Posttraumatic Stress Disorder: DSM-IV and Beyond

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Note: The authors have worked to ensure that all information in the book concerning drug dosages, schedules, and routes of administration is accurate as of the time of publication and consistent with standards set by the U.S. Food and Drug Administration and the general medical community. As medical research and practice advance, however, therapeutic standards may change. For this reason and because human and mechanical errors sometimes occur, we recommend that readers follow the advice of a physician who is directly involved in their care or the care of a member of their family.

This book covers many major issues regarding PTSD but does not address other important topics (e.g., treatment or cross-cultural aspects of the disorder). Also, this book should not be construed as an extended DSM report on PTSD, nor will all of its recommendations be incorporated into the DSM-IV manual. Such decisions are based on the consideration of many factors, some of which are beyond the scope of this book. The views expressed here are those of the authors and do not represent the official positions of the DSM-IV Task Force, the American Psychiatric Press, or the American Psychiatric Association.

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◆ 6 ◆ Symptomatology of Vietnam Veterans With Posttraumatic Stress Disorder

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Summary This chapter assesses the adequacy of current criteria for posttraumatic stress disorder (PTSD) in a population of Vietnam combat veterans. To do so, the author focused on reliability of factor structure and internal consistency of the symptoms. The method of clinical evaluation is described, as are the two main dependent measures used. Factors were obtained on both scales that broadly support the conceptualization of PTSD in DSM-III-R (American Psychiatric Association 1987), and good internal cohesiveness was established. These findings are related to other studies and limitations are described, such as choice of population and absence of possibly relevant symptoms.

Statement of the Issue

The diagnostic criteria for PTSD were introduced into the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-III) in 1980 (American Psychiatric Association 1980). Although the psychological symptoms of traumatic syndromes were included in the DSM-I (American Psychiatric Association 1952) under the rubric of traumatic neuroses, the DSM-II (American Psychiatric Association 1968) omitted such a disorder, preferring to categorize these reactions as transient situational disturbances or gross stress reactions. In the 1960s and 1970s, with the appearance of large numbers of returning Vietnam veterans at public health facilities and veterans medical centers, there was increasing recognition by mental health

providers of the symptom constellation that constitutes PTSD as it is now defined. This recognition resulted in the creation of the PTSD diagnostic category for inclusion in the DSM-III. Specifying the criteria was a difficult task for the group of experts assembled for this purpose, because little research existed on the topic of interest. Consequently, the group relied for completion of their task on the many phenomenological and descriptive studies that appeared in the clinical literature describing the aftermath of war, disasters, the Holocaust, and other extreme stressors.

Inclusion of PTSD in the Anxiety Disorders category was consistent with the belief of the majority of experts that a specific stressor was etiologically responsible for the appearance of the disorder and that anxiety was the preeminent symptom associated with a traumatic response. This categorization of PTSD as an anxiety disorder has been somewhat controversial because of the emerging recognition of depression and dissociation as important components of the diagnostic picture of individuals who have been traumatized.

The most recent revision of the DSM, DSM-III-R, essentially agreed that the basic symptoms associated with the disorder should remain relatively intact from one version to the next, although the experts preferred to employ a theoretically driven model for enunciating the PTSD symptoms. Brett and Ostroff (1985) presented a theoretical formulation of PTSD that had its origins in psychoanalytic theory. Positing a bidimensional phenomenology of PTSD that incorporated both intrusive and reliving symptoms, coexisting or alternating with numbing or avoidant symptoms, this model was adopted as the framework for structuring the symptom criteria.

In addition to the use of theory to assist in the specification of DSM criteria, the DSM-III workgroup also examined the available data in order to assist in the process. As a function of numerous published studies regarding the importance of psychophysiological arousal to the PTSD symptomatology (Blanchard et al. 1982; Malloy et al. 1983), a separate set of criteria emphasizing an arousal dimension was included in the revision. Specifically included was a criterion stating that PTSD patients were hyperreactive to cues reminiscent of the trauma as well as numerous signs and symptoms of autonomic arousal (e.g., startle response, sleep disturbance, hypervigilance). In addition, Zimering and colleagues (1984) in directly assessing the presence of the DSM-III criteria for PTSD in patients and controls found that patients with PTSD had a distinct and noticeable deficit in their con-

centration, while memory per se remained intact. This study resulted in a change in the criteria from memory defects (DSM-III) to concentration impairment (DSM-III-R) as being optimally descriptive of the abnormal process. The DSM-III-R, then, was a result of both theoretical and empirical advances in the study of this disorder.

This combination of factors was a significant improvement upon the atheoretical and unempirical effort undertaken by the original DSM-III group, although clearly theories and data were minimal at the time of their initial work. The preliminary empirical research on PTSD was stimulated by the Veterans Administration in an attempt to help in the readjustment of the millions of soldiers returning from Vietnam and it was this work on combat veterans that supplied much of the data on which the DSM-III-R was based (Blanchard et al. 1982; Egendorf et al. 1981; Keane et al. 1984; Malloy et al. 1983). The theoretical paper by Brett and Ostroff (1985), on which the committee heavily relied, was also a product of research on combat veterans. Although there is greater balance in the literature today, combat and the consequences of war stress remain the topics receiving the greatest attention in the mental health literature on PTSD. For this reason, my discussion in this chapter devotes analytical effort to the data collected on combat veterans with a diagnosis of PTSD.

The issue to be addressed in this chapter is the adequacy of the current diagnostic criteria (DSM-III-R) for combat veterans with PTSD. To examine this issue, data from Vietnam veterans at the Boston PTSD Center are described.

To address the adequacy of the diagnostic criteria for PTSD, I decided to focus on the reliability of the symptomatology, the factor structure of tools constructed to measure PTSD by the DSM-III-R criteria, and the internal consistency of symptom measures in patients who were diagnosed with PTSD. This would provide information on whether the criteria seem to measure a unitary or multiphasic process of psychopathology and if the dimensions identified are strongly related conceptually.

Method

Subjects

All subjects evaluated at the Boston PTSD Center and given the PTSD diagnosis according to DSM-III-R criteria were included in this study. Sub-

jects who received a PTSD diagnosis were included in the current study, although this constituted only 77% of the total assessments completed over the 2-year period. Data from a total of 68 patients were analyzed. The mean age of the subjects at the time of assessment was 37 years, and the mean educational level was nearly 13 years. Eighty percent of the subjects were white, and 20% were members of minority groups.

Diagnostic Measures

To be included in the current study, subjects were evaluated by doctoral-level clinicians in the following manner. Clinicians administered the Jackson Structured Interview for PTSD (Keane et al. 1985) to all subjects. This interview includes demographic information as well as premilitary, military, and postmilitary histories of psychological and social functioning. The Combat Exposure Scale (Keane et al. 1989) provided a subjective estimate of the amount of combat the individual had seen (i.e., trauma exposure). The Minnesota Multiphasic Personality Inventory (MMPI; Hathaway and McKinley 1989) and its PTSD subscale (Keane et al. 1984) and a battery of psychometric scales measuring anxiety (Spielberger State-Trait Anxiety Inventories; Spielberger et al. 1970) and depression (Beck Depression Inventory [BDI]—Beck et al. 1961; Zung 1965) were complemented by the Weissman and Bothwell (1978) Social Adjustment Scale.

To measure PTSD symptoms more directly, the Mississippi Scale for Combat-related PTSD (Keane et al. 1988) was administered; this instrument was keyed to both DSM-III and DSM-III-R criteria and associated features. Next, each subject was given the Structured Clinical Interview for DSM-III-R (SCID; Spitzer and Williams 1985), an interview that covers comprehensively the DSM-III-R criteria for the disorder. For 80% ($n = 54$) of the subjects, a psychophysiological assessment procedure was administered to provide an evaluation of the patients' psychophysiological reactivity to cues symbolic of their combat experience. These results are not presented here.

To arrive at an individual patient's diagnosis, a senior staff meeting was held. This meeting was regularly attended by eight doctoral-level clinical psychologists and the Center's psychiatrist. Presentations incorporated information about the patient's background, history, course of disorder, and presenting symptoms. Data from the psychometrics and the psychophysio-

logical assessment were also included in the presentation. Case formulation, diagnostic considerations, and treatment recommendations composed the objectives for each patient. Axis I and Axis II diagnoses were conferred when appropriate. If all diagnostic indicators were in agreement, consensus diagnosis was readily achieved. In those cases where the indicators disagreed, the team would discuss the case to arrive at the diagnoses that were deemed most appropriate by consensus.

Evaluation of Instrumentation

For purposes of this project, the instruments to be examined were those instruments most closely aligned with the DSM-III-R criteria. The SCID having been developed directly from the DSM-III-R criteria and the Mississippi Scale having been keyed to the DSM-III and DSM-III-R, these two instruments were the ones selected for evaluation. It was hypothesized that the diagnostic criteria were appropriate if the psychometric properties of these two instruments were strong.

To assess the psychometric properties of these instruments the following analyses were conducted: 1) Cronbach's alpha coefficient, 2) item–total score mean correlation, and 3) a principal components analysis. In addition, the mean ratings for the Mississippi Scale items were examined to determine the relative frequency for which the items that represent DSM-III-R criteria were endorsed by PTSD patients.

Results

Structured Clinical Interview for DSM-III-R

A principal components analysis was conducted on the 15 variables that compose the B through D symptoms of the PTSD diagnosis. Table 6–1 presents information on the items loading on each factor. Factors were identified as those with eigenvalues greater than 1.0 following a varimax rotation. Inspection of a scree plot yielded an array of four factors that most adequately described the variables examined. An item had to load at .50 to be considered part of a characterized factor. For the SCID, factor 1 describes intrusive experiences, reliving experiences, restriction of affect, and hypervigilance. Factor 2 includes items pertaining to reactivity,

Table 6–1. Items composing each factor of the principal components analysis of the Structural Clinical Interview for DSM-III-R

Factor 1

1. Recurrent nightmares of the event
2. Sudden acting or feeling as if the vent were recurring
3. Restricted range of affect
4. Hypervigilance

Factor 2

1. Physiological reactivity or intense distress at exposure to events that resemble the trauma
2. Deliberate effects to avoid activities or situations that resemble the trauma
3. Exaggerated startle responses

Factor 3

1. Irritability or outbursts of anger
2. Concentration difficulties

Factor 4

1. Markedly diminished interest in significant activities
2. Feelings of detachment or estrangement

avoidance, and startle. Included in factor 3 are two Criterion D stimuli, irritability and concentration impairment. Factor 4 includes two items from Criterion C in that it contains a markedly diminished interest in activities and also feelings of detachment or estrangement. These factors are generally supportive of the conceptual model that drove the DSM-III-R in that reliving, avoidance, and arousal symptoms seemed to cluster together for PTSD patients. This was true irrespective of the range of possible scores (1 to 3) for each symptom and the relatively small number of subjects (68). The restricted range of affect loaded on the same factor as reliving items and as such might be considered a part of (or a function of) the intrusive memories of trauma.

Cronbach's alpha coefficient was calculated to be .93 for all 15 symptoms assessed by the SCID, indicating a high propensity for the DSM-III-R criteria to operate interdependently. It is also an indication of high reliability of items across the many subjects. In many respects the items appear to measure a unitary dimension of disorder across all symptom areas.

Item–total score correlations averaged .70 with a range of scores extending from .54 to .85. This indicates that for subjects each item on the SCID rating scale is related in an acceptable way to the overall score provided by summing scores on all symptoms.

Mississippi Scale for Combat-Related PTSD

The principal components analysis for the Mississippi Scale was conducted on the 35 items of the scale. The same method of analysis was ap-

plied here as for the SCID analysis with factors extracted with eigenvalues greater than one. A varimax rotation was employed. Items were considered part of a factor if they loaded with a score of .50 or greater. Examination of a scree plot yielded a four factor solution as optimal. Table 6–2 presents information on the items included in each of the factors.

Factor 1 includes 9 items that clearly reflect reexperiencing phenomena, daydreams, nightmares, and other forms of reliving of the traumatic event. It supports the position of including as reexperiencing those symptoms that represent distress at exposure to events symbolic of the trauma. Factor 2 included a preponderance of items reflecting numbing and restriction of affect with a concomitant use of anger and irritability to dispel these numb feelings.

Factor 3 centers on problems with impulse control or problems in acting out destructive impulses, while factor 4 includes items that reflect on inability to concentrate on or enjoy activities or people in one's life.

Thus, these factors represent the symptom picture of reliving experiences, numbing of affect, impulse control deficits, and cognitive and emotional effectiveness. Their overlap with the DSM-III-R criteria is acceptable although not exact. Many of the arousal symptoms are seen as associated with the reliving, intrusive recollections of the traumatic event. This factor structure is certainly a reasonable framework for viewing the consequences of traumatic experiences.

Cronbach's alpha coefficient was found to be .89 indicating excellent in-

Table 6–2. Items composing the four factors of the Mississippi Scale derived from the principal components analysis

Factor 1	3. Irritability and anger
1. Distress at exposure to events reminiscent of the trauma	4. Arousal, vigilance
2. Nightmares	5. Expression of feelings difficult
3. Intrusive thoughts	**Factor 3**
4. Survivor guilt	1. Violence and aggression
5. Reliving experiences	2. Suicide
6. Daydreams	3. Frightening urges
7. Alienation/detachment	**Factor 4**
Factor 2	1. Diminished interest in significant activities
1. Numbing/avoidance	2. Concentration impairment
2. Restricted affect	3. Alienation/estrangement from others

ternal stability of the items comprising the Mississippi Scale and again potentially indicating a unified dimension of psychopathology subsumed by the many items included in the scale. The mean item–total score correlation was found to be .47, indicating an acceptable range of the contribution of individual items to the overall performance of the scale.

Examination of subjects' performance on individual items of the Mississippi Scale was accomplished in two ways: those items with the highest endorsements of subjects on average and those items with the lowest mean endorsements by subjects. Table 6–3 contains those items that received an average greater than 4 on the 5-point Likert Scale as well as those items that received a mean lower than 3 on the 5-point scale.

Discussion

The psychometric analyses on the PTSD criteria from the SCID and the items on the Mississippi Scale provide reasonable support for the current classification scheme. Highlights of the clustering of items suggest that reliving/intrusive phenomena, restricted emotions and numbing, physical reactivity and concomitant avoidance, and diminished interest in activities and in other people are relatively independent factors and compose different dimensions of the disorder. This closely resembles what was intended by the DSM-III-R committee.

The finding that each of the two scales of PTSD, one clinician rated and the other patient self-administered, yielded somewhat similar dimensions of the disorder provides support for the multidimensional notion of the disorder. The high coefficient alphas for each of the scales indicates that the items do seem to be reliably measuring a unitary concept such as PTSD,

Table 6–3. Items on the Mississippi Scale that are most strongly endorsed and least strongly endorsed by PTSD subjects

Items with an average > 4.0

1. Detachment/estrangement from others
2. Anger and aggression control
3. Distress at exposure to events that symbolize the trauma
4. Sleep disturbance
5. Survivor guilt
6. Vocational, interpersonal detachment
7. Startle response
8. Alcohol/drug use
9. Hypervigilance

Items with an average < 3.0

1. Suicide
2. Depression (crying spells)

despite the presence of multiple dimensions or factors. The moderate to high scores on the individual item–total score analyses supports the relative contributions of the items to the overall diagnostic scores. This supports continued inclusion of these items in our attempts to measure the PTSD construct.

The items on the Mississippi Scale that were least frequently endorsed by PTSD patients consisted of suicide and the presence of crying spells. There may be value in maintaining the suicide item as a low-frequency but highly important assessment question. The questions regarding crying spells and suicide may also help discriminate PTSD with its many depressive features from a major depression. This distinction has been discussed in many conceptual articles and also in empirical studies and should continue to be an important arena for research. Because neither symptom is considered a criterion for the disorder, criterion change is not necessary as a result of these findings.

In conclusion, the current study employed well-defined patients with combat-related PTSD. Their responses to questions regarding the DSM-III-R diagnostic criteria for PTSD demonstrate that the symptomatology does indeed capture much of their psychological and interpersonal experiences. These data do not, however, provide firm support for the idea that these are the only symptoms that might be related to PTSD. Nor do they provide support for the notion that these symptoms discriminate PTSD from other psychological disorders in the most parsimonious way.

Conclusion

The results of this project provide support for the findings of other studies that used combat veterans as subjects. Silver and Iaconno (1984) factor analyzed a scale that was locally developed to assess the symptoms of undiagnosed combat veterans. Their findings were similar in that they found factors of reliving/intrusiveness, depression, anger and irritability, and interpersonal detachment. They advocated the inclusion of depression and anger as central components of PTSD. Although they were correct in their indications that PTSD incorporates depressive symptomatology, anger, irritability, and often rage, it seems likely that these symptoms, though frequently present among PTSD patients, may not provide any incremental discriminability of PTSD from other disorders such as affective disor-

ders, antisocial personality disorder, other personality disorders, and adjustment disorders.

In a similar study, Watson and colleagues (1991) developed a PTSD Inventory, administered it to 131 Vietnam veterans, and factor analyzed it to determine how symptoms clustered together for those patients who reached the criteria for PTSD. In this study, a PTSD diagnosis was dependent exclusively on patients' scores on this instrument. The interview composed items taken directly from the DSM-III criterion for PTSD. The results of the study indicated support for Brett and Ostroff's conceptualization of PTSD (1985), arriving at five factors to describe the interrelated dimensions of disorder. The greatest point of overlap with the current study was in the strong relationship of traumalike stimuli worsening symptoms overlapping with intrusive thoughts and reliving experiences. Both my discussion here and the study of Watson and colleagues would posit a reconsideration of the placement of that particular criterion. The original validational study of the Mississippi Scale also supports this specific finding (Keane et al. 1988).

Watson and colleagues (1991) also found strong support for a separate dimension for detachment, constricted affect, and numbing to intimacy (Factor 3). These results bolster the inclusion of these symptoms as a potentially separate dimension among combat veterans.

Concerns About the Process Involved in Statistical Approaches to Diagnosis

Considerable attention was given to the possible use of the National Vietnam Veterans Readjustment Study (NVVRS; Kulka et al. 1990) data set to help in the process described here. Many issues arose in the discussions with the NVVRS investigators that prompted us not to use that data set because of the expense involved and our inability to unravel some crucial issues. Our concerns may be useful to the group as a whole and can be summarized as follows:

1. To properly evaluate what symptoms are associated with PTSD, the whole domain of possible symptoms should be sampled so that important ones are not unintentionally overlooked. Unfortunately, in the Boston PTSD Center and in the NVVRS, the clear focus was on sampling symptoms thought to be associated with PTSD on an a priori basis. This

limitation affects our capacity to be sure we have evaluated all possible symptoms that might serve as criteria.

2. The population in the NVVRS was non-help-seeking, and it was unclear to all involved that symptoms expressed by this group of individuals would be representative of those who are help-seeking. Does seeking help have a role to play in determining disorder? Does current social, vocational, interpersonal functioning play a role in determining disorder?
3. The question of who has the disorder was intensely discussed. There is considerable circularity in the notion that those people who should be studied are those that have the disorder, because this presumes that the current criteria are accurate (valid) and can serve to guide us in a statistical or otherwise meaningful way. For example, should patients or subjects not be studied if they meet DSM-III-R Criteria A, B, D, and E, but do not meet the numbing criterion, C? This problem of circularity creates considerable confusion when trying to arrive at any sensible method for studying PTSD.
4. The problem of considering PTSD as a continuous variable versus a dichotomous one is a related concern. Many would state that the disorder is either present or absent, when it is most reasonable from our instrumentation to consider PTSD as a continuous variable. Yet the DSM calls for artificially considering PTSD (and most other disorders) as a dichotomy. To arrive at such trenchant distinctions among the disorders and among symptom criteria is probably premature given the available technology for measurement.

With so many of the patients with PTSD also meeting criteria for other disorders (Keane and Wolfe 1990) it is unclear which symptoms are central to PTSD and which ones are secondary to the presence of other disorders. This problem is especially difficult, because lifetime substance abuse is associated with PTSD in 60–80% of the cases.

In summary, the presence of these problems renders many data sets unusable for the purpose of studying diagnostic criteria. Major data sets are frequently constructed surrounding extant diagnostic criteria. This problem renders these sets inadequate for purposes of elucidating diagnostic criteria, because bias has already been introduced by the choice of measures. The difficulty of who to study is also an important issue. If only patients

who meet diagnostic criteria are included in these studies, then the bias in favor of preexisting criteria is obvious. Should we decide to open the gates to a broader subject population, then we are, de facto, considering the disorder as a continuous variable. This would not be satisfactory to many investigators or clinicians.

Finally, it is important to consider what defines disorder and also what symptoms should be included in the criteria. Is disorder help-seeking? This is certainly inadequate. Is disorder functional impairment (vocational or otherwise)? This also presents a morass for investigators.

Although the approach taken in this chapter has been a statistical one, it has some serious limitations that need to be stated forthrightly. Subject selection, sampling of the measures of the construct, the debate over what should be included in diagnostic criteria, and the discussion of how we should define disorder all contribute to ambivalence in making any strong recommendations for changing the diagnostic criteria for PTSD at this time.

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