# The Effect of Draft DSM-5 Criteria on Posttraumatic Stress Disorder Prevalence

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## Abstract

**Background**—This study was designed to examine the concordance of proposed DSM-5 posttraumatic stress disorder (PTSD) criteria with DSM-IV classification rules and examine the impact of the proposed DSM-5 PTSD criteria on prevalence.

**Method**—The sample (N=185) included participants who were recruited for studies focused on trauma and health conducted at an academic medical center and VA medical center in the southeastern United States. The prevalence and concordance between DSM-IV and the proposed DSM-5 classifications were calculated based on results from structured clinical interviews. Prevalence rates and diagnostic efficiency indices including sensitivity, specificity, area under the curve (AUC), and Kappa were calculated for each of the possible ways to define DSM-5 PTSD.

**Results**—Ninety-five percent of the sample reported an event that met both DSM-IV PTSD Criterion A1 and A2, but only 89% reported a trauma that met Criterion A on DSM-5. Results examining concordance between DSM-IV and DSM-5 algorithms indicated that several of the algorithms had AUCs above .90. The requirement of two symptoms from both Clusters D and E provided strong concordance to DSM-IV (AUC = .93; Kappa = .86) and a greater balance between sensitivity and specificity than requiring three symptoms in both Clusters D and E.

**Conclusions**—Despite several significant changes to the diagnostic criteria for PTSD for DSM-5, several possible classification rules provided good concordance with DSM-IV. The magnitude of the impact of DSM-5 decision rules on prevalence will be largely affected by the DSM-IV PTSD base rate in the population of interest.

### Keywords

posttraumatic stress disorder; PTSD; DSM-V; DSM-IV; diagnostic criteria; syndromes

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The diagnosis of posttraumatic stress disorder (PTSD) has been controversial since its initial inclusion in the third edition of the American Psychiatric Association's (APA) Diagnostic and Statistical Manual of Mental Disorders. While questions remain over the distinctiveness of PTSD as a unique clinical syndrome (1), options to revise the DSM-IV PTSD criteria have been made public as part of the DSM-5 publication process (2–3). Several significant

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changes to the current DSM-IV PTSD criteria have been proposed including (a) the alteration of the stressor criterion (DSM-IV PTSD criterion A1 and A2); (b) the addition of three new symptoms, increasing the symptom total from 17 to 20; and (c) replacing the current three-factor model of PTSD (i.e., Cluster B re-experiencing symptoms, Cluster C, avoidance/numbing symptoms, and Cluster D, hyperarousal symptoms) with a four-factor model consisting of (B) intrusion symptoms, (C) persistent avoidance, (D) alterations in cognitions and mood, and (E) hyperarousal and reactivity symptoms.

Table 1 provides a comparison of DSM-IV criteria with the proposed DSM-5 criteria. In the review cited by the DSM-5 committee for the rationale for the proposed changes, Friedman, Resick, Bryant, and Brewin (4) noted that the workgroup concluded exposure to a traumatic event is a necessary condition that precedes the development of PTSD and thus the stressor criterion (DSM-IV A1) has been retained. The workgroup provided a definition of a traumatic event that was intended to explain the stressor more clearly. For example, indirect exposure through witnessing a traumatic event must occur in person in order to count as a Criterion A event (i.e., exposure to events through electronic media would be excluded). Further, indirect exposure to learning about a loved one's traumatic event has been clarified to include learning about violent or accidental death/injury or sexual assault. Thus, learning the details of a natural death or illness of a loved one would not be considered a Criterion A event in DSM-5. DSM-IV PTSD Criterion A2 (the experience of fear, helplessness, or horror in response to the A1 event) has been omitted based on the rationale that it does not appear to have a major bearing on improving diagnostic accuracy (1).

In addition to changes in Criterion A, several changes have been proposed to PTSD symptom criteria. While 14 of the previous DSM-IV symptoms remain relatively unchanged, three symptoms were significantly revised including DSM-IV B1 (intrusive recollections), C7 (sense of foreshortened future), and D2 (irritability and anger). Thoughts or ruminations about the traumatic event have been eliminated from Criterion B1 in order to emphasize the involuntary and intrusive distressing memories of the event. The focus of DSM-IV D2 (irritability and anger) has been revised to focus on irritable, angry, or aggressive behavior and is now included as DSM-5 E1. Perhaps the most significant revision of current symptoms, DSM-IV symptom C7, a sense of foreshortened future, has been expanded to include persistent negative expectations regarding many aspects of life rather than just a narrow focus on negative expectations about one's lifespan and is included as DSM-5 D2.

As shown in Table 1, DSM-IV Criterion C (avoidance and numbing) symptoms have been divided into two separate criteria for DSM-5 where Criterion C includes two symptoms of active avoidance while Criterion D includes seven symptoms of "negative alterations in cognition and mood." Hyperarousal symptoms are now included in DSM-5 Criterion E. Three new symptoms are proposed, including 1) pervasive distorted blame of self or others about the cause or consequences of the trauma (DSM-5 D3); 2) pervasive negative emotional states (DSM-5 D4); and 3) reckless or self-destructive behavior (DSM-5 E2). While it is currently suggested that three symptoms must be endorsed in order to meet DSM-5 Criterion D and E respectively (3) the DSM-5 workgroup has noted that the optimal number of symptoms required for Criterion D and E will be further evaluated using empirical data.

There is enormous interest in the effect that the proposed DSM-5 criteria will have on the prevalence of the disorder. To date, there have been little published data that have addressed the impact that the proposed DSM-5 criteria will have on prevalence rates among civilian or veteran samples. Two studies examining the impact of requiring both active avoidance and numbing symptoms separately suggest a decrease in PTSD prevalence by 1–2% points

based on data collected using existing DSM-IV criteria (5–6). Limited self-report data from a recent web-survey among a non-clinical population of college students, however, suggested that the changes associated with DSM-5 resulted in a slight increase in the observed prevalence rate (7).

To date, no published studies have examined the optimal number of symptoms required for Criterion D and E or have reported diagnostic efficiency indices comparing DSM-IV to DSM-5 algorithms. It is important to note that the potential impact of any differences between DSM-IV and DSM-5 diagnostic classification systems on prevalence rates will be in part a function of the base-rate of PTSD in the sample population (8). Classification methods are most efficient when tested in a sample with an actual 50% prevalence of the disorder (8–9) and operating characteristics will be affected when the "true," or in this case the DSM-IV based, sample population prevalence diverges from 50%.

The current study was designed to examine the concordance of DSM-5 criteria with DSM-IV classification rules and examine the impact of the proposed DSM-5 criteria on the prevalence of PTSD among a volunteer sample of adults who were recruited to studies focused on trauma and health. In a methodological advance to previous work exploring the potential impact of DSM-5 PTSD criteria, the current study based diagnostic decisions on the results of structured clinical interviews. It should be noted, however, that this study was not part of the DSM-5 field trials. The clinical interview methods used in official DSM-5 field trials may differ from those in the current study.

## Materials and Methods

### Sample

The sample included 185 participants who were recruited for studies focused on trauma and health conducted at an academic medical center and VA medical center in the southeastern United States between January 2010 and February 2012. Inclusion criteria for the current analysis included English speaking adults aged 18 or over who completed the measures described below and who had consented to allow their research data be included in a trauma database containing demographic, diagnostic, and other data obtained across multiple studies. After complete description of each parent study and the trauma database to the participants, written informed consent was obtained. The affiliated Institutional Review Boards approved all study procedures.

### Measures

**Demographics—**Information about age, gender, ethnicity, education, military service, and employment was collected. Level of education and current occupation was summarized as an overall measure of socioeconomic status in the Hollingshead Index score (10). Lower scores on the Hollingshead Index indicate higher socioeconomic status (SES).

**Traumatic Life Events Questionnaire (TLEQ—**Trauma exposure was first measured with the TLEQ (11), a 22-item questionnaire designed to assess exposure and response to traumatic events. Participants are asked to indicate the event that has caused them the most distress. Initial studies have demonstrated content validity and reliability of this measure (11–13).

**Clinician Administered PTSD Scale (CAPS—**All participants were evaluated for the presence of DSM-IV based PTSD using the CAPS (14), a structured clinical interview that evaluates the frequency and intensity of the seventeen symptoms of PTSD as defined in the DSM-IV. Presence of each symptom was determined using the frequency $\geq$ 1/intensity $\geq$ 2

rule (14–15); which requires a symptom to be endorsed at a frequency of at least once per month and intensity of at least moderate impairment or distress to be counted as present. The CAPS interview has excellent reliability and validity within multiple trauma populations and is widely accepted as the state of the art method for PTSD assessment (15–16). Fourteen interviewers administered the CAPS after receiving intensive training. All interviewers participated in regular diagnostic supervision sessions led by a licensed psychologist. Inter-rater reliability among the raters across five training tapes showed excellent agreement for diagnosis of current PTSD, [Fleiss' (17) kappa = 1.0]. Training tapes included cases with and without current PTSD from childhood sexual trauma, combat trauma, interpersonal violence, and motor vehicle accidents.

Following CAPS instructions, current symptoms (past month) for up to three traumatic events were queried. In each case, participants were first queried about their worst traumatic event, i.e., the event that was disturbing them most now. In some cases, where an individual did not meet DSM-IV criteria for their "worst traumatic event", up to two other qualifying DSM-IV traumatic events were explored to see if they would meet DSM-IV PTSD criteria for another trauma. If an individual met DSM-IV criteria for an event other than their worst, it was recorded as their index traumatic event.

**DSM-5 Proposed Criteria—**Interviewers rated whether or not each individual's index traumatic event met the new definition of a qualifying traumatic event on DSM-5 Criterion A. In order to assess newly revised or proposed symptoms of DSM-5 PTSD that do not overlap with DSM-IV CAPS items, four additional items were created and administered as part of the CAPS. These items included measurement of DSM-5 Criterion D2 (formally DSM-IV C7), D3, D4 and E6. The newly constructed items are provided as Appendix I.

**Structured Clinical Interview for DSM-IV (SCID—**Presence of comorbid DSM-IV Axis I diagnoses was determined using the SCID (18). Eight diagnostic raters performed the SCID, and interrater reliability on the SCID across 7 SCID training videos was excellent [mean Fleiss' (17) kappa = .92].

### Analyses

For descriptive purposes, exposure to traumatic events was assessed with the TLEQ and categorized following the method proposed by Dedert et al. (13). The prevalence and concordance between DSM-IV and the proposed DSM-5 classifications were calculated based on results from the CAPS interview. As the optimal number of symptoms required in order to meet Criterion D and E for a DSM-5 diagnosis has yet to be determined, the number of symptoms required for DSM-5 Criterion D and E were manipulated simultaneously. Prevalence rates and diagnostic efficiency indices (9) including sensitivity, specificity, area under the curve (AUC), were calculated for each of the possible ways to define DSM-5 PTSD. Weighted kappa coefficients were calculated to account for the observed base rate in the sample and provided equal value to sensitivity and specificity (i.e., $\kappa[0.5]$; (19)) Adjusted Wald 95% confidence intervals were calculated for each point estimate. SAS PROC LOGISTIC (SAS PC version 9.2; SAS Institute, Cary NC) was used to conduct receiver operating characteristic (ROC; (20))curve analysis to estimate the corresponding AUCs for each of the possible ways to define DSM-5 PTSD in comparison to DSM-IV. The diagnostic accuracy of various DSM-5 algorithms that provided good agreement with DSM-IV (e.g., AUC > 0.9 and Kappa > 0.8) were compared to the proposed 3D/3E decision rule using the non-parametric method of Hanley and McNeil (1983), which accounts for the correlation between ROC curves from the same sample.

## Results

The average age of the sample was 37 years ($SD$=11). The sample was almost evenly split between women and men (52% male, $n$=94). Almost a third of participants were married (32%, $n$= 58). The mean years of school completed was 13 ($SD$=3.2). The mean Hollingshead index was 52 ($SD$=15) which suggests the average SES of participants fell in the middle-lower class range; 48% ($n$=87) of the sample were currently employed. Thirty-one percent ($n$=56) reported military service. Participants largely identified themselves as African-American (62%, $n$=114) or Caucasian (31%, $n$=57) with a minority identifying as either Asian, Native American, or multi-racial (5%, $n$=10).

Trauma exposure was highly prevalent in the sample. Results from the TLEQ indicated that almost all participants (98%, $n$=181) had been exposed to one or more traumatic events that resulted in "fear, helplessness, or horror." Forty-eight percent ($n$=79) of the sample reported exposure to some form of childhood physical assault and 26% ($n$=43) reported experiencing childhood sexual assault. The most commonly endorsed TLEQ trauma categories included learning of the unexpected death of close friend/loved one or survival of a life-threatening accident or illness (82%, $n$=137), exposure to a natural disaster or serious accident (66%, $n$=111), and exposure to adult physical violence (66%, $n$=110). Fifteen percent ($n$=31) of the sample endorsed adult sexual trauma and 24% ($n$=31) reported service in a warzone.

A categorization of each individual's index traumatic events is provided in Table 2. Consistent with the results from the TLEQ, almost all participants (98%, $n$=181) described an event that met DSM-IV Criterion A1. Of these, almost all (97%, $n$=175) also met DSM-IV Criterion A2 resulting in 95% ($n$=175) of the sample endorsing a DSM-IV Criterion A traumatic event. Each participant's traumatic event was rated for whether it would qualify as a DSM-5 Criterion A event. In total, 7% ($n$=12) of those who met DSM-IV Criterion A reported events that would no longer qualify under the new stressor criterion. Only one individual (a veteran who reported combat trauma but denied fear, helplessness or horror) who did not meet DSM-IV Criterion A met the new DSM-5 criterion. Thus, a total of 89% of sample reported an event that met DSM-5 Criterion A. Results of the CAPS interview revealed that approximately half ($n$=93) of participants met DSM-IV criteria for PTSD resulting in a base rate of 50%. As shown in Table 2, only 3 individuals who met full DSM-IV criteria for PTSD, did not meet DSM-5 Criterion A while meeting DSM-IV criteria B, C, and D.

Among those with PTSD, depression and other anxiety disorders were a common comorbidity. As many as 33% ($n$=31) met criteria for comorbid major depressive disorder and 29% met criteria for another DSM-IV anxiety disorder. Psychopathology was less prevalent among those without PTSD, where only 13% ($n$=11) met criteria for any Axis I disorder. Anxiety disorders accounted for the majority of psychopathology among non-PTSD participants (82%, $n$=8).

Table 3 displays the rate of endorsement of each of the DSM-5 symptoms and the correlations of each symptom with DSM-5 symptom clusters and total PTSD symptom score. Overall, each symptom was more highly correlated with its purported symptom cluster than other symptom clusters. The majority of symptoms were highly correlated (21) with their respective symptom clusters, however, symptoms D1 (inability to recall important aspects of the trauma) and E2 (reckless or self-destructive behavior) only showed moderate item-cluster correlations (see Table 3).

The proposed DSM-5 criteria require indication of active avoidance. Almost all participants who were diagnosed with DSM-IV PTSD endorsed active avoidance and thus met DSM-5 Criterion C (99%, $n$=92). Table 4 displays the observed prevalence rates for various DSM-5

diagnostic algorithms where the number of symptoms required for Criterion D and E were varied simultaneously while Criteria A, B, C, F, G, and H were fixed as currently proposed. Results indicate that several of the permutations resulted in good concordance (AUCs > .90, Kappa > .8) between classification methods (see Table 4). The currently suggested algorithm of three or more D symptoms and three or more E symptoms resulted in an acceptable AUC of .91 but was characterized by a sensitivity of only .85 and resulted in a change in the prevalence rate from the DSM-IV observed 50% down to 44% Two other algorithms produced more balanced sensitivity and specificity and slightly better AUC and kappa values. For example, while it was not statistically significantly different from the algorithm requiring three D and three E symptoms (z = 0.61, n.s.), the algorithm requiring only 2 D and E symptoms produced an AUC of .93 (sensitivity = .95, specificity = .91) and was associated with a slight increase in the prevalence rate (i.e., 52% vs 50% observed using DSM-IV). Similarly, the algorithm requiring three D symptoms and 2 E symptoms resulted in an AUC of .93, provided a nice balance between sensitivity (.92) and specificity (.93), and a less than 1% decrease in observed prevalence compared to the DSM-IV base rate of 50% (see Table 4).

## Discussion

Several significant changes have been proposed to the diagnostic criteria for PTSD for DSM-5. The present study evaluated the diagnostic efficiency of several possible DSM-5 diagnostic algorithms in a volunteer sample of participants recruited for studies examining trauma and health. Almost all (98%) reported a DSM-IV A1 event (trauma exposure). While the DSM-5 PTSD workgroup website currently states that three Cluster D symptoms and three Cluster E symptoms will be required for a PTSD diagnosis, final determination of the optimal number of symptoms will be determined after DSM-5 field trials. Data from the current investigation suggest that several other diagnostic algorithms should be considered including the requirement of two symptoms from both Clusters D and E which, in this study, provided strong concordance to DSM-IV (AUC = .93; Kappa = .86) and a greater balance between sensitivity and specificity than requiring three symptoms in both Clusters D and E.

There is great interest on how the new DSM-5 criteria will affect observed prevalence of PTSD. It is likely there will be much debate about whether DSM-5 criteria provide a better measure of "true" PTSD than DSM-IV. What is clear, however, is that differences in observed prevalence rates between DSM-IV and DSM-5 will be greatly affected by the observed base-rate in a given sample. Classification methods are most efficient when tested in a sample with an actual 50% prevalence of the disorder (8), which was the observed base-rate in the current study. The magnitude and even the direction of the differences in prevalence rates between DSM-IV and DSM-5 classification methods will vary as the "true," or in this case, the DSM-IV based, sample population prevalence diverges from 50%. As long as the sensitivity and specificity of the proposed DSM-5 algorithm are known for a specific population, however, the DSM-5 based estimated population prevalence can be easily computed for any base rate using the following formula: Estimated Population Prevalence = (Sensitivity × Prevalence) + [(1-Specificity) × (1-Prevalence)] (for a discussion, see (22)). Table 5 illustrates the effects of DSM-IV based baseline population prevalence on the operating characteristics of the DSM-5 algorithm that requires 2 Cluster D symptoms and 2 Cluster E symptoms. As shown in Table 5, the magnitude and even the direction of observed differences in the prevalence rates vary as the true prevalence diverges from 50%. In this case, the DSM-5 algorithm would result in increases in observed prevalence as the true prevalence is low and results in a decrease in the observed prevalence rates when the true population is high. For example, if applied in a VA primary care clinic where a DSM-IV PTSD base-rate of 11% has been reported (23), the DSM-5 2D/2E algorithm would result in an observed prevalence rate of 18%,. Conversely, if the algorithm

was applied in a sample where the base rate was 100%, such as the population of patients receiving Department of Veterans Affairs service-connected disability payments for PTSD, the observed prevalence rate would be lower (e.g., 95%).

The DSM-5 PTSD workgroup has noted that changes proposed to PTSD Criterion A included efforts to tighten the definition of a Criterion A trauma. In the current sample, 95% of the sample reported an event that met both DSM-IV PTSD Criterion A1 and A2, but only 89% reported a trauma that met Criterion A on DSM-5. The largest reduction in the prevalence of Criterion A events was associated with events related to learning of the death or illness of a loved one or close friend. The removal of Criterion A2 had little impact on potential increases in DSM-5 PTSD prevalence rates as there was only one individual, a veteran with combat service, who did not endorse DSM-IV A2, but who met DSM-5 PTSD Criterion A.

A review of symptom endorsement on DSM-5 and item-cluster correlations (see Table 3) indicated that only two items did not correlate highly with their purported symptom cluster. Consistent with research examining the psychometric properties of DSM-IV based PTSD symptoms, symptom D1, or the inability to recall important aspects of the trauma, was not highly correlated with other emotional numbing symptoms or full scale PTSD scores[24]. One of the newly proposed symptoms, symptom E2, reckless or self-destructive behavior, had a relatively low endorsement rate and only showed moderate item-cluster correlations with other symptoms of arousal and reactivity.

This study is one of the first to examine the concordance of proposed DSM-5 PTSD diagnostic algorithms with DSM-IV based PTSD classification. Strengths of the current study include a sample with an observed base-rate of PTSD of 50% and state of the art interview methods to assess PTSD and other psychiatric symptoms. Results should be interpreted with some caution as the use of a volunteer sample potentially limits generalizability of findings to other samples. Indeed, results may not generalize to other civilian or help seeking veteran samples. The current sample was over-represented by racial minorities in comparison to the U.S. population. Trauma exposure and PTSD were highly prevalent in the sample. While the sample may be representative of those that have contributed to much of the PTSD literature (i.e., research volunteers), results may not generalize to other populations or settings. Sensitivity and specificity of a classification method can be affected by demographics, disease severity, comorbidity, dispositional factors (e.g., resilience [25]) as well as other characteristics often called spectrum or variation effects [22, 26–27]. Many of these variables are described in the current study and should be carefully evaluated in future research that compares DSM-IV to DSM-5 based PTSD so that spectrum effects can be evaluated during reviews of the evidence in the future. In the current study, interviewers determined whether or not a traumatic event qualified under proposed DSM-5 rules, which is a potential limitation. As the study was not part of ongoing APA DSM-5 field trials, methods to assess PTSD may differ from other research examining concordance between DSM-IV and DSM-5 PTSD diagnoses.

## Conclusions

More studies are needed to provide additional estimates of the sensitivity and specificity of DSM-5 diagnostic algorithms in various populations (e.g., combat veterans, help-seeking psychiatric populations, representative normative based samples). While DSM-5 field trials are underway, results from the current study highlight that proposed changes will likely have an observable effect on prevalence rates and the magnitude of the effect will be influenced by the sample base-rate. None of the possible DSM-5 algorithms evaluated were perfectly sensitive, which may be due in part to the tightening of Criterion A. Results also provided an

indication that alternatives to requiring three symptoms of negative alterations in cognitions and mood (Cluster D) and three arousal symptoms (Cluster E) should be considered. Given the importance of the psychiatric diagnostic manual to individual patients, clinicians and the fields of psychiatry and psychology, careful evaluation of the proposed changes for the PTSD criteria, with as much empirical data as possible, is warranted.

## Acknowledgments

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## Appendix I: Newly constructed items for the Clinician Administered PTSD Scale

**1. (D-2) persistent and exaggerated negative expectations about one's self, others, or the world**

*Frequency*
**Have you ever found yourself having very negative expectations or thoughts about yourself, others or the world?** *(Have you had thoughts like "I'm bad" or "People can't be trusted?") (What were they like?) (Was it directed at self, other, or both?)* **[IF TIMELINE NOT CLEAR]:** (*When did you first start to feel that way?) (After the [EVENT]?)* **How much time have you spent having these thoughts in the past month?**

0    None of the time

1    Very little of the time (less than 10%)

2    Some of the time (approx 20–30%)

3    Much of the time (approx 50–60%)

4    Most or all of the time (more than 80%)

*Description/Examples*

*Intensity*
**How much distress or discomfort did these thoughts cause you? Have these expectations changed the way you interact with your environment or others? To what degree?** *(How convinced are you that these things are true?)*

0    None

1    Mild, minimal negative expectations, no distress present

2    Moderate, negative expectations clearly present, some distress or disruption of activities and/or relationships

3    Severe, considerable distress, difficulty dismissing thoughts, marked disruption of activities and/or relationships. Thought content may span multiple domains.

4    Extreme, incapacitating distress, cannot dismiss thoughts. Completely

**Current (Past Month)**
F____
I ____
Sx: Y N
(F 1 & I 2)
**Lifetime**
F____
I ____
Sx: Y N
(F 1 & I 2)
**Self___
Other___
Both___**

**1. (D-2) persistent and exaggerated negative expectations about one's self, others, or the world**

| | convinced that negative expectations are true. | |
|---|---|---|

**2. (D-3) persistent distorted blame of self or others about the cause or consequences of the traumatic event(s).**

| _Frequency_ | **Intensity** <br> **How much distress or discomfort did these feelings cause you? Have you ever believed that** <br> **these thoughts about blame were unreasonable or** <br> **excessive?** (_Have other people said your thoughts about blame were unreasonable, excessive, or that they interfered with your ability to get things done, etc.)_ **How much did these thoughts interfere with your life?** | **Current (Past Month)** <br> F____ <br> I ____ <br> **Sx: Y N** <br> (F 1 & I 2) <br> **Lifetime** <br> F____ <br> I ____ <br> **Sx: Y N** <br> (F 1 & I 2) <br> **Self___** <br> **Other___** <br> **Both___** |
|---|---|---|
| **1** Have you ever found yourself thinking that it is your fault that **[EVENT] happened?** (_Have others said that you blame yourself too much for what happened?_) **OR** <br><br> **2** Have you found yourself thinking a lot about how someone else is to blame for **[EVENT]?** (_Have others said that you blame others too much for what happened?_) **[IF TIMELINE NOT CLEAR]:** ( _When did you first start to feel that way?_ ) (_After the [EVENT]?_) <br><br> **How much time have you spent blaming yourself or others in the past month?** | | |
| **0** None of the time | **0** None | |
| **1** Very little of the time (less than 10%) | **1** Mild, minimal distress or disruption of activities | |
| **2** Some of the time (approx 20–30%) | **2** Moderate, distress clearly present but still manageable, some disruption of activities | |
| **3** Much of the time (approx 50–60%) | **3** Severe, considerable distress, difficulty dismissing feelings, marked disruption of activities | |
| **4** Most or all of the time (more than 80%) | **4** Extreme, incapacitating distress, cannot dismiss feelings, unable to continue activities | |
| _Description/Examples_ | | |

**3. (D-4) pervasive negative emotional state**

| _Frequency_ <br> **Have you ever spent a lot of time experiencing negative emotions after the [EVENT]?** (_e.g., angry, fearful, scared, horrified, guilty, shameful, or other negative emotion)_ **What was that like? How much time have you spent feeling this bad in the past month?** _[IF RELEVANT]: (Was it directed at self, other, or both?)_ | _Intensity_ <br> **How much distress or discomfort did these feelings cause you? How much did they interfere with your life?** | **Current (Past Month)** <br> F____ <br> I ____ <br> **Sx: Y N** <br> (F 1 & I 2) <br> **Lifetime** <br> F____ <br> I ____ <br> **Sx: Y N** <br> (F 1 & I 2) <br> **Optional:** <br> (Self___ <br> Other___ <br> Both___) |
|---|---|---|
| **0** None of the time | **0** None | |
| **1** Very little of the time (less than 10%) | **1** Mild, minimal distress or disruption of activities | |
| **2** Some of the time (approx 20-30%) | **2** Moderate, distress clearly present but still manageable, some disruption of activities | |
| **3** Much of the time (approx 50-60%) | **3** Severe, considerable distress, difficulty dismissing feelings, marked disruption of activities | |
| **4** Most or all of the time (more than 80%) | **4** Extreme, incapacitating distress, cannot dismiss feelings, unable to continue activities | |
| _Description/Examples_ | | |

**4. (E-2) reckless or self-destructive behavior**

| _Frequency_ <br> **Have there been times when you participated in reckless or self-destructive behavior? Can** | _Intensity_ <br> **How (dangerous) was your behavior?** (_Did your behavior ever cause problems with your friends, family, co-worker, or the legal system? Have you ever injured yourself or someone else as a result of your behavior? Have you ever been hospitalized as_ | **Current (Past Month)** <br> F____ <br> I ____ <br> **Sx: Y N** |
|---|---|---|

| 4. (E-2) reckless or self-destructive behavior | | |
|---|---|---|
| **you give me some examples? ? [IF TIMELINE NOT CLEAR]: (** *When did you first start to feel that way?* **)** *(After the [EVENT]?)* **How often did you engage in these behaviors in the past month?** *(Was it directed at self, other, or both?)* | *a result of your behavior?)* | (F 1 & I 2) **Lifetime** **F**___ **I** ___ **Sx: Y N** (F 1 & I 2) **Self**___ **Other**___ **Both**___ |
| **0**    Never<br>**1**    Once or twice<br>**2**    Once or twice a week<br>**3**    Several times a week (3 or 4)<br>**4**    Daily or almost every day (5 to 7)<br><br>***Description/Examples*** | **0**    None<br>**1**    Mild, minimal reckless behavior, little or no negative consequences<br>**2**    Moderate, definite reckless behavior resulting in minor negative consequences<br>**3**    Severe, marked reckless behavior with significant consequences that may include damage to self or property<br>**4**    Extreme, pervasive (i.e. across multiple behavioral domains) reckless behavior that may include hospitalization, being jailed, or serious harm to self or others. | |

**Table 1**

Comparison of DSM-IV TR criteria for PTSD to the proposed DSM-5 criteria

| DSM-IV Criteria | Proposed DSM-5 Criteria |
|---|---|
| **The person has been exposed to a traumatic event in which both of the following were present:**<br><br>1. The person experienced, witnessed, or was confronted with an event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others.<br><br>2. The person's response involved intense fear, helplessness, or horror. | **A. The person was exposed to one or more of the following event(s): death or threatened death, actual or threatened serious injury, or actual or threatened sexual violation, in one or more of the following ways: \*\***<br><br>1. Experiencing the event(s) him/herself<br><br>2. Witnessing, in person, the event(s) as they occurred to others<br><br>3. Learning that the event(s) occurred to a close relative or close friend; in such cases, the actual or threatened death must have been violent or accidental<br><br>4. Experiencing repeated or extreme exposure to aversive details of the event(s) (e.g., first responders collecting body parts; police officers repeatedly exposed to details of child abuse); this does not apply to exposure through electronic media, television, movies, or pictures, unless this exposure is work related. |
| **A. The traumatic event is persistently reexperienced in one (or more) of the following ways:**<br><br>1. Recurrent and intrusive distressing recollections of the event, including images, thoughts, or perceptions.<br><br>2. Recurrent distressing dreams of the event.<br><br>3. Acting or feeling as if the traumatic event were recurring (flashbacks)<br><br>4. Intense psychological distress at exposure to internal or external cues that symbolize or represent an aspect of the traumatic event.<br><br>5. Physiological reactivity on exposure to internal or external cues that symbolize or represent an aspect of the traumatic event | **A. Intrusion symptoms that are associated with the traumatic event(s) (that began after the traumatic event(s)), as evidenced by 1 or more of the following:**<br><br>1. Spontaneous or cued recurrent, involuntary, and intrusive distressing memories of the traumatic event(s).<br><br>2. Recurrent distressing dreams in which the content and/or affect of the dream is related to the event(s).<br><br>3. Dissociative reactions (e.g., flashbacks) in which the individual feels or acts as if the traumatic event(s) were recurring<br><br>4. Intense or prolonged psychological distress at exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event(s)<br><br>5. Marked physiological reactions to reminders of the traumatic event(s) |
| **A. Persistent avoidance of stimuli associated with the trauma and numbing of general responsiveness (not present before the trauma), as indicated by three (or more) of the following:**<br><br>1. Efforts to avoid thoughts, feelings, or conversations associate with the trauma<br><br>2. Efforts to avoid activities, places, or people that arouse recollections of the trauma<br><br>3. Inability to recall an important aspect of the trauma<br><br>4. Markedly diminished interest or participation in significant activities<br><br>5. Feeling of detachment or estrangement from others<br><br>6. Restricted range of affect | **A. Persistent avoidance of stimuli associated with the traumatic event(s) (that began after the traumatic event(s)), as evidenced by efforts to avoid 1 or more of the following:**<br><br>1. Avoids internal reminders (thoughts, feelings, or physical sensations) that arouse recollections of the traumatic event(s)<br><br>2. Avoids external reminders (people, places, conversations, activities, objects, situations) that arouse recollections of the traumatic event(s).<br><br>**A. Negative alterations in cognitions and mood that are associated with the traumatic event(s) (that began or worsened after the traumatic event(s)), as evidenced by 3 or more of the following:**<br><br>1. Inability to remember an important aspect of the traumatic event(s) (typically dissociative amnesia; not due to head injury, alcohol, or drugs). |

| DSM-IV Criteria | | Proposed DSM-5 Criteria | |
|---|---|---|---|
| | 7. Sense of foreshortened future | 2. | Persistent and exaggerated negative expectations about one's self, others, or the world. |
| | | 3. | Persistent distorted blame of self or others about the cause or consequences of the traumatic event(s) |
| | | 4. | Pervasive negative emotional state -- for example: fear, horror, anger, guilt, or shame |
| | | 5. | Markedly diminished interest or participation in significant activities. |
| | | 6. | Feeling of detachment or estrangement from others. |
| | | 7. | Persistent inability to experience positive emotions (e.g., unable to have loving feelings, psychic numbing) |
| A. | **Persistent symptoms of increased arousal (not present before the trauma), as indicated by two (or more) of the following:** | A. | **Alterations in arousal and reactivity that are associated with the traumatic event(s) (that began or worsened after the traumatic event(s)), as evidenced by 3 or more of the following:** |
| | 1. Difficulty falling or staying asleep | 1. | Irritable or aggressive behavior |
| | 2. Irritability or outbursts of anger | 2. | Reckless or self-destructive behavior |
| | 3. Difficulty concentrating | 3. | Hypervigilance |
| | 4. Hypervigilance | 4. | Exaggerated startle response |
| | 5. Exaggerated startle response | 5. | Problems with concentration |
| | | 6. | Sleep disturbance -- for example, difficulty falling or staying asleep, or restless sleep |

**Table 2**

Trauma exposure reported for the CAPS interview and DSM-IV PTSD prevalence.

| Index trauma description | N=185 % (n) | % (n) Met DSM-IV Criterion A1 | % (n) Met DSM-IV Criterion A2 | % (n) Met DSM-IV PTSD Criteria | % (n) Met DSM-5 Criterion A | % (n) Met DSM-5 Criterion A and DSM-IV B, C, and D |
|---|---|---|---|---|---|---|
| Childhood physical abuse | 3 (6) | 100 (6) | 100 (6) | 33 (2) | 100 (6) | 33 (2) |
| Childhood sexual abuse or assault | 10 (18) | 100 (18) | 100 (18) | 72 (13) | 100 (18) | 72 (13) |
| Witnessed or experienced violence as a child | 2 (4) | 100 (4) | 100 (4) | 25 (1) | 100 (4) | 25 (1) |
| Adult physical assault | 2 (4) | 100 (4) | 100 (4) | 25 (1) | 100 (4) | 25 (1) |
| Adult domestic violence | 8 (14) | 100 (14) | 100 (14) | 64 (9) | 100 (14) | 64 (9) |
| Adult sexual assault | 5 (9) | 100 (9) | 100 (9) | 89 (8) | 100 (9) | 89 (8) |
| Witnessed or experienced violence as an adult | 16 (30) | 97 (29) | 93 (28) | 53 (16) | 93 (28) | 53 (16) |
| Death of family member / close friend | 21 (39) | 100 (39) | 97 (38) | 38 (15) | 77 (30) | 33 (13) |
| Serious accident / motor vehicle accident / fire | 11 (20) | 100 (20) | 95 (19) | 25 (5) | 90 (18) | 25 (5) |
| Exposure to combat/war | 15 (26) | 100 (26) | 92 (24) | 69 (18) | 96 (25) | 69 (18) |
| Natural disaster | 1 (2) | 100 (2) | 100 (2) | 0 (0) | 50 (1) | 0 (0) |
| Other trauma | 7 (13) | 77 (10) | 69 (9) | 38 (5) | 54 (7) | 31 (4) |

**Table 3**

DSM-5 Symptom endorsement and Item-Cluster correlations

| DSM-5 Symptom | endorsed % (n) | endorsed w/ moderate impairment % (n) | Item-Cluster Correlations (r) | | | | Item-Total r |
|---|---|---|---|---|---|---|---|
| | | | B | C | D | E | |
| (B-1) intrusive Recollections | 70 (129) | 55 (101) | **.73** | .64 | .62 | .53 | .71 |
| (B-2) distressing dreams | 45 (83) | 42 (78) | **.65** | .55 | .80 | .58 | .66 |
| (B-3) dissociative reactions (e.g., flashbacks) | 26 (48) | 22 (41) | **.52** | .37 | .41 | .40 | .48 |
| (B-4) psychological distress at exposure to cues | 67 (123) | 58 (108) | **.68** | .63 | .60 | .52 | .68 |
| (B-5) physiological reactivity on exposure to cues | 52 (96) | 46 (85) | **.66** | .56 | .54 | .55 | .65 |
| (C-1) avoidance of internal reminders | 67 (123) | 57 (105) | .70 | **.59** | .70 | .62 | .77 |
| (C-2) avoidance of external reminders | 54 (99) | 48 (88) | .56 | **.59** | .59 | .52 | .63 |
| (D-1) inability to recall important aspect of trauma | 25 (46) | 21 (39) | .15 | .33 | **.31** | .28 | .30 |
| (D-2) negative expectations about self/others/world | 43 (80) | 38 (70) | .51 | .42 | **.57** | .52 | .58 |
| (D-3) distorted blame of self or others | 42 (77) | 31 (57) | .37 | .41 | **.46** | .42 | .47 |
| (D-4) pervasive negative emotional state | 57 (104) | 49 (90) | .54 | .56 | **.60** | .61 | .66 |
| (D-5) diminished interest in activities | 43 (79) | 35 (65) | .58 | .57 | **.53** | .53 | .63 |
| (D-6) detachment or estrangement | 56 (103) | 50 (92) | .61 | .65 | **.76** | .70 | .78 |
| (D-7) inability to experience positive emotions | 40 (74) | 35 (65) | .49 | .48 | **.51** | .61 | .60 |
| (E-1) irritable or aggressive behavior | 58 (107) | 55 (101) | .52 | .53 | .62 | **.57** | .65 |
| (E-2) reckless or self-destructive behavior | 17 (31) | 12 (23) | .27 | .19 | .30 | **.31** | .32 |
| (E-3) hypervigilance | 50 (93) | 44 (82) | .56 | .48 | .64 | **.57** | .66 |
| (E-4) exaggerated startle response | 44 (81) | 40 (74) | .49 | .43 | .59 | **.62** | .62 |
| (E-5) problems with concentration | 59 (109) | 52 (96) | .46 | .54 | .57 | **.62** | .62 |
| (E-6) difficulty falling or staying asleep | 42 (78) | 36 (67) | .40 | .45 | .48 | **.49** | .51 |

Note. Bolded r-values are inter-criterion item-cluster correlations.

**Table 4**

Prevalence and diagnostic efficiency indices of proposed DSM-5 PTSD criteria

| DSM-5 PTSD Algorithm | | Observed DSM-5 Prevalence | Prevalence Change | Sensitivity | Specificity | AUC | Kappa |
|---|---|---|---|---|---|---|---|
| Required Criterion D symptoms | Required Criterion E symptoms | | | | | | |
| 1 (or more) | 1 (or more) | 60% (53%–67%) | 10% | .97 (.93–.99) | .77 (.71–.83) | .87 (.82–.92) | .74 (.67–.80) |
| 1 (or more) | 2 (or more) | 56% (48%–63%) | 5% | .97 (.93–.99) | .86 (.80–.90) | .91 (.87–.95) | .83 (.77–.88) |
| 1 (or more) | 3 (or more) | 48% (40%–55%) | −3% | .87 (.81–.91) | .92 (.88–.96) | .90 (.85–.94) | .79 (.73–.85) |
| 1 (or more) | 4 (or more) | 35% (29%–42%) | −15% | .68 (.61–.74) | .98 (.94–.99) | .83 (.78–.88) | .65 (.58–.72) |
| 2 (or more) | 1 (or more) | 54% (46%–61%) | 3% | .95 (.90–.97) | .88 (.83–.92) | .91 (.87–.95) | .83 (.77–.88) |
| 2 (or more) | 2 (or more) | 52% (45%–59%) | 2% | .95 (.90–.97) | .91 (.86–.95) | .93 (.87–.95) | .86 (.80–.90) |
| 2 (or more) | 3 (or more) | 44% (37%–52%) | −6% | .85 (.79–.89) | .97 (.93–.99) | .91 (.87–.95) | .82 (.75–.87) |
| 2 (or more) | 4 (or more) | 33% (27%–40%) | −17% | .66 (.58–.72) | 1.00 (.98–1.00) | .83 (.78–.88) | .65 (.58–.72) |
| 3 (or more) | 1 (or more) | 50% (43%–57%) | 0% | .92 (.88–.96) | .92 (.88–.96) | .92 (.89–.96) | .85 (.79–.89) |
| 3 (or more) | 2 (or more) | 50% (43%–57%) | −1% | .92 (.88–.96) | .93 (.89–.96) | .93 (.89–.97) | .86 (.80–.90) |
| 3 (or more) | 3 (or more) | 44% (37%–51%) | −6% | .85 (.79–.89) | .98 (.94–.99) | .91 (.87–.95) | .83 (.77–.88) |
| 3 (or more) | 4 (or more) | 33% (27%–40%) | −17% | .66 (.58–.72) | 1.00 (.98–1.00) | .83 (.78–.88) | .65 (.58–.72) |
| 4 (or more) | 1 (or more) | 44% (37%–52%) | −6% | .84 (.78–.89) | .96 (.92–.98) | .90 (.85–.94) | .79 (.73–.85) |
| 4 (or more) | 2 (or more) | 44% (37%–52%) | −6% | .84 (.78–.89) | .96 (.92–.98) | .90 (.85–.94) | .79 (.73–.85) |
| 4 (or more) | 3 (or more) | 41% (34%–48%) | −10% | .80 (.73–.85) | .99 (.96–1.00) | .89 (.85–.94) | .78 (.72–.84) |
| 4 (or more) | 4 (or more) | 31% (25%–38%) | −19% | .61 (.54–.68) | 1.00 (.98–1.00) | .81 (.76–.86) | .61 (.54–.68) |

Note. DSM-5 Algorithm also required a DSM-5 Criterion A traumatic event, 2 Criterion-B symptoms, 1 Criterion-C symptom and Criterion F, G, and H. Observed DSM-IV PTSD Prevalence rate = 50%. AUC = Area under the Curve. Values in parentheses are adjusted 95% Wald confidence intervals.

**Table 5**

Observed DSM-5 prevalence rates across a range of true prevalence rates of the D2/E2 DSM-5 Algorithm, sensitivity of .95, and specificity of .91

| True DSM-IV Prevalence | Observed DSM-5 Prevalence | Prevalence Difference |
| --- | --- | --- |
| .05 | .13 | + 8% |
| .11 | .18 | + 7% |
| .25 | .30 | + 5% |
| .5 | .52 | + 2% |
| .9 | .86 | −4% |
| 1.0 | .95 | −5% |