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Mark W. Miller, Erika J. Wolf, Dean Kilpatrick, Heidi Resnick, Brian P. Marx, Darren W. Holowka, Terence M. Keane, Raymond C. Rosen, and Matthew J. Friedman  
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# The Prevalence and Latent Structure of Proposed DSM-5 Posttraumatic Stress Disorder Symptoms in U.S. National and Veteran Samples

Mark W. Miller and Erika J. Wolf

National Center for PTSD at VA Boston Healthcare System and  
Boston University School of Medicine

Dean Kilpatrick and Heidi Resnick

Medical University of South Carolina

Brian P. Marx, Darren W. Holowka, and

Terence M. Keane

National Center for PTSD at VA Boston Healthcare System and  
Boston University School of Medicine

Raymond C. Rosen

New England Research Institutes

Matthew J. Friedman

National Center for PTSD at White River Junction VA Medical Center and Dartmouth Medical School Hanover, New Hampshire

The *Diagnostic and Statistical Manual, Fourth Edition (DSM-IV)* is currently undergoing revisions in advance of the next edition, *DSM-5*. The *DSM-5* posttraumatic stress disorder workgroup has proposed numerous changes to the PTSD diagnosis. These include the addition of new symptoms, revision of existing ones, and a new four-cluster organization (Friedman, Resick, Bryant, & Brewin, 2011). We conducted two Internet-based surveys to provide preliminary information about how proposed changes might impact PTSD prevalence and clarify the latent structure of the new symptom set. We used a newly developed instrument to assess event exposure and lifetime and current *DSM-5* PTSD symptoms among a nationally representative sample of American adults ( $N = 2,953$ ) and a clinical convenience sample of U.S. military veterans ( $N = 345$ ). Results from both samples indicated that the originally proposed *DSM-5* symptom criteria (i.e., requiring 1 B, 1 C, 3 D, and 3 E symptoms) yielded considerably lower PTSD prevalence estimates compared with *DSM-IV* estimates. These estimates were more comparable when the *DSM-5* D and E criteria were relaxed to 2 symptoms each (i.e., the revised proposal). Confirmatory factor analyses (CFA) indicated that the factor structure implied by the four-symptom criteria provided adequate fit to the data in both samples, and a *DSM-5* version of a dysphoria model (Simms, Watson, & Doebbeling, 2002) yielded modest improvement in fit. Item-response theory and CFA analyses indicated that the psychogenic amnesia and new reckless/self-destructive behavior symptom deviated from the others in their respective symptom clusters. Implications for final formulations of *DSM-5* PTSD criteria are discussed.

**Keywords:** *DSM-5*, Posttraumatic Stress Disorder, Diagnosis

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Mark W. Miller, Erika J. Wolf, Brian P. Marx, Darren W. Holowka, and Terence M. Keane, National Center for PTSD at VA Boston Healthcare System and Department of Psychiatry, Boston University School of Medicine; Dean Kilpatrick and Heidi Resnick, Department of Psychiatry, Medical University of South Carolina; Raymond C. Rosen, New England Research Institutes, Watertown, Massachusetts; Matthew J. Friedman, National Center for PTSD at White River Junction VA Medical Center, and Departments of Psychiatry and Pharmacology and Toxicology, Dartmouth Medical School, Hanover, New Hampshire.

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Correspondence concerning this article should be addressed to Mark W. Miller, PhD, VA Boston Healthcare System, National Center for PTSD, 150 S. Huntington Ave. (116B-2), Boston, MA 02130. E-mail: [mark.miller5@va.gov](mailto:mark.miller5@va.gov)

The *Diagnostic and Statistical Manual for Mental Disorders, Fourth Edition (DSM-IV; American Psychiatric Association, 2000)* is currently undergoing revisions in advance of the next edition, *DSM-5*. The *DSM-5* posttraumatic stress disorder (PTSD) workgroup has proposed numerous changes to the PTSD diagnosis, including moving the diagnosis out of the anxiety disorders section and into a new class of “trauma- and stressor-related disorders,” the elimination of criterion A2 (i.e., the peri-traumatic fear, helplessness, or horror requirement), the addition of new symptoms and revision of existing ones, and a new four-cluster organization to the symptoms (Friedman, Resick, Bryant, & Brewin, 2011). The aims of this study were to examine how these changes might impact PTSD prevalence rates and to clarify the latent structure of the proposed symptom set using confirmatory factor analysis (CFA) and item-response theory (IRT).

The reorganization and redefinition of PTSD symptoms includes several changes that could impact diagnostic prevalence and/or the latent structure of the symptoms. Most notably, the *DSM-5* PTSD workgroup has proposed to add three new symptoms, for a new total of 20 symptoms, and organize all symptoms under four symptom clusters (i.e., the B, C, D, and E symptom clusters) as opposed to the three clusters listed in *DSM-IV*. Criterion B was left essentially unchanged in the *DSM-5* proposal

though renamed from “reexperiencing” to “intrusion” symptoms to underscore the new emphasis on intrusive versus ruminative processes, as evident for symptom B1 (“intrusive distressing memories of the traumatic event”) (Friedman et al., 2011). The new Criterion C, termed “persistent avoidance of stimuli associated with the traumatic event(s),” is comprised of the two effortful avoidance symptoms from *DSM-IV* (C1 and C2) that were previously located within the broader *DSM-IV* Criterion C. This revision was based on results of prior *DSM-IV* CFA studies that emphasized the distinction between effortful avoidance and the other symptoms that fell under the rubric of “numbing of general responsiveness” (Elhai, Ford, Ruggerio, & Frueh, 2009; Forbes et al., 2011; Friedman et al., 2011). Criterion D, titled “Negative alterations in cognitions and mood that are associated with the traumatic event,” lists seven symptoms. Two are new and were intended to reflect the persistent negative appraisals and pervasive negative moods associated with the syndrome (Criteria D3 and D4). A third symptom, previously known as “sense of a foreshortened future” (D7 in *DSM-IV*), was expanded in scope and substantially revised to read “persistent and exaggerated negative expectations about one’s self, others, or the world.” The *DSM-IV* symptom “restricted range of affect” also received a subtle revision to emphasize specific deficits in the capacity to experience positive emotion. The hyperarousal cluster, formerly Criterion D, will become Criterion E in *DSM-5* and is titled “alterations in arousal and reactivity that are associated with the traumatic event(s).” This cluster includes two major changes, the addition of a new symptom “Reckless or self-destructive behavior” (E2), and an irritability/anger symptom that places a new emphasis on aggressive behavior, that is, “irritable or aggressive behavior” (E1), in contrast to “irritable or angry feelings,” which are subsumed within the negative mood symptom (D4). The item order of the hyperarousal criteria are also changed from *DSM-IV* to *DSM-5*. Finally, at the time this research was initiated, the *DSM-5* proposal included a new diagnostic algorithm requiring the presence of a minimum of one Criterion B, one Criterion C, three Criterion D, and three Criterion E symptoms. Since then, the requisite number of Criterion D and Criterion E symptoms have each been reduced from 3 to 2 symptoms.

In this study, we evaluated the impact of these changes on diagnostic prevalence and the latent structure of PTSD symptoms using data collected through Internet surveys of two samples using a new *DSM-5* instrument. To our knowledge, only one previously published study has addressed these questions and was based on a nonclinical college student sample (Elhai et al., 2012). We used CFA to examine the fit of the new factor structure implied by the four symptom criteria and compared this model to logical alternatives suggested by prior research and initial study findings. CFA is uniquely suited for this purpose because it permits examination of the relations between manifest indicators (i.e., in this case symptom data) and the latent constructs believed to underlie their covariation, as well as the correlations among the factors themselves. Thus, CFA can provide information about the relative strengths of association between each symptom and the factors hypothesized to underlie them (e.g., the construct represented by the overarching criterion). We then used IRT analyses to examine the relationship between the probability of endorsement of each item and symptom severity within a given symptom cluster. In this context, IRT can be thought of as complementing CFA by provid-

ing information about how items within a cluster perform relative to each other with respect to a severity metric; that is, the analysis indicates whether symptoms within a given cluster measure similar or different levels of symptom intensity.

## Study 1

### Method

**Participants.** Participants were adults recruited from a probability-based online panel of U.S. adults (age 18 and older) who had indicated that they would consider participating in online surveys if asked to do so. Such panels are constructed to be generally representative of the U.S. adult population with respect to age, gender, and socioeconomic status. Potential participants are sent e-mail invitations about online surveys and then go to a website containing a brief description of the self-administered survey and decide whether they wish to participate. For this study, participants were recruited from a probability-based online panel of U.S. adults maintained by Survey Sampling International (SSI). Participants who completed the survey received points worth approximately \$3 and were entered into a raffle with a prize equivalent to \$25,000 held every 3 months for which participants completing all types of SSI surveys were eligible. Approximately 20% of U.S. households lack home Internet coverage, but some individuals from such households have Internet access through school, work, or smartphones. Therefore, although this sampling method does not produce a true national probability sample, it does provide a nonconvenience sample that is highly representative of U.S. adults.

A total of 3,756 adults accessed the URL containing the National Stressful Events Survey (NSES) description and survey, and 3,457 (92%) agreed to participate. Of those who agreed to participate, 2,953 completed the survey (85.4% of adults who agreed to participate and 78.6% of those who accessed the URL). Survey data were weighted by age and gender to adjust for discrepancies between the 2010 Census and survey data on these variables, with a corresponding weighted sample of 2,955. Prevalence data presented from the full sample were weighted. Individual item-level analyses (including structural analyses) were based on unweighted data. Comparison of weighted and unweighted symptom prevalence and severity rating data indicated minimal, and in most cases, no differences in prevalence.

Of the survey completers, 345 endorsed exposure to a *DSM-5* Criterion A event and met criteria for a probable lifetime diagnosis of PTSD, as defined by endorsement of at least 1 Criterion B, 1 Criterion C, 3 Criterion D, and 3 Criterion E lifetime symptoms in addition to endorsement of significant distress or impaired functioning in conducting activities in their personal life, relationships, or work or school. Demographic characteristics for this lifetime PTSD subset (whose data was used in the structural analyses described below) were as follows: 78.8% were women, 84.9% self-identified as White, 6.1% as Black, 1.7% as Native American, and 1.7% as Asian/Pacific Islander; 3.8% endorsed Hispanic ethnicity. A substantial proportion, 11.6%, had served in the U.S. Armed Forces, National Guard, or Military Reserves. Approximately one-quarter (25.5%) were between the ages of 18 and 34, 40.6% were between the ages of 35 and 54, and 33.3% were age 55 or older. Nearly all of these participants (97.1%) had at least a



high school degree, and 30.4% had obtained at least a 4-year college degree.

## Measures

**NSES.** The NSES (Kilpatrick, Resnick, Baber, Guille, & Gros, 2011) was developed for this study to assess exposure to different types of traumatic events and the presence and severity of each of the 20 proposed *DSM-5* PTSD symptoms. The language for each symptom item was developed in collaboration with members of the *DSM-5* PTSD workgroup through a process aimed at reflecting the committee's conceptualization of each symptom and the precise wording of the drafted *DSM-5* language. The survey began with a life events section comprised of 28 questions that assessed exposure to a range of events that would meet the proposed *DSM-5* definition for a Criterion A event. Participants who endorsed exposure to at least one event then completed a symptom assessment featuring a conditional branching structure that administered follow-up items on the basis of prior responses. Specifically, for each symptom item, an initial stem question assessed whether the respondent had "ever" experienced the symptom (yes/no). If this question was not endorsed affirmatively, no further questions related to that symptom were administered. If the initial item was endorsed, then participants were asked to indicate when the symptom was last experienced using a four category temporal response option that ranged from "within the past month" to "more than 1 year ago." Participants who endorsed a given symptom within the past month were then asked to rate how much they had been *bothered* by it in the past month using the 1–5 severity scale of the PTSD Checklist (PCL; Weathers, Litz, Herman, Huska, & Keane, 1993), with anchors that ranged from "not at all" to "extremely." Coefficient alpha for the symptom severity items was .94 among those with *DSM-5* defined PTSD (i.e., those participants included in the structural analyses). Items assessing *DSM-5* PTSD Criteria D3 through E6 (which are not implicitly linked to a prior event) included a follow-up item that asked participants to indicate (yes or no) whether the symptom "began or got worse after the event." Endorsement of this item was required for these symptoms to contribute to calculation of probable diagnostic status but not required for individual item-level frequency of endorsement analyses or structural analyses. In addition, if the amnesia item (D1) was endorsed, participants were administered a follow-up item inquiring whether the symptom was because of loss of consciousness or intoxication. If either of these options were endorsed, the symptom was coded as not present for all analyses. Finally, in keeping with *DSM-IV* and *DSM-5* conceptualizations, a positive diagnosis required significant distress or impairment from the symptoms as indexed by responses to at least one of four additional items assessing this criterion.

## Procedure

Participants were recruited by email invitation from a panel of U.S. adults (age 18 and older) in the United States who were registered with SSI. Potential participants were e-mailed the link to the web-based survey by the SSI study manager. Participants who accessed the link were then presented with a brief description of the survey as well as an online consent document in which they had the option to indicate consent or decline participation. The

survey was described as a national survey of exposure to extremely stressful events/experiences and how they affect people. It was emphasized that, to get a good understanding of how common different stressful events are and how they affect people's lives, it was important that people participate whether or not they had experienced stressors or had problems. Participants who indicated that they were 18 years old or older and consented to the study were administered survey questions regarding exposure to events and, if events were reported, questions regarding PTSD symptoms.

## Data Analyses

Three types of analyses were conducted. First, descriptive statistics were computed pertaining to event exposure and probable PTSD diagnosis. For these analyses (in Study 1 only) weighted data were used because this procedure provides the best population estimates of PTSD diagnostic prevalence for adults 18 and older in the United States. The number of weighted cases for these analyses was 2,955. Second, descriptive statistics for data at the individual symptom level were computed and CFA and IRT analyses were performed using the Mplus statistical software, version 5.2 (Muthén & Muthén, 1998–2009). CFA and IRT analyses were based on data from the subsample of participants who met criteria for probable lifetime PTSD ( $n = 345$ ) to ensure that structural findings would be based on a clinically relevant sample. For CFA, we used the robust maximum likelihood (MLR) estimator to account for the non-normal distribution of some items. Ninety-five percent of participants provided complete data across all symptom rating items evaluated in the CFAs. Cases with missing data were included and modeled directly under maximum likelihood estimation. Analyses were based on 5-point severity rating data for symptoms experienced "within the past month." Data for participants who did not endorse a given symptom in the past month (and not administered the severity scale for that symptom) were recoded using the minimum scale value corresponding to "not at all bothered by the symptom."

We compared the fit of 4 alternative models for the structure of *DSM-5* symptoms. The first was the four-factor model defined by the proposed *DSM-5* diagnosis. The second was a *DSM-5* version of a "dysphoria" model (Simms, Watson, & Doebbeling, 2002), which has provided good fit to *DSM-IV* symptom data in many prior CFA studies (for a recent meta-analysis, see Yufik, & Simms, 2010). The defining feature of this model was a broad "dysphoria" factor comprised of all of the *DSM-5* Criterion D and E symptoms except for hypervigilance and exaggerated startle, which defined a separate "hyperarousal" factor. The third model was based on the findings from preliminary analyses, which revealed a high degree of intercorrelation between the reexperiencing and avoidance symptoms. This led us to wonder about the relative fit of a model that merged these two symptom clusters onto a single factor. The fourth model represented the *DSM-IV* three-factor configuration by combining the *DSM-5* criteria C and D symptoms together onto a single Criterion C. Finally, we also examined the fit of a simple one-factor model.

Fit statistics were selected from the absolute ( $\chi^2$ ; standardized root-mean-square residual [SRMR]), parsimony (root mean square error of approximation [RMSEA]), and comparative-fit (Tucker-Lewis index [TLI], and comparative fit index [CFI]) classes of fit indices, and we applied cut-off guidelines recommended by Hu

and Bentler (1999) and Kline (2005) to determine the acceptability of each model. Specifically, RMSEA values  $\leq .06$  and SRMR values  $\leq .08$  were considered an indication of good model fit. CFI and TLI values  $\geq .90$  and  $\geq .95$  were considered as indicators of adequate and good model fit, respectively. In addition, we evaluated the Akaike (1987) and Bayesian (Schwartz, 1978) information criteria (Akaike information criterion [AIC] and Bayesian information criterion [BIC], respectively) to assist in model comparison across non-nested models. AIC and BIC are population based fit indices that favor model parsimony and fit. With these statistics, the preferred model is associated with lower relative values although there are no universally agreed upon guidelines regarding the interpretation of the difference in AIC/BIC values across any two models. In general, greater discrepancy across models suggests the superiority of the model with the lower value whereas models in which these values are more similar may be harder to discriminate (Preacher & Merkle, 2012); this highlights the need to collectively evaluate all fit statistics (Brown, 2006).

IRT analysis was used to evaluate the performance of each item in relation to others within a given symptom cluster. A primary assumption of this type of analysis is that the construct being measured is unidimensional. Because prior factor analytic research on the structure of PTSD symptoms has demonstrated a multidimensional structure, with symptoms within a cluster covarying unidimensionally, we only compared items belonging within the same cluster. IRT analysis generates information curves and item-characteristic curves (ICCs). Information curves depict the strength of the association between a given item and the latent trait underlying its covariation with other symptoms in the analysis and identifies where on the range of the trait information is maximized. ICCs illustrate the relationship between the amount of the trait being measured and the probability of endorsing a given item aggregated, in this case, across the 5 levels of the Likert-like severity scale. Our presentation of IRT results focused on ICCs because these figures convey results for multiple symptoms in the same figure. Information curves for each individual symptom are available from the corresponding author upon request.

## Results

### Trauma Exposure

The majority of participants within the full sample (88%) reported exposure to one or more of 10 nominal *DSM-5* Criterion A events, including disaster, accident, fire, exposure to hazardous chemicals, combat or experience in a war zone, physical or sexual assault, witnessing physical or sexual assault, unexpectedly witnessing dead bodies or body parts, life threat or serious injury to or violent death of a close friend or family member, or exposure to repeated accounts of traumatic events or images primarily because of occupational exposure. The six most prevalent forms of trauma exposure were: physical or sexual assault (52%), accident or fire (50%), death of a close family member or friend because of violence (49%), natural disaster (48%), threat or injury to a close family member or friend (32%), and witnessing physical or sexual assault (31%). The modal number of Criterion A events was 3, with a mean of 3.18 and *SD* of 2.27.

### Frequency of Symptom Endorsement and Estimated Prevalence of PTSD

The frequency of symptom endorsement across the 20 proposed *DSM-5* symptoms within the lifetime PTSD subsample is listed in Table 1. Several noteworthy findings are evident. First, the frequency of symptom endorsement diminished in a step-like fashion across the lifetime ("ever"), past month, and "severity  $>3$  in the past month" columns. Second, the frequency of endorsement of 18 of 20 symptoms in both past month columns was between 26 and 55%. Two symptoms had markedly lower rates of endorsement than all of the others: D1 (amnesia) and E2 (reckless/self-destructive).

Table 2 lists lifetime and past 12-month PTSD prevalence estimates using 3 different diagnostic criteria in the full sample. The prevalence of probable lifetime PTSD using the originally proposed *DSM-5* criteria of 1 Criterion B, 1 Criterion C, 3 Criterion D, and 3 Criterion E symptoms, was 10.4%. A greater percentage of women compared with men met the original criteria for lifetime *DSM-5* PTSD (14.8% of women vs. 5.5% of men),  $\chi^2(1, 2936) = 67.99, p < .0005$ . The percentage of participants meeting each criterion individually was as follows: one B symptom (59%), one C symptom (47%), 3 D symptoms (26%), 3 E symptoms (17%), indicating that Criterion D and E were the most strict of the four symptom criteria. We then examined the effect of reducing the requisite number of Criteria D and E symptoms to two each (i.e., reflecting the revised proposal); this yielded an estimated lifetime prevalence of 16.6%. A greater number of women (23.1%) compared with men (9.7%) met lifetime criteria for the revised definition,  $\chi^2(1, 2936) = 94.38, p < .0005$ . The lifetime prevalence of *DSM-5* PTSD using the original criteria among the subset of trauma-exposed participants (i.e., 88% of the full sample) was 6.3% for men and 16.7% for women, and the lifetime prevalence using the revised *DSM-5* criteria (i.e., requiring only 2D and 2E

Table 1  
Study 1 (National Sample) Frequency of Symptom Endorsement (%) for Participants With Probable Lifetime Posttraumatic Stress Disorder (PTSD)

<i>DSM-5</i> item	Ever	Past month	Severity $\geq 3$
B1: Intrusions	94	53	41
B2: Nightmares	66	30	26
B3: Flashbacks	68	31	28
B4: Emotional reactivity	93	52	46
B5: Physical reactivity	69	38	32
C1: Avoid thoughts	93	52	45
C2: Avoid places/activity	81	43	38
D1: Amnesia	38	11	8
D2: Negative beliefs	79	35	31
D3: Guilt	83	34	29
D4: Negative emotions	93	40	37
D5: Loss of interest	87	39	35
D6: Distant and cut-off	91	46	42
D7: Low positive emotions	76	35	32
E1: Aggression	70	30	27
E2: Reckless/self-destructive	41	8	7
E3: Hypervigilance	77	34	29
E4: Startle	78	40	32
E5: Concentration	80	43	40
E6: Sleep	93	55	51

Note. DSM = Diagnostic and Statistical Manual of Mental Disorders.



Table 2  
*Study 1 (National Sample) Posttraumatic Stress Disorder (PTSD) Prevalence Across Various Criteria*

Criterion	Past 12 months	Lifetime
<i>DSM-5</i> (1B, 1C, 3D, 3E)	5.4	10.4
<i>DSM-5</i> (1B, 1C, 2D, 2E)	9.1	16.6
<i>DSM-IV</i> (1B, 3C, 2D)	9.8	16.4

*Note.* DSM = Diagnostic and Statistical Manual of Mental Disorders. The *DSM-IV* prevalence estimate was computed using the 17 National Stressful Events Survey (NSES) items that corresponded most closely with the *DSM-IV* symptoms. The diagnostic algorithm included exposure to a *DSM-5* criterion A event.

symptoms) was 11.0% for men and 26% for women. Finally, using the 17 NSES items that corresponded to *DSM-IV* symptoms with the *DSM-IV* algorithm (including the *DSM-IV* Criterion A definition), we computed a lifetime *DSM-IV* PTSD prevalence estimate of 16.4%. Of those with lifetime *DSM-IV* PTSD, 63.1% met the original criteria for a lifetime *DSM-5* PTSD diagnosis, and 89.8% met the revised definition for lifetime *DSM-5* PTSD.

The estimate of the prevalence of past 12-month *DSM-5* PTSD using the original criteria was 5.4%.<sup>1</sup> Using this definition, a greater percentage of women compared with men met full criteria for past 12-month *DSM-5* PTSD (7.6% of women vs. 2.9% of men;  $\chi^2(1, 2936) = 31.00, p < .0005$ ). The percentage of participants meeting each criterion individually within the past 12 months was as follows: one B symptom (43%), one C symptom (31%), 3 D symptoms (15%), 3 E symptoms (9%). When we examined the effect of reducing the requisite number of past 12-month Criterion D and E symptoms to two (i.e., the revised criteria), we found that this increased past 12-month PTSD prevalence to 9.1%. As with the lifetime data, there was a greater number of women (12.4%) compared with men (5.4%) who met the revised criteria for past 12-month PTSD,  $\chi^2(1, 2936) = 43.95, p < .0005$ . We estimated a past 12-month *DSM-IV* PTSD prevalence of 9.8%. Of those with past 12-month *DSM-IV* PTSD, 55.2% also met the original criteria for past 12-month *DSM-5* PTSD, and 86.1% met the revised *DSM-5* criteria for past 12-month PTSD (i.e., with both criteria D and E relaxed to 2 symptoms each).

## CFA

Model fit statistics for the four CFA models that we evaluated are listed in Table 3. Results showed that the proposed *DSM-5* model provided acceptable, albeit not excellent, fit to the data. Figure 1 shows the factor loadings and factor correlations for this model. All symptoms loaded strongly (i.e., .58 or greater) on their respective factors with two exceptions: criterion D1 (dissociative or psychogenic amnesia) showed a .41 loading on the negative alterations factor and criterion E2 (reckless or self-destructive behavior) showed only a .41 loading on the hyperarousal factor. In comparison, all other items loaded on negative alterations within the range of .62 to .86 and all of the other hyperarousal items loaded in the range of .58 to .72. BIC and AIC values for the alternative “dysphoria” model suggested a substantial improvement in fit relative to the proposed *DSM-5* model. The third model, combining Criteria B and C as suggested by the high correlations between these factors in the first

two models yielded no significant improvement in fit relative to the proposed *DSM-5* model. The *DSM-IV* model yielded poor fit relative to the other models tested. Finally, because of the strong factor intercorrelations in the *DSM-5* and dysphoria models, we also evaluated the fit of a one-factor model. As shown in Table 3, this model provided poor fit to the data.

## IRT Analysis

IRT analyses for the Criteria B, D, E symptoms terminated normally and yielded no error messages. However, the analysis of the two symptom avoidance cluster yielded multiple error messages that we believe to be related to the use of only two highly correlated items in the analysis. This rendered results for the Criteria C symptom cluster uninterpretable. ICCs for the B, D, E criteria are depicted in Figure 2. In each panel, the *x*-axis is a standardized symptom cluster score with a mean of zero and a *SD* of 1. The *y*-axis is the probability of item endorsement. The curves are a logistic function with each figure permitting comparison of the performance of items within a cluster relative to each other. A basic principle of these graphs is that the steeper and taller the curve, the better the discrimination level between individuals high and low in symptom severity. Conversely, the flatter and lower the curve, the worse the discrimination between individuals differing in symptom severity. In each figure, at the low end of the *x*-axis, increases in symptom severity resulted in only small increases in the probability of endorsing the item. The same was true at the high end of this axis. In the middle though, relatively small increases in symptom severity were associated with large increases in the likelihood of item endorsement.

Comparison of the ICC figures revealed several noteworthy findings. Items within the Criterion B (intrusions) cluster showed largely overlapping curves indicating comparable levels of discrimination and item difficulty across items. The exception to this was symptom B2 (nightmares; the curve the farthest to the right within Criterion B), which showed a slightly elevated level of difficulty, relative to the other intrusion symptoms that more closely paralleled each other. A more distinct pattern of results emerged for the Criterion D and E items. Specifically, item D1 (psychogenic amnesia) deviated considerably from the other items in the D cluster. The shift to the upper end of the *x*-axis indicated that it was the most difficult item (i.e., endorsed by individuals with more severe symptoms) and discriminated relatively poorly (as indicated by the flatter slope) between individuals high and low in severity of symptoms within that cluster. Similarly, within the Criterion E symptoms, item E2 (recklessness or self-destructive behavior) showed the highest level of difficulty, but less discrimination, relative to the other hyperarousal items. Item E1 (irritable or aggressive behavior) evidenced similar, albeit less extreme characteristics. In contrast, item E6 (sleep disturbance; the curve farthest to the left on this figure) was the least difficult item.

<sup>1</sup> For this sample, we present past 12-month and lifetime PTSD estimates to permit direct comparison with estimates of PTSD prevalence from the National Comorbidity Surveys (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995; Kessler, Chiu, Demler, Merikangas, & Walters, 2005).

Table 3

Study 1 (National Sample) Confirmatory Factor Analysis (CFA) Fit Statistics for Each Model

Model	$\chi^2$ (df)	RMSEA	SRMR	CFI	TLI	AIC	BIC
Proposed <i>DSM-5</i> (4 factors)	310.75 (164)	.05	.05	.94	.93	21,130	21,383
Reexperiencing, avoidance, dysphoria, hyperarousal (4 factors)	299.25 (164)	.05	.05	.94	.93	21,114	21,368
Trauma (B + C), negative alterations, hyperarousal (3 factors)	317.13 (167)	.05	.05	.94	.93	21,133	21,375
<i>DSM-IV</i> (3 factors)	379.24 (167)	.06	.05	.91	.90	21,233	21,475
1 factor	522.34 (170)	.08	.06	.85	.83	21,461	21,692

Note. RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual; AIC = Akaike information criterion; CFI = comparative fit index; TLI = Tucker-Lewis Index; BIC = Bayesian information criterion; DSM = Diagnostic and Statistical Manual of Mental Disorders.

## Study 2

The aim of Study 2 was to collect preliminary *DSM-5* PTSD data from a clinical sample of trauma-exposed veterans with an elevated prevalence of PTSD using the same instrument. Aside from necessary changes to the recruitment method (described below), procedures were identical to Study 1 with the following exceptions. First, Criterion C “Persistent avoidance of stimuli associated with the traumatic event(s)” was divided into three rather than two items. The rationale for this exploratory modification was that symptom C2, which reads “Avoids external reminders [people, places, conversations, activities, objects, situations] that arouse recollections of the traumatic event[s],” combines avoidance of discrete external stimuli (people, places, objects) with avoidance of behavioral engagement with the environment (i.e., via conversations and activities). Separating these two seemingly distinct forms of avoidance yielded three items reflecting avoidance of (a) internal reminders, (b) external reminders, and (c) activities.

A second methodological difference between the two studies was that the Veteran’s Affairs (VA) version of the NSES organized the traumatic life events checklist portion of the survey into three life span intervals: (a) events experienced prior to joining the military, (b) events experienced during military service, and (c) events experienced after discharge from the military. The categories of events assessed within the pre- and postmilitary intervals were the same as those used in Study 1. The military service interval included four categories of events: (a) combat or its aftermath, (b) military sexual trauma, (c) other military-related trauma, (d) and nonmilitary service related event.

Finally, the VA study included the *DSM-IV* PTSD Checklist-Civilian Version (PCL-C; Weathers et al., 1993) administered in a counterbalanced order with the NSES. The PCL is the most widely used self-report measure of PTSD in both research and clinical contexts (Ruggiero, Rheingold, Resnick, Kilpatrick, & Galea, 2006). It consists of 17 items that correspond directly to the *DSM-IV* PTSD symptoms, with each one rated on a 5-point severity (i.e., “bothered”) scale. The Civilian as opposed to Military version of the PCL was used to allow for the assessment of PTSD symptoms in response to either military or nonmilitary related traumas (and to correspond more closely to the methodology used in Study 1).

## Method

**Participants.** Veteran participants were recruited via two methods. The first was a recruitment letter mailed to 700 veterans of all service eras (since World War II) who had previously consented to be contacted for research studies at the National

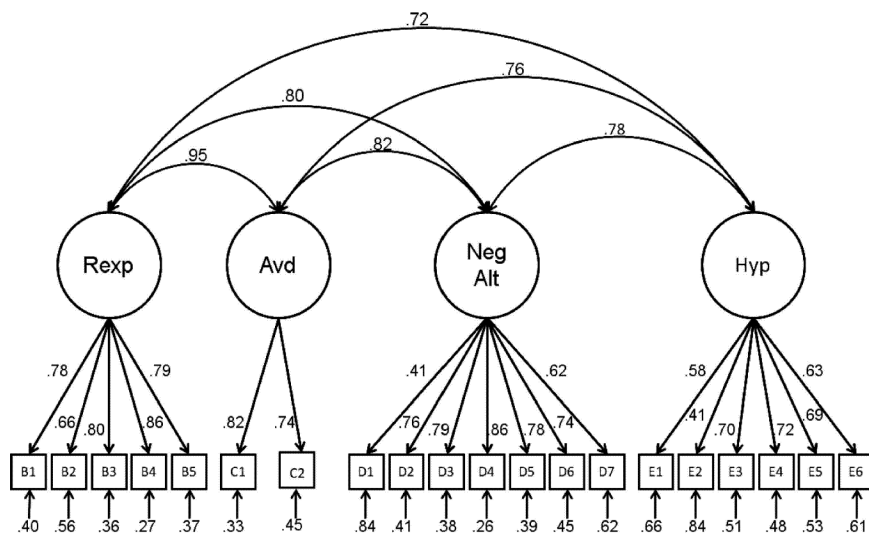


Figure 1. Study 1 (Community Sample) confirmatory factor analysis of the symptom structure implied by the four *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5)* symptom criteria. The figure lists factor correlations and the completely standardized factor loadings and residual variances for each item.

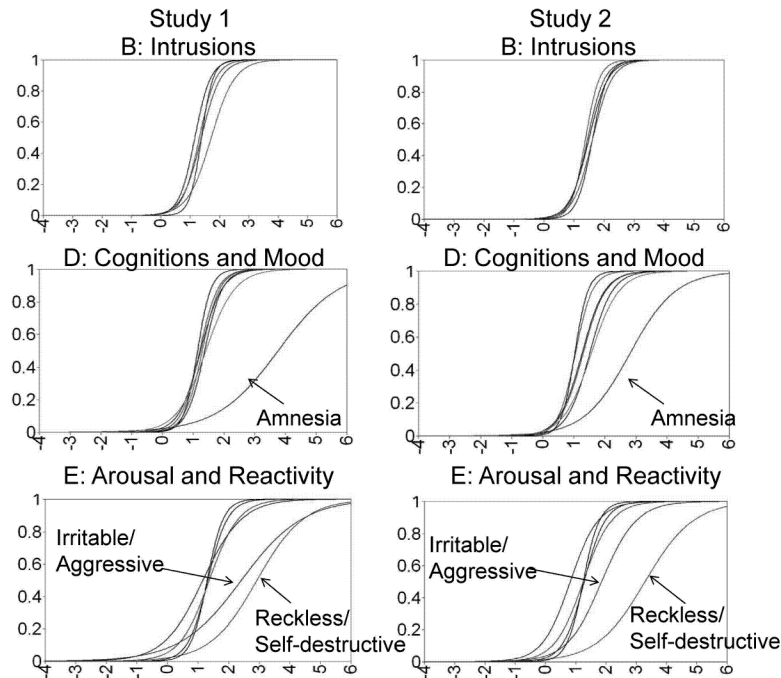


Figure 2. Item characteristic curves for items reflecting the B, D, and E criteria. Study 1 is in the left panel; Study 2 is in the right panel. In each figure, the x-axis is a standardized symptom cluster score with a mean of zero and a *SD* of 1. The y-axis is the probability of item endorsement.<sup>1</sup> For this sample, we present past 12 month and lifetime PTSD estimates to permit direct comparison with estimates of PTSD prevalence from the National Comorbidity Survey (Kessler, Chiu, Demler, Merikangas, & Walters, 2005).<sup>2</sup> In the VA sample we focused on estimates of current PTSD (i.e., past-month as opposed to past 12-month) so we could directly compare NSES estimates to the PCL estimate which was based on reports of symptoms in the past month.<sup>3</sup> It is noteworthy also that the correlation between total current severity scores on the NSES and the PCL-C was  $r = .82$  ( $p < .001$ ).<sup>4</sup> Coefficient alpha for the symptom severity items was .95.<sup>5</sup> This may not be surprising since lowering these thresholds make the *DSM-5* criteria more comparable to those of *DSM-IV* (i.e., since 1 C and 2 D symptoms in *DSM-5* = 3 C symptoms in *DSM-IV*; and 2E symptoms in *DSM-5* = 2 D symptoms in *DSM-IV*).

Center for PTSD in Boston. One hundred seven letters were returned for bad addresses. One hundred twenty-three of the 593 (21%) remaining completed the survey. The second recruitment method involved emailing an invitation to complete the survey to 278 veterans of Operations Enduring Freedom and Iraqi Freedom (OEF/OIF) who were enrolled in an ongoing longitudinal PTSD registry study, the Veterans' Afterdischarge Longitudinal Registry (Rosen et al., 2011). Of these, 222 veterans (80%) endorsed trauma exposure and completed the survey, yielding a total across the two recruitment mechanisms of 345 study participants. Twenty-two participants (8 from the first cohort, 14 from the second) did not complete the symptom assessment and were omitted from data analysis, yielding a final sample of 323 survey completers. Of these, 61% were male and self-reported race and ethnicity was as follows: 80% White, 16% Black, 4% American Indian or Alaskan Native, and 1% Asian. In addition, 5% endorsed Hispanic, Latino, or Spanish ethnicity. The mean age of the sample was 44 (range = 23–85). The majority of the sample (75%) had served in the Operation Iraqi Freedom or Operation Enduring Freedom era; 15% served in the Vietnam War era, 4% served during the Operation Desert Storm era, 1% served in the Korean War or World War II eras. Most (76%) served in the Army; 14% served in the Marine Corps, 7% served in the Navy, and 4% served in the Air Force.

With respect to education, 76% had earned at least a high school diploma or equivalent and 24% had completed a bachelor's or more advanced degree.

## Results

### Trauma Exposure

All participants endorsed having experienced at least one Criterion A event. The five most commonly endorsed types of pre-military trauma exposure were sudden, unexpected death of a close relative or friend due to disease (endorsed by 34% of the sample), physical or sexual assault (28%), having a close family member or friend experience an extraordinary stressful event (27%), death of a close relative or friend due to violence (21%), and witnessing dead bodies or parts of bodies (17%). Combat exposure was the most common type of trauma endorsed during participants' military service (reported by 83% of the sample), followed by exposure to other stressful military experiences (48%), nonmilitary trauma occurring during the time of military service (18%), and military sexual trauma (16%). The five most common traumatic events occurring after participants' military service were the sudden, unexpected death of a close relative or friend due to disease



(32%), a close family member or friend experiencing an extraordinarily stressful event (25%), the death of a close friend or relative because of violence (21%), exposure to details of traumatic events for occupational or other reasons (20%), and witnessing dead bodies or parts of bodies (17%).

### Frequency of Symptom Endorsement and Estimated Prevalence of Probable PTSD

The frequency of symptom endorsement for the VA sample is listed in Table 4. A *t* test revealed that there were no differences in mean total scores on the PCL or the NSES as a function of which measure was presented first (i.e., no significant order effects). Results for the NSES paralleled those observed in the community sample, that is, the frequency of symptom endorsement diminished in a step-like fashion across the lifetime ("ever"), past month, and "severity  $\geq 3$ " columns. Also, as observed in the community sample, items D1 (Amnesia) and E2 (reckless/self-destructive) were endorsed much less frequently than the other items. Table 4 also shows that the frequency of endorsement of past month symptoms with a severity rating greater than or equal to three was lower for NSES items than for the corresponding PCL item despite using similar item language and identical cut-offs using the same 5-point rating scale.

As shown in Table 5, 30.3% of the VA sample met criteria for a probable current diagnosis of PTSD, using the originally proposed *DSM-5* criteria of 1 Criterion B, 1 Criterion C, 3 Criterion D, and 3 Criterion E symptoms, with each symptom endorsed at level of at least moderate severity (a score of 3 or greater on the 1–5 symptom severity scale) in the past month.<sup>2</sup> There were no

differences in the prevalence of the original definition of current PTSD by gender (31.4% of women vs. 29.9% of men)  $\chi^2(1, 318) = .08, p = .78$ . In addition, 67.5% percent met criteria for a probable lifetime diagnosis of *DSM-5* PTSD, using the original definition. A greater percentage of women compared with men met the original criteria for lifetime *DSM-5* PTSD (76.5% of women vs. 64.6% of men),  $\chi^2(1, 314) = 4.87, p = .027$ . The percentage of participants meeting each current criterion individually was as follows: one B symptom (67.5%), one C symptom (59.1%), 3 D symptoms (44.9%), 3 E symptoms (40.9%), indicating that Criteria D and E were the most strict of the four symptom criteria. As in Study 1, we also examined the effect of reducing the requisite number of symptoms in these clusters to two (i.e., the revised proposal) and found this to increase the percentage of cases meeting diagnostic criteria to 38.7% and 75.2% for current and lifetime PTSD, respectively. There were no gender differences in the prevalence of current PTSD using the revised criteria: 40% of women versus 38.6% of men met the current revised criteria for PTSD,  $\chi^2(1, 317) = .06, p = .80$ . Significant gender differences did emerge when evaluating the lifetime revised PTSD criteria: 86.4% of women compared to 72.2% for men met this criteria,  $\chi^2(1, 312) = 8.59, p = .003$ . In comparison, the PCL-C yielded an estimate of current probable PTSD of 61.0% using an established *DSM-IV* PCL-C diagnostic rule (i.e., defined as endorsement of at least one Criterion B, three Criterion C, and two Criterion D symptoms each at a level of 3 [moderate] or greater; Weathers et al., 1993). When this rule was combined with the additional requirement of a PCL-C total score of 50 or greater, estimated prevalence dropped to 51.7%.<sup>3</sup>

Of those who met criteria for a current diagnosis of *DSM-IV* PTSD, as defined by the NSES, 73.6% also met the original criteria for *DSM-5* current PTSD and 86% met the revised *DSM-5* current PTSD criteria. Finally, of those who met *DSM-IV* defined lifetime PTSD, 90.4% met the original *DSM-5* definition for lifetime PTSD and 97.9% met the revised criteria for a *DSM-5* lifetime PTSD diagnosis.

### CFA of Proposed *DSM-5* Factor Structure

Model fit statistics for the four CFA models in this sample of trauma exposed veterans are listed in Table 6.<sup>4</sup> Results showed that the *DSM-5* model provided adequate fit to the data. Figure 3 shows the factor loadings and factor correlations for this model. All symptoms loaded on their respective factors at the  $p < .001$  level, although the magnitudes of loadings of two symptoms on their respective factors were substantially lower than the others. Specifically, criterion D1 (dissociative or psychogenic amnesia) loaded on the Negative Alterations factor at .48 and criterion E2 (reckless or self-destructive behavior) loaded on the hyperarousal factor at .41. In comparison, all other items loaded on negative alterations within the range of .67 to .85 and all of the other hyperarousal items loaded on that factor in the range of .62 to .75.

<sup>2</sup> In the VA sample we focused on estimates of current PTSD (i.e., past-month as opposed to past 12-month) so we could directly compare NSES estimates to the PCL estimate which was based on reports of symptoms in the past month.

<sup>3</sup> It is noteworthy also that the correlation between total current severity scores on the NSES and the PCL-C was  $r = .82 (p < .001)$ .

<sup>4</sup> Coefficient alpha for the symptom severity items was .95.

Table 4  
Study 2 (Veterans Affairs [VA] Sample) Frequency of Symptom Endorsement (%)

<i>DSM-5</i> item	Ever	Past month	Severity $\geq 3$	PCL $\geq 3$
B1: Intrusions	88	71	59	65
B2: Nightmares	78	51	45	54
B3: Flashbacks	74	38	33	49
B4: Emotional reactivity	85	55	51	66
B5: Physical reactivity	81	49	43	59
C1: Avoid thoughts	84	57	50	63
C2: Avoid places	82	51	44	59
C3: Avoid activities	78	49	42	
D1: Amnesia	45	18	14	40
D2: Negative beliefs	68	47	44	46
D3: Guilt	53	41	35	
D4: Negative emotions	74	43	42	
D5: Loss of interest	81	43	40	60
D6: Distant and cutoff	85	48	44	64
D7: Low positive emotions	64	37	35	60
E1: Anger	57	28	26	63
E2: Reckless/self-destructive	43	14	11	
E3: Hypervigilance	83	45	40	65
E4: Startle	86	47	39	60
E5: Concentration	79	51	47	65
E6: Sleep	81	58	53	69

Note. DSM = Diagnostic and Statistical Manual of Mental Disorders; PCL = PTSD Checklist. *DSM-IV* PCL items are aligned with the *DSM-5* item that is most similar in content (i.e., not by criterion number since the proposed order of symptoms has changed in *DSM-5*).

Table 5  
Study 2 (Veterans Affairs [VA] Sample) Posttraumatic Stress Disorder (PTSD) Prevalence Across Various Criteria

Criterion	Current	Lifetime
DSM-5 (1B, 1C, 3D, 3E)	30.3	67.5
DSM-5 (1B, 1C, 2D, 2E)	38.7	75.2
DSM-IV (1B, 3C, 2D)	39.9	74.0
PCL-C	61.0/51.7	

Note. DSM = Diagnostic and Statistical Manual of Mental Disorders; PCL-C = PTSD Checklist (Civilian version) *DSM-IV* prevalence estimate was computed using the 17 National Stressful Events Survey items that most closely correspond with *DSM-IV* items. The PCL estimate lists two figures: The first was based on the *DSM-IV* algorithm with each item endorsed at a level of 3 or greater, the second is the *DSM-IV* algorithm combined with total score of 50 or more.

As in the community sample, BIC and AIC values for the dysphoria model suggested slightly better fit than the *DSM-5* model, though the magnitude of the difference was only 5 points. The third model, combining Criteria B and C yielded poorer fit compared to the first two models across most indices and, as in Study 1, the *DSM-IV* model showed the worst fit of the four models. As in Study 1, we also evaluated the fit of a 1 factor model in the veteran sample and found that it provided poor fit to the data (Table 6).

### IRT of Proposed DSM-5 Scales

As in Study 1, symptoms within the reexperiencing cluster showed largely overlapping curves indicating comparable levels of discrimination and difficulty. Again, a more distinct pattern of results emerged for the Criterion D and E items. Specifically, item D1 (psychogenic amnesia) deviated considerably from the other items in that cluster indicating that it tended to be endorsed by individuals with more severe symptoms and discriminated relatively poorly between those with high versus low symptom severity. Within the Criterion E symptoms, item E2 (recklessness or self-destructive behavior) again showed the highest level of difficulty, but less discrimination, relative to the other hyperarousal items. Item E1 (irritable/aggressive behavior) evidenced similar, albeit somewhat less extreme, characteristics as E2.

### Discussion

These two studies were designed to provide preliminary information about how proposed changes to the PTSD diagnosis might

impact prevalence rates and clarify the latent structure of the new symptom set using CFA- and IRT-based approaches. To do this, we developed an Internet survey to assess event exposure and *DSM-5* PTSD symptoms (Kilpatrick et al., 2010) that was then completed online by a large nationally representative community sample and a second clinical sample of trauma-exposed veterans with a high prevalence of PTSD. Results from the community sample suggested a weighted lifetime prevalence of probable PTSD using the originally proposed *DSM-5* criteria (i.e., 3 D and 3 E symptoms) of 10.4% and past 12-month estimate of 5.4%; the prevalence using the revised *DSM-5* criteria (i.e., 2 D and 2 E symptoms) was 16.6% for lifetime and 9.1% for past 12 months. These findings are somewhat higher than prior estimates of PTSD prevalence in nationally representative U.S. community samples such as the National Comorbidity Survey (7.8% for lifetime prevalence; Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995) and National Comorbidity Survey Replication (3.5% for past 12-month prevalence; Kessler, Chiu, Demler, Merikangas, & Walters, 2005). We further compared our results with those of Kessler et al. (1995) by comparing the prevalence of PTSD among the trauma-exposed samples of the two studies: Kessler et al. (1995) reported that among those exposed to any type of traumatic event, the lifetime prevalence of PTSD was 8.1% in men and 20.4% in women. In comparison, the lifetime prevalence of *DSM-5* PTSD using the 3D/3E criteria among trauma-exposed participants in Study 1 was 6.3% for men and 16.7% for women. Lifetime prevalence using the revised *DSM-5* definition of PTSD (i.e., 2D and 2E symptoms) was 11.0% for men and 26% for women.

In the VA clinical sample, 30.3% of veterans met the original criteria for a probable current diagnosis of PTSD using the proposed *DSM-5* criteria with each symptom endorsed at a level of at least moderate severity in the past month. In addition, 67.5% of the sample met the original criteria for a probable lifetime diagnosis of *DSM-5* PTSD. Reducing the requisite number of symptoms in the Criteria D and E clusters to two (i.e., the revised proposal) increased the percentage of cases meeting *DSM-5* diagnostic criteria to 38.7% and 75.2% for current and lifetime PTSD, respectively. In comparison, the *DSM-IV* PCL-C yielded an estimate of probable current PTSD of 61.0% using the *DSM-IV* diagnostic rule (i.e., one Criterion B, three Criterion C, and two Criterion D symptoms all endorsed at a level of at least moderate severity in the past month).

The large discrepancy between diagnostic prevalence estimates derived from the PCL-C versus NSES in the veteran sample was remarkable given that both assessments were based on past month

Table 6  
Study 2 (Veterans Affairs [VA] Sample) Confirmatory Factor Analysis (CFA) Fit Statistics for Each Model

Model	$\chi^2$ (df)	RMSEA	SRMR	CFI	TLI	AIC	BIC
Proposed <i>DSM-5</i> (4 factors)	386.18 (183)	.06	.04	.93	.92	19,469	19,730
Reexperiencing, avoidance, dysphoria, hyperarousal (4 factors)	381.50 (183)	.06	.04	.93	.92	19,464	19,725
Trauma (B + C), negative alterations, hyperarousal (3 factors)	435.31 (186)	.06	.05	.92	.91	19,529	19,778
<i>DSM-IV</i> (3 factors)	474.16 (186)	.07	.05	.90	.89	19,584	19,833
1-factor	641.23 (189)	.09	.06	.85	.83	19,807	20,045

Note. RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual; CFI = comparative fit index; TLI = Tucker-Lewis Index; AIC = Akaike information criterion; BIC = Bayesian information criterion; DSM = Diagnostic and Statistical Manual of Mental Disorders.



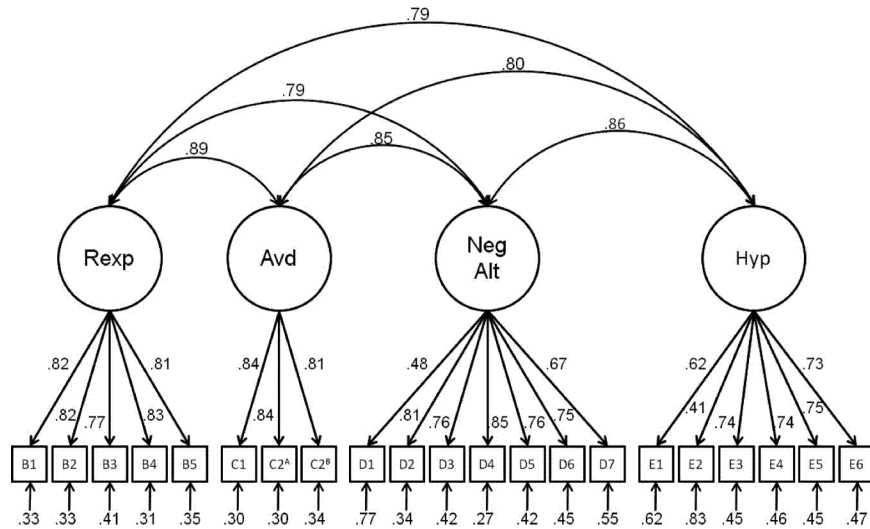


Figure 3. Study 2 (Veteran's Affairs [VA] sample) confirmatory factor analysis of the symptom structure implied by the four *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5)* symptom criteria. In this study criterion C2 was subdivided into two items. Factor correlations are listed, as well as the completely standardized factor loadings and residual variances for each item.

symptom endorsement using the same severity metric. The correlation between the two measures for current symptom severity was high, suggesting that they were measuring the same construct. So what might account for the discrepancy? Previous research suggests that the PCL-C *DSM-IV* scoring rule that we used to compare with the NSES may yield inflated prevalence estimates compared with estimates derived from clinical interview. Keen, Kutter, Niles, and Krinsley (2008), for example, found that although 32.5% of a veteran sample met criteria for a probable diagnosis on the PCL-C using this algorithm, only 22% met criteria as defined by the Clinician Administered PTSD Scale (CAPS; Weathers, Ruscio, & Keane, 1999). It is also conceivable that the discrepancy reflects the difference between the checklist-type assessment of the PCL-C and the interactive conditional-branching assessment of the NSES (which is more similar to structured clinical interviews). The NSES, CAPS, and other measures of this type begin the assessment of each symptom with an inquiry about whether the respondent has ever experienced the symptom (i.e., which can then be used in the assignment of a lifetime diagnosis). If the respondent denies ever having experienced the symptom, no further questions about that symptom are asked and then the next item is presented. In the NSES, if the lifetime symptom was endorsed, then participants were asked to indicate when the symptom was last experienced using a four category temporal scale that ranged from "within the past month" to "more than 1 year ago." Only those who endorsed a given symptom within the past month were then given an opportunity to rate how much they had been bothered by it in the past month using the PCL-like severity scale. It appears from the pattern of results that the more detailed temporal assessment of the NSES yielded significantly reduced endorsements of current symptomatology compared to the checklist approach of the PCL-C. Unfortunately, without a clinical interview-based diagnosis it is not possible to determine which estimate is more accurate though this question can (and should) be addressed in future research.

Given the major differences in response format between the NSES and PCL-C, we also computed *DSM-IV* prevalence estimates using the 17 NSES items that correspond to *DSM-IV* symptoms. In both study samples, *DSM-5* prevalence estimates more closely approximated the *DSM-IV* estimate when the minimum number of Criterion D and Criterion E symptoms was lowered from 3 to 2.<sup>5</sup> Based, in part, on these findings, the *DSM-5* PTSD workgroup is now planning to reduce both the D and E diagnostic thresholds to 2, rather than 3 symptoms as proposed originally.

## Structural Findings

CFAs indicated that the structural model implied by the proposed *DSM-5* B, C, D, and E criteria provided adequate, albeit not excellent, fit to the data. This was true in both the community sample of individuals who met criteria for PTSD using the originally proposed (i.e., 3D and 3E symptoms) definition and for the veteran sample comprised of individuals with trauma exposure and a high prevalence of PTSD, suggesting that the results generalize to both the threshold and subthreshold trauma-exposed populations. We also evaluated four alternative models: a *DSM-5* version of the "dysphoria" model (Simms et al., 2002), a model suggested by preliminary analyses which had the five intrusion and two avoidance symptoms loading on the same factor, one representing the *DSM-IV* structure with criteria C and D combined, and a one-factor model. Results from both studies suggested that the dysphoria model provided the best fit of the five models tested. However, as in prior studies of this type (Yufik & Simms, 2010), the magnitude of improvement relative to the proposed *DSM-5* model was modest. Given the preliminary nature of this research,

<sup>5</sup> This may not be surprising since lowering these thresholds make the *DSM-5* criteria more comparable to those of *DSM-IV* (i.e., since 1 C and 2 D symptoms in *DSM-5* = 3 C symptoms in *DSM-IV*; and 2 E symptoms in *DSM-5* = 2 D symptoms in *DSM-IV*).



we limited our CFA model testing to only the most obvious and logical comparisons. Future studies will undoubtedly examine alternative models, and while it is likely that other solutions may prove better fit to the data, it is also clear that a diagnostic model cannot be validated using CFA fit statistics alone and that obtaining a psychometrically pure diagnostic construct was not the primary objective of the *DSM-5* PTSD workgroup.

Examination of the pattern of factor loadings in the proposed *DSM-5* model indicated that the two new items, “Persistent and exaggerated negative expectations about one’s self, others, or the world” and “Persistent distorted blame of self or others about the cause or consequences of the traumatic event(s),” showed strong loadings on the latent variable reflecting the new Criterion D titled “Negative alterations in cognitions and mood.” The high degree of intercorrelation between items on this factor is compatible with the notion that they share a common cause, that is, are manifestations of the same underlying construct. The results of IRT analyses echoed these observations and indicated that these two new items yielded item-characteristic curves that closely paralleled all but one of the other symptoms in this cluster.

In contrast, results of both studies suggested that the amnesia (“Inability to remember an important aspect of the traumatic event(s)”) and new reckless/self-destructive behavior item yielded relatively weak loadings on their respective factors in CFA and deviated considerably from the others on their respective factors in IRT analyses. The finding of a relatively weak factor loading for the amnesia item replicates, in a new constellation of symptoms, a finding that has been observed in many prior factor analytic studies of PTSD symptoms (e.g., King, Leskin, King, & Weathers, 1998; Palmieri, Weathers, Difede, & King, 2007; Simms et al., 2002). The IRT results shed new light on this result indicating that psychogenic amnesia tended to be endorsed by more highly symptomatic individuals relative to the other items within Criterion D. The ICC curve for the reckless/self-destructive behavior item deviated in a similar fashion from the other items within Criterion E in both samples. These observations would not be necessarily problematic if the slope of the ICC curves for these two items more closely approximated the others within the cluster. However, in both samples, these items showed considerably flatter curves, suggesting poorer discrimination between individuals high and low in symptom severity.

The finding that the amnesia item tended to be endorsed by individuals with higher levels of symptom severity is consistent with prior research on the relationship between dissociation and PTSD. Psychogenic amnesia has long been conceptualized as a manifestation of dissociation (Carlson, Dalenberg, & McDade-Montez, 2012) and recent findings suggest that this symptom is most likely to be endorsed by individuals with a proposed subtype of PTSD defined by marked elevations in depersonalization, derealization, and flashbacks (Lanius, Brand, Vermetten, Frewen, & Spiegel, in press; Wolf et al., 2012). If psychogenic amnesia is indeed a marker of a qualitatively distinct subgroup of individuals with PTSD characterized by marked dissociation, then perhaps there would be benefit to dropping this item from the core symptoms of the disorder and redefining it as a marker of a dissociative subtype. Alternatively, one could argue that this symptom has been viewed as a rare but important part of the PTSD construct since its establishment in 1980, thereby justifying its retention.

Similarly, the “reckless/self-destructive behavior” symptom showed relatively low factor loadings on the latent variable reflecting Criterion E “alterations in arousal and reactivity.” Its item characteristic curve also suggested that it tended to be endorsed by individuals with more severe symptoms and provided relatively poor discrimination between those high versus low in symptom severity. According to members of the PTSD workgroup, this item was intended to address “an important posttraumatic symptom often seen in adolescents” (Friedman et al., 2011, p. 761). Results of these two studies of adults suggest that this item did not cohere well with the core symptoms of hyperarousal. One alternative would be to eliminate this symptom from the core diagnostic criteria and list it instead as an associated feature seen most often among adolescents. However, the problematic behaviors described by this symptom have been identified by many clinicians and researchers as a clinically important feature among many individuals with PTSD, so another view is that it should remain as a core symptom. The latter perspective has the advantage of stimulating more research that may help resolve this issue. In sum, results of these two studies suggest that the PTSD workgroup (and future researchers) may wish to reconsider whether psychogenic amnesia and problems in the domain of reckless/self-destructive behavior would be better conceptualized as core symptoms of PTSD, “associated features” of the disorder, markers of a subtype, or manifestations of PTSD associated primarily with a particular stage of development.

Finally, IRT analyses of both studies showed that many NSES items, particularly within the Criterion B symptoms, showed largely overlapping ICCs. When items overlap like this, it indicates that they are showing equivalent associations with the latent trait (i.e., the relationship between the amount of the trait being measured and the probability of endorsing a given item is equivalent across items). The implications of this are mixed. On the one hand, in this context, similarities in the ICC curves within a symptom cluster may indicate that the items are mapping onto the same latent construct (or symptom cluster). On the other hand, from a test construction perspective, this may be undesirable because it indicates that the items are providing largely redundant information. In future research on the development of PTSD assessment instruments, it may be useful for investigators to develop items that provide greater coverage of the full range of the latent trait.

These conclusions should be weighed in light of study limitations. First, findings were based on Internet surveys using a newly developed instrument that has yet to undergo thorough psychometric refinement and validation in relation to a clinical interview. Second, given the scope of the analyses presented in this preliminary report, we left a number of issues to be addressed in future analyses including more detailed examinations of the relationships between events of various types and subsequent symptoms. Third, the focus of the assessment in both studies was on event exposure and PTSD symptoms and we did not assess many relevant variables such as comorbidity. That said, our findings provide important preliminary findings regarding the effect of changes to the PTSD diagnosis proposed for *DSM-5* and identify several issues for further consideration by the workgroup.

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