith, & Keller, 2007) and to be associated with more severe PTSD (Conrad et al., 2004). Additional research has suggested that avoidance symptoms are endorsed most frequently

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(Kopel & Friedman, 1997) and are more likely to persist over time (Herkov & Biernat, 1997; Marshall et al., 2006; Perkonigg et al., 2005; Solomon et al., 2009), with some researchers noting that the numbing symptoms of that cluster are often most strongly associated with current PTSD (Foa et al., 1995; Marshall et al., 2006). At the same time, however, others have found avoidance symptoms to be associated with lower severity of PTSD (Betemps et al., 2003). Thus, to date, (a) PTSD symptom distribution appears variable across different samples and (b) no single PTSD symptom cluster has emerged as the most important with regard to predicting the presence of a PTSD diagnosis. In sum, the picture remains unclear with regard to relative symptom prevalence or the predictive power of either individual symptoms or symptom clusters and therefore further research in this area is necessary.

One group that remains particularly understudied with respect to PTSD symptom prevalence and predictive power but that is especially relevant today is veterans. Although it would be helpful to have information about the prevalence and predictive power of PTSD symptoms among veterans who have recently returned from war zones in Iraq and Afghanistan, data gathered from veterans of previous conflicts may help shed light on prevalence and predictive power of more chronic and debilitating combat-related PTSD symptoms. Marshall and colleagues (2006) examined the difference in reporting rates of both individual symptoms and symptom clusters between a group of Vietnam veterans with current PTSD and a group with lifetime but not current PTSD. The authors found that veterans with current PTSD reported more avoidance and hyperarousal symptoms than those with past PTSD, with the hyperarousal symptom cluster being the most significant differentiator. Among the individual symptoms, emotional numbing, psychogenic amnesia, insomnia, irritation, and flashbacks were all able to distinguish between those with current PTSD and those with past PTSD. Unfortunately, the sample used in this study was relatively small ($n = 88$). As a result, (a) the authors were unable to address issues of comorbidity, and (b) findings of this study may not generalize to other groups of veterans.

The present study examined the prevalence of specific PTSD symptoms in a large veteran sample as well as the degree to which individual symptoms predicted the presence of the overall syndrome. Additionally, we compared the prevalence rates of PTSD symptoms among participants with no history of PTSD, lifetime PTSD, and current PTSD. Finally, we compared prevalence rates of PTSD symptoms between (a) participants with PTSD only, (b) participants with PTSD as well as other comorbid disorders, and (c) participants without PTSD but with other psychiatric disorders. This study expands upon past studies by examining both individual symptom endorsement and that of overall clusters, as well as associations between these variables and PTSD and other psychiatric diagnoses in a sample of combat-exposed veterans. Furthermore, this study also expands upon previous studies of this population (Solomon et al., 2009) by using a larger sample size and exploring differences between groups with PTSD only and those with comorbid and alternate psychiatric diagnoses.

We hypothesized that patterns of symptom prevalence observed would be similar to those reported in another Vietnam veteran sample (Marshall et al., 2006), with high endorsement of symptoms in the avoidance and hyperarousal clusters among those with current PTSD. In terms of individual symptoms, no specific hypotheses were made given that the limited amount of research in this area has led to contradictory findings. With respect to comorbid diagnoses, we expected differential patterns of symptom presentation depending on the comorbid diagnosis, with higher rates of symptoms more characteristic of the diagnosis in question. For instance, in the case of PTSD with comorbid depression, we expected that the typical presentation would involve higher rates of self-reported sleep difficulties and loss of interest in pleasant activities. Similarly, we expected higher rates of reported hyperarousal and avoidance among those with PTSD and comorbid anxiety disorders and higher rates of restricted affect and flashbacks among those with PTSD and comorbid psychotic disorders.

Method

Participants were 1,325 unmedicated male veterans who served in the Vietnam theater of operations, interviewed by doctoral-level clinicians using specific modules of the Structured Clinical Interview for the *Diagnostic and Statistical Manual, 3rd edition revised* (*DSM–III–R*) (SCID; Spitzer, Williams, Gibbons, & First, 1990), following informed consent procedures approved by the Institutional Review Board. Modules administered included: major depression, bipolar disorder, schizophrenia (psychotic screen), alcohol abuse and dependence, drug abuse and dependence, panic disorder, social phobia, obsessive–compulsive disorder, somatoform disorder, dissociative disorder, and PTSD. The present study was a secondary analysis of data collected for a large multicenter Veteran's Administration (VA) cooperative study conducted in the early 1990s (Keane et al., 1998), and thus *DSM–III–R* rather than *DSM–IV* criteria were used. One important change from *DSM–III–R* to *DSM–IV* criteria was the placement of the physiological reactivity to trauma-related cues symptom in Cluster B (reexperiencing) rather than in Cluster D (hyperarousal). Of the total sample, 30% experienced a traumatic event prior to their service in Vietnam, 95% during their service, and 50% were exposed to trauma after Vietnam. Of the total sample, 798 met criteria for current PTSD (786 for military-related PTSD), 189 for a past diagnosis of PTSD, and 338 never met criteria for PTSD, according to *DSM–III–R* diagnostic criteria. Forty percent of the sample reported receiving a military pension for a service connected disability. The mean age at time of assessment was 43.3 years old ($SD = 3.8$) with a mean age of 22.7 years ($SD = 1.9$) since first entry into the Vietnam theater of operations. A more detailed account of the methods used and demographics of the sample is reported elsewhere (Keane et al., 1998).

Analyses were conducted using the SPSS statistical software package version 17.0 and involved computing means and percentages of participants who met criteria for each symptom at the "threshold or true" level as defined by the SCID, for each group. Logistic regressions in which presence or absence of current PTSD diagnosis was predicted were used to compute the sensitivity and specificity of each symptom. Analysis of Variance (ANOVA) with Scheffé post hoc comparisons was used to evaluate differences between groups on mean number of symptoms in each cluster and z tests were used to test for differences between groups on individual symptoms.

Results

PTSD Status

Results indicated a high level of symptomatology in this sample, with all participants endorsing a median of 9 and a mean of 8.4 ($SD = 5.4$) out of 17 possible PTSD symptoms. Table 1 presents the pattern of endorsement of specific symptoms among each of the PTSD groups. The most frequently endorsed symptoms among those meeting criteria for current PTSD were hypervigilance and detachment from others, followed by intrusive thoughts and sleep difficulties. The symptoms with the greatest specificity in this sample were flashbacks and nightmares, and those with the greatest sensitivity were hypervigilance and detachment from others. Significant differences were observed between all groups (all p values $<.001$), which remained significant when controlled for multiple comparisons using a modified Bonferonni procedure (Jaccard & Wan, 1996).

Among those who never met criteria for PTSD, symptoms most frequently endorsed were hypervigilance (22%) and exaggerated startle (21%), while the least frequently endorsed symptoms were nightmares (5%) and flashbacks (4%).

In terms of predictive power of current symptoms with regard to current PTSD diagnostic status,[1] those with the greatest sensitivity were detachment from others (.88), hypervigilance (.87), and intrusive recollections (.82), and those with the greatest specificity were flashbacks (.93), nightmares (.90), and physiological reactivity to triggers (.87). Overall, the individual symptoms that correctly classified the most cases (into current PTSD present/absent) were intrusive recollections of the event (82% correct) and detachment from others (82% correct).

Comorbid Disorders

Because of the high percentage of participants with PTSD in this sample, subsets of those who only met criteria for diagnoses other than PTSD are substantially smaller. As seen in Tables 2,3,4, and 5, relative symptom prevalence was similar among those with PTSD only and those with PTSD and additional comorbid diagnoses. Comparisons were made among those participants meeting criteria for PTSD only, those with PTSD and other comorbid *DSM–III–R* diagnoses, and those meeting criteria for disorders other than PTSD. Groups were constructed to correspond to major diagnostic categories and included those participants who met *DSM–III–R* criteria for mood disorders (Major Depressive Disorder, Dysthymic Disorder, Bipolar Disorder or Other Depressive Syndrome), anxiety disorders (Obsessive Compulsive Disorder, Social Phobia, Panic Disorder, Generalized Anxiety Disorder), substance use disorders (Abuse or Dependence of Alcohol, Cannabis, Stimulants, Opioids, Cocaine, Hallucinogens/PCP, Other Drugs or Polysubstance Abuse or Dependence), or psychotic disorders (Schizophrenia, Schizoaffective Disorder, Schizophreniform Disorder, Delusional Disorder, Brief Reactive Psychosis or Psychotic Disorder Not Otherwise Specified [NOS]).

Overall, the mean number of comorbid diagnoses was 1.1 ($SD = 1.4$) and the specific types of comorbidity were varied. Details regarding the relative prevalence of individual disorders among different subgroups of participants is presented in Table 6.

Several differences emerged between those with PTSD only and those with PTSD and other comorbid disorders at the individual symptom level. Those participants with PTSD only reported a significantly lower percentage of flashbacks ($z = 4.37$, $p < .01$), loss of interest in pleasurable activities ($z = 3.04$, $p < .01$), irritability ($z = 2.77$, $p < .01$) and difficulty concentrating ($z = 3.17$, $p < .01$) than those with PTSD and any comorbid disorder. It is interesting to note that the PTSD only group also reported more numbing/restricted affect (75%) than any of the other diagnostic categories, including psychotic disorders (56%; $z = 4.11$, $p < .01$).

The ability of individual symptoms to distinguish between groups with other diagnoses and those with PTSD and comorbid disorders were found to display similar patterns to the overall findings. Detachment correctly classified the most cases when distinguishing between Substance Abuse without PTSD versus Substance abuse with comorbid PTSD, as well as between Other Anxiety Disorders without PTSD versus Anxiety Disorders with comorbid PTSD. Hypervigilance correctly classified the most cases when distinguishing between Mood Disorders without PTSD versus Mood Disorder with comorbid PTSD, as well as between Psychotic Disorders without PTSD versus Psychotic Disorders with comorbid PTSD.

Discussion

Researchers have yet to determine the relative prevalence of PTSD symptoms among different populations, and whether some symptoms are more likely to indicate the presence of PTSD than others. The results of this study suggest that although some symptoms were reported more frequently than others, among Vietnam veterans with PTSD, overall symptom endorsement was high, with no one symptom cluster more readily endorsed than others. Intrusive recollections and detachment from others emerged as the best overall predictors of current PTSD status and hypervigilance was the most frequently endorsed symptom among those with a past PTSD diagnosis, suggesting that hypervigilance may be more resistant to treatment or natural recovery processes. Symptoms that had the greatest specificity were nightmares and flashbacks, such that it was unlikely that a participant who did not meet full criteria for PTSD endorsed these symptoms. It may be helpful in a clinical setting to pay special attention to these symptoms, especially when assessments are brief or challenging. Furthermore, patterns of symptom endorsement showed little difference in the presence of co-occurring disorders. Symptoms that were reported most frequently among those with only PTSD were likewise reported most frequently among those with additional diagnoses, albeit at higher rates. Both detachment and hypervigilance symptoms were the most powerful at distinguishing between those with other conditions and those with PTSD and comorbid diagnoses. PTSD symptoms were also regularly endorsed by participants who met criteria for other disorders but not PTSD. This may be reflective of

[1] Sensitivity and specificity were computed using logistic regression analysis for presence or absence of a current diagnosis of PTSD, irrespective of comorbidity for two reasons: (a) this paper attempted to capture the symptom profile that would be representative of the general population in which comorbidity is the norm, and (b) of the 223 participants with a diagnosis of PTSD only 5 did not have a current diagnosis of PTSD, drastically reducing variability to the point that sensitivity and specificity are unable to be calculated.

Table 1
Current Symptoms (Percentage of Participants Who Endorsed Symptoms Within Each Group)

Symptom cluster	PTSD status			Sens	Spec
	Never (n = 338)	Past (n = 189)	Current (n = 798)		
Cluster B (Re-experiencing)					
Intrusive thoughts	9.8	31.2	82.3	.82	.82
Nightmares	4.9	17.2	67.0	.67	.90
Flashbacks	4.3	9.7	46.6	.46	.93
Psychological distress at exposure to cues	10.4	21.4	73.2	.72	.85
Cluster C (Avoidance and numbing)					
Avoidance of thoughts, feelings or conversations	15.6	32.3	75.0	.75	.79
Avoidance of activities or situations	15.8	29.2	64.9	.65	.80
Inability to recall important aspect of trauma	6.9	28.1	50.4	.50	.86
Diminished interest in activities	8.4	29.0	73.5	.74	.84
Detachment or estrangement	16.5	41.9	87.6	.88	.75
Restricted range of affect/Emotional numbing	9.6	28.6	75.5	.75	.84
Sense of a foreshortened future	8.4	24.7	64.3	.64	.86
Cluster D (Hyperarousal)					
Sleep difficulties	17.5	39.2	81.4	.81	.75
Anger/Irritability	12.8	20.5	68.6	.68	.84
Difficulty concentrating	11.3	18.9	67.4	.67	.86
Hypervigilance/Being on guard	21.9	44.0	87.7	.87	.71
Exaggerated startle/Jumpiness	21.1	32.4	79.4	.79	.75
Physiological reactivity at exposure to cues	8.9	20.1	71.4	.71	.87

Note. All between-group differences were significant at the $p < .001$ level. Sens = Sensitivity; Spec = Specificity.

individuals with subsyndromal levels of PTSD, or may be due to the fact that many symptoms of PTSD are not specific to PTSD per se. For instance, symptoms of avoidance, detachment from others, restricted range of affect, and sleep difficulties were most frequently endorsed by those with mood disorders only. Hypervigilance and sleep problems were most frequently endorsed among those with anxiety disorders or substance use disorders only. These results are consistent with factor analyses conducted in other veteran samples which found that some symptoms of PTSD may represent a general distress or dysphoria factor that is not specifically trauma-related (Simms, Watson, & Doebbelling, 2002).

Although these results are largely consistent with other studies conducted with other Vietnam veteran samples (Solomon et al., 2009), the present study expands upon previous work by examin-

Table 2
Comparison of Current Symptoms Between Mood and Comorbid PTSD Groups (Percentage Endorsing Each Symptom)

Symptom cluster	PTSD only (n = 230)	Mood (n = 48)	PTSD + mood (n = 317)	Sens	Spec	% Correct
Cluster B (Mean number of symptoms)	2.4	0.7	2.9			
Intrusive thoughts	78.6	23.4	86.7	.86	.73	84.6
Nightmares	62.2	12.8	71.4	.71	.87	73.2
Flashbacks	31.9	12.8	53.7	.53	.87	57.3
Psychological distress at exposure to cues	65.6	23.4	78.0	.78	.78	77.7
Cluster C (Mean number of symptoms)	4.6	2.0	5.1			
Avoidance of thoughts, feelings or conversations	71.3	31.1	78.8	.78	.67	76.3
Avoidance of activities or situations	61.3	37.8	65.0	.65	.64	64.8
Inability to recall important aspect of trauma	48.7	22.2	51.4	.51	.80	55.0
Diminished interest in activities	61.1	17.8	79.9	.80	.80	79.6
Detachment or estrangement	83.5	37.8	90.5	.90	.62	86.9
Restricted range of affect/Emotional numbing	74.7	37.8	76.8	.76	.60	74.0
Sense of a foreshortened future	61.1	26.7	69.1	.69	.76	69.6
Cluster D (Mean number of symptoms)	4.0	1.4	4.9			
Sleep difficulties	72.5	39.1	90.4	.90	.56	85.2
Anger/Irritability	59.1	23.9	76.2	.76	.73	75.7
Difficulty concentrating	55.7	17.8	77.7	.77	.80	77.9
Hypervigilance/Being on guard	82.1	29.5	92.4	.92	.67	88.5
Exaggerated startle/Jumpiness	74.7	26.7	83.7	.83	.71	81.3
Physiological reactivity at exposure to cues	61.6	15.6	79.0	.79	.82	79.1

Note. Sens = Sensitivity; Spec = Specificity; % Correct = Percentage correctly classified.

Table 3
Comparison of Current Symptoms Between Anxiety and Comorbid PTSD Groups (Percentage Endorsing Each Symptom)

Symptom cluster	PTSD only (n = 230)	Anxiety (n = 68)	PTSD + anxiety (n = 282)	Sens	Spec	% Correct
Cluster B (Mean number of symptoms)	2.4	0.5	2.9			
Intrusive thoughts	78.6	18.2	86.7	.86	.74	83.3
Nightmares	62.2	12.3	70.7	.69	.83	71.9
Flashbacks	31.9	7.6	57.2	.57	.89	62.9
Psychological distress at exposure to cues	65.6	9.1	77.9	.76	.86	78.4
Cluster C (Mean number of symptoms)	4.6	1.6	5.2			
Avoidance of thoughts, feelings or conversations	71.3	23.1	79.9	.79	.77	78.9
Avoidance of activities or situations	61.3	26.2	70.6	.71	.75	71.6
Inability to recall important aspect of trauma	48.7	15.4	53.6	.53	.82	58.5
Diminished interest in activities	61.1	15.4	81.7	.82	.83	82.2
Detachment or estrangement	83.5	32.3	91.4	.91	.71	87.4
Restricted range of affect/Emotional numbing	74.7	32.3	76.6	.76	.69	74.6
Sense of a foreshortened future	61.1	20.0	67.5	.68	.83	70.8
Cluster D (Mean number of symptoms)	4.0	1.6	4.8			
Sleep difficulties	72.5	35.4	87.1	.87	.60	81.6
Anger/Irritability	59.1	29.2	74.6	.74	.72	74.0
Difficulty concentrating	55.7	23.1	74.9	.75	.77	75.1
Hypervigilance/Being on guard	82.1	35.4	91.1	.91	.62	85.1
Exaggerated startle/Jumpiness	74.7	30.3	80.9	.80	.66	77.2
Physiological reactivity at exposure to cues	61.6	17.2	79.2	.78	.77	77.8

Note. Sens = Sensitivity; Spec = Specificity; % Correct = Percentage correctly classified.

ing the relative prevalence of PTSD symptoms among those with comorbid or other disorders. Contrary to our hypotheses, the presence of comorbid symptomatology simply amplified overall presentation of PTSD symptomatology, rather than changing the pattern of symptom distribution. Similarly, patterns also appeared to hold among those who never met or no longer met criteria for PTSD, suggesting that in this population, certain symptoms simply occur more frequently than others.

Compared with results of studies with other trauma survivors (e.g., female sexual assault survivors), we observed slight differences in specific symptom patterns. For instance, 67% of this sample reported nightmares, 50% reported amnesia for an important aspect of the trauma, and 64% indicated a sense of foreshortened future, rates higher than those reported by Foa and colleagues (1995). However, consistent with results of other studies (Marshall et al., 2006; Rasmussen et al., 2007) flashbacks were reported in just under 50% of the

Table 4
Comparison of Current Symptoms Between Substance and Comorbid PTSD Groups (Percentage Endorsing Each Symptom)

Symptom cluster	PTSD only (n = 230)	Substance (n = 106)	PTSD + substance (n = 212)	Sens	Spec	% Correct
Cluster B (Mean number of symptoms)	2.4	0.7	2.7			
Intrusive thoughts	78.6	26.2	79.5	.79	.74	77.0
Nightmares	62.2	15.5	65.9	.65	.84	71.7
Flashbacks	31.9	10.8	52.6	.52	.88	64.5
Psychological distress at exposure to cues	65.6	21.6	73.3	.73	.78	74.5
Cluster C (Mean number of symptoms)	4.6	1.6	4.9			
Avoidance of thoughts, feelings or conversations	71.3	24.0	73.9	.74	.76	74.5
Avoidance of activities or situations	61.3	27.7	65.2	.65	.74	68.6
Inability to recall important aspect of trauma	48.7	16.8	47.1	.47	.84	60.1
Diminished interest in activities	61.1	23.5	74.9	.75	.76	75.2
Detachment or estrangement	83.5	35.3	88.6	.89	.65	80.5
Restricted range of Affect/Emotional numbing	74.7	17.6	73.5	.74	.83	76.7
Sense of a foreshortened future	61.1	23.5	70.1	.70	.76	72.0
Cluster D (Mean number of symptoms)	4.0	1.5	4.6			
Sleep difficulties	72.5	40.0	80.1	.79	.61	73.0
Anger/Irritability	59.1	22.0	71.9	.71	.78	73.6
Difficulty concentrating	55.7	17.2	70.6	.71	.84	75.8
Hypervigilance/Being on guard	82.1	39.8	87.7	.88	.62	78.9
Exaggerated startle/Jumpiness	74.7	31.3	82.8	.82	.70	77.7
Physiological reactivity at exposure to cues	61.6	11.3	71.4	.71	.89	77.4

Note. Sens = Sensitivity; Spec = Specificity; % Correct = Percentage correctly classified.

Table 5
Comparison of Current Symptoms Between Psychotic and Comorbid PTSD Groups (Percentage Endorsing Each Symptom)

Symptom cluster	PTSD only (n = 230)	Psychotic (n = 60)	PTSD + psychotic (n = 56)	Sens	Spec	% Correct
Cluster B (Mean number of symptoms)	2.4	2.3	3.1			
Intrusive thoughts	78.6	76.7	87.5	.88	.67	82.4
Nightmares	62.2	56.7	81.8	.80	.89	82.4
Flashbacks	31.9	42.4	66.1	.66	.89	71.6
Psychological distress at exposure to cues	65.6	56.7	73.2	.73	.78	74.3
Cluster C (Mean number of symptoms)	4.6	4.2	5.1			
Avoidance of thoughts, feelings or conversations	71.3	56.7	80.4	.80	.78	79.7
Avoidance of activities or situations	61.3	61.7	67.3	.66	.61	64.9
Inability to recall important aspect of trauma	48.7	49.2	44.6	.45	.67	50.0
Diminished interest in activities	61.1	61.7	81.8	.80	.83	81.1
Detachment or estrangement	83.5	76.7	91.1	.91	.50	81.1
Restricted range of Affect/Emotional numbing	74.7	55.9	82.1	.82	.78	81.1
Sense of a foreshortened future	61.1	60.0	67.9	.68	.61	66.2
Cluster D (Mean number of symptoms)	4.0	4.2	5.0			
Sleep difficulties	72.5	80.0	89.3	.89	.44	78.4
Anger/Irritability	59.1	61.7	82.1	.82	.67	78.4
Difficulty concentrating	55.7	71.2	83.9	.84	.50	75.7
Hypervigilance/Being on guard	82.1	78.3	92.9	.93	.56	83.8
Exaggerated startle/Jumpiness	74.7	66.7	78.6	.79	.61	74.3
Physiological reactivity at exposure to cues	61.6	67.8	73.2	.73	.72	73.0

Note. Sens = Sensitivity; Spec = Specificity; % Correct = Percentage correctly classified.

sample, suggesting that clinical heuristics regarding symptom base rates may underestimate the prevalence of certain symptoms and that in severely traumatized populations, symptom presentation may be severe, with endorsement of many symptoms of PTSD.

To date, no study that we know of has examined the distribution of symptoms in such a large sample of combat veterans. Replicating results of previous studies in this fashion enabled us to add to the literature, which will continue to measure similarities and differences in symptom distributions among different populations.

Table 6
Percentage of Participants With Comorbid Disorders by Group

Disorder	PTSD + comorbid group	Non-PTSD disordered group
	PTSD + mood	Mood only
MDD	86	72
Bipolar disorder	12	26
	PTSD + anxiety	Anxiety only
Panic disorder	25	8
Social phobia	24	31
Simple phobia	15	30
OCD	14	7
GAD	11	15
	PTSD + substance	Substance only
Alcohol abuse	48	59
Cannabis abuse	19	13
Cocaine abuse	13	15
	PTSD + psychotic	Psychotic only
Psychotic disorder NOS	56	29
Delusional disorder	19	29
Schizoaffective disorder	12	25

Note. MDD = Major Depressive Disorder; OCD = Obsessive Compulsive Disorder; GAD = Generalized Anxiety Disorder; NOS = Not Otherwise Specified.

Extending previous research to examine PTSD symptom distributions among those with different kinds of comorbidity enabled us to assess patterns that had yet to be examined. Other strengths of the current study include the use of a treatment-seeking population and assessment by structured clinical interview. These features give us greater confidence that the patterns observed are good approximations of the population being studied and can be generalized to other treatment-seeking veterans.

Nonetheless, there are limitations to the present study, which suggest some caution in interpreting these results: our design was correlational in nature and precluded longitudinal follow-up. For that reason, especially results concerning the course of PTSD should be interpreted carefully. The sample also included only male veterans and was largely racially homogenous, which may limit generalizability to females, civilians, and minority veterans. The size of the present sample also necessitated the merging of disorders into larger diagnostic categories, limiting conclusions regarding individual disorders, particularly among the more heterogeneous category of Anxiety Disorders.

With the likely revision of diagnostic criteria in the upcoming edition of the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-5*), further close examination of PTSD symptomatology is especially germane at this juncture; issues relating to psychiatric comorbidity have been raised in this context. Specifically, some researchers have proposed models based on the latent structure of psychiatric comorbidity (Krueger, 1999; Krueger & Markon, 2006) that suggest basic divisions in pathology along internalizing-externalizing dimensions, followed by subdivision of the internalizing cluster into distress (or anxious-misery) and fear subgroups. Early research in this area has provided support for such models. Although PTSD was absent from initial formulations of this model, subsequent research (Cox, Clara, & Enns, 2002) found that PTSD loaded on the anxious-misery factor, which is comprised mostly of mood disorders, rather than the fear factor that consists of anxiety disorders. Our

results are not consistent with these findings; we observed similar profiles among all comorbid groups, as well as similar patterns of PTSD symptom endorsement among all groups. Although not significantly different, we observed a trend toward higher levels of endorsement of hyperarousal symptoms, which may provide limited support for the current nosological system, in which PTSD is grouped with the anxiety disorders. It is also worth noting, however, that in this population of trauma-exposed veterans, symptoms of PTSD were present in large proportions in subgroups that did not meet criteria for PTSD, underscoring the fact that comorbidity is the norm in clinical populations and that many symptoms of PTSD are not specific to one clinical syndrome.

Clinically, important issues involved in diagnostic assessment and the longitudinal course of PTSD are also raised by these results. These results highlight the fact that more than 3 decades after the traumatic event, many treatment-seeking veterans of the Vietnam War continue to exhibit important symptoms of PTSD. Even those who never met or no longer met full diagnostic criteria continued to exhibit subthreshold or residual symptoms of PTSD, which have been linked to ongoing functional impairment (Zlotnick, Franklin, & Zimmerman, 2002). Attention ought to be paid to these symptoms, especially when they occur in the context of a comorbid presentation in which PTSD is not the primary concern, as they may be easily overlooked. For this reason it is good clinical practice to assess lifetime history of exposure to potentially traumatic events (especially among those populations at high risk for such exposure). Furthermore, it may be useful clinically to note that comorbidity may not result in a specific profile of PTSD symptoms; rather, the effects are simply to augment the overall level of symptomatology. This suggests that one route to reducing PTSD symptoms could be to target comorbid disorders that may be more amenable to treatment. Such an approach may be especially useful for patients who are not ready for trauma-focused work.

One unexpected result of this study is the striking similarity in PTSD symptom severity and distribution between those with PTSD only and those with a psychotic disorder only. Both groups showed similar patterns of symptom distribution and endorsed similar numbers of symptoms in each cluster, though individuals with psychosis only did not endorse the prescribed number of symptoms in each cluster to achieve the diagnosis. Surprisingly, more veterans with PTSD endorsed a restricted range of affect than veterans with psychotic disorders, which may speak to the importance of numbing in PTSD. That is, numbing may be as much a hallmark of the disorder as intrusions, and proposals to make numbing symptoms more prominent (e.g., creating a separate numbing cluster) may be warranted.

In conclusion, this study adds to the body of data regarding symptom distribution and the relative importance of individual symptoms in the prediction of an overall diagnosis. Overall, taking these results in the context of other studies, it appears that symptom distribution varies across different target populations, and more research in this area is essential to a full understanding of trauma and its consequences.

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