The Stressor Criterion for Posttraumatic Stress Disorder: Does It Matter?

Andrea L. Roberts, PhD; Bruce P. Dohrenwend, PhD; Allison E. Aiello, ScD; Rosalind J. Wright, MD, MPH; Andreas Maercker, MD, PhD; Sandro Galea, MD, DrPH; and Karestan C. Koenen, PhD

ABSTRACT

Objective: The definition of the stressor criterion (*DSM* criterion A1) for posttraumatic stress disorder (PTSD) is hotly debated with major revisions being considered for *DSM-5*. We examine whether symptoms, course, and consequences of PTSD vary predictably with the type of stressful event that precipitates symptoms.

Method: We used data from the 2009 PTSD diagnostic subsample (N = 3,013) of women from the Nurses' Health Study II. We asked respondents about exposure to stressful events that qualified under *DSM-III* or *DSM-IV* or did not qualify under *DSM* criterion A1. Respondents selected the event they considered worst and reported subsequent PTSD symptoms. Among participants who met all other *DSM-IV* PTSD criteria, we compared distress, symptom severity, duration, impairment, receipt of professional help, and 9 physical, behavioral, and psychiatric sequelae (eg, physical functioning, unemployment, depression) by precipitating event group. Various assessment tools were used to determine fulfillment of PTSD criteria B through F and to assess these 14 outcomes.

Results: Participants with PTSD from *DSM-III* events reported, on average, 1 more symptom (*DSM-III*, mean = 11.8 symptoms; *DSM-IV*, mean = 10.7 [$P < .001$]; non-*DSM*, mean = 10.9 [$P < .01$]) and more often reported that symptoms lasted 1 year or longer compared to participants with PTSD from other groups (*DSM-III* vs *DSM-IV*, $P < .01$; *DSM-III* vs non-*DSM*, $P < .001$). However, sequelae of PTSD did not vary systematically with precipitating event type.

Conclusions: Results indicate the stressor criterion as defined by the *DSM* may not be informative in characterizing PTSD symptoms and sequelae. In the context of ongoing *DSM-5* revision, these results suggest that criterion A1 could be expanded in *DSM-5* without much consequence for our understanding of PTSD phenomenology. Events not considered qualifying stressors under the *DSM* produced PTSD as consequential as PTSD following *DSM-III* events, suggesting PTSD may be an aberrantly severe but nonspecific stress response syndrome.

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Corresponding author: *Andrea L. Roberts, PhD, Harvard School of Public Health, 677 Huntington Ave, Boston, MA 02115 (aroberts@hsph.harvard.edu).*

The diagnosis of posttraumatic stress disorder (PTSD) requires exposure to a potentially traumatic event, referred to as "criterion A" in the *DSM*. Since the construction of diagnostic criteria for PTSD, the requirement and definition of criterion A have been controversial. Critics have pointed out that precisely defining events that qualify as highly stressful is challenging,[1] that individuals can experience a PTSD-like syndrome in response to a wide variety of stressors (reviewed in Dohrenwend[2]), and that there has been no support for particular stressors producing distinct variants of other disorders, such as postpartum depression.[3]

Partly in response to these criticisms, the definition of criterion A has changed substantially since *DSM-III*.[4] Initially, *DSM-III* mandated that PTSD be diagnosed only subsequent to a life-threatening event so intense that it was outside the range of normal human experience; for example, active combat, natural disaster, or rape. In *DSM-IV*, criterion A was split into 2 parts. Criterion A1, the event itself, was no longer required to be outside the range of normal experiences: witnessing or being confronted with events that merely threatened serious injury was sufficient. A new criterion A2 was also added, which required events to elicit horror, intense fear, or helplessness.[5] However, recent research has found criterion A2 to be redundant with other diagnostic criteria; therefore, we focus this article on criterion A1.[6] Criterion A1 is being considered for revision again in *DSM-5*, provoking intense debate about whether to leave the definition as is,[7] narrow it,[8] or drop criterion A1 altogether.[9,10]

The definition of criterion A1 has implications for nosology, theory, and practice. For nosology, criterion A1 determines who is eligible for the diagnosis of PTSD and whether people with PTSD-like symptoms are diagnosed with PTSD, with adjustment disorder, or with another anxiety or mood disorder. For theory, fear conditioning has been proposed as a central mechanism of PTSD.[11] If a similar stress syndrome arises both from fear-inducing events, such as violence, and from events that typically do not involve intense fear, such as job loss or divorce, then the fear conditioning model is no longer central to the diagnosis.[5] For practice, patients diagnosed with PTSD may be more likely to qualify for insurance coverage for their treatment or be compensated for their traumatic experience in court.[12] Treatments developed for PTSD related to *DSM-III* stressors may not be effective for PTSD from ordinary stressors.[13]

This article examines whether the definition of criterion A1 matters. By "matters," we mean, Do symptoms, course, and consequences of PTSD vary predictably with the type of stressful event that precipitates PTSD? Although many studies have shown that more intense event exposures increase the likelihood of developing PTSD, few have examined the relationship between event type and symptoms, chronicity,[14] distress,[15] impairment,[16] or sequelae of PTSD. Specifically, we consider 3 questions: (1) Are *DSM-III*–qualifying events typically ranked as being worse than other stressful events? (2) Are people more likely to

develop PTSD from *DSM-III* worst events than from *DSM-IV* or non-*DSM* worst events? and (3) Do *DSM-III* worst events compared with *DSM-IV* and non-*DSM* worst events lead to a more serious form of PTSD with more sequelae?

- Persons experiencing non-*DSM* events may meet all other criteria for posttraumatic stress disorder (PTSD).
- Trauma-focused cognitive-behavioral therapies such as prolonged exposure and cognitive processing therapy are highly effective for PTSD. Patients experiencing PTSD symptoms from non-*DSM* events such as financial crisis or divorce may benefit from these treatments.
- Among patients with PTSD, the physical and mental health sequelae of PTSD do not differ by triggering event.

Clinical Points

METHOD

Sample Creation

We used data from the Nurses' Health Study II, a cohort of 116,430 female nurses from the 14 most populous US states whose nursing boards were able to provide information on nurses' gender and birth date. The cohort was established in 1989 and followed up with biennial questionnaires. Briefly, in 2008 we mailed the Trauma and PTSD Screening Questionnaire[17] to 60,804 Nurses' Health Study II participants who had completed recent questionnaires (to retain participation in the longitudinal study, participants who have not responded to the most recent biennial questionnaire are not asked to participate in supplemental studies). The response rate was 89% (N = 54,282). Of these 54,282 respondents, 43,413 reported exposure to at least 1 traumatic event on the Trauma and PTSD Screening Questionnaire. Of these, 23,104 respondents agreed to be interviewed (53%). We then identified probable PTSD cases and trauma-exposed controls using Breslau's lifetime PTSD screen,[18] which classifies PTSD cases with 85% sensitivity, 93% specificity, 68% positive predictive value, and 98% negative predictive value.

We randomly selected 2,112 probable PTSD cases and 2,001 probable controls for diagnostic interviews. Among those selected, 3,013 people (73%) completed interviews, including 1,510 people with probable PTSD (71% completion rate) and 1,503 people without probable PTSD (75% completion rate). Compared with the whole Nurses' Health Study II cohort of 116,678, our sample was somewhat more likely to be white (98.1% versus 95.5%), was slightly younger (mean age = 53.3 years versus 54.5 years), and was more likely to be married (81.2% versus 77.4%, $P < .001$ for all comparisons) at the establishment of the cohort in 1989. The Partners Human Research Committee approved this study; the protocol has been published.[19]

Diagnostic Interviews

We interviewed participants via telephone using a highly structured interview. The PTSD Checklist, a 17-item self-report measure of *DSM-IV* PTSD symptoms,[20] was used to assess reexperiencing symptoms (criterion B), avoidance/numbing symptoms (criterion C), and arousal symptoms (criterion D). Participants were cued to think of the period following the event during which symptoms were most frequent and intense and were then asked whether they had ever been bothered by each of the 17 symptoms. Participants rated each symptom on a scale indicating how much they had been bothered by that symptom as a result of the event, from "not at all" to "extremely."[21] To be a PTSD case, respondents must have reported experiencing 1 or more of the 5 reexperiencing symptoms, 3 or more of the 7 avoidance/numbing symptoms, and 2 or more of the 5 arousal symptoms at least "moderately." Additional questions assessed the other 3 *DSM-IV* criteria: intense fear, horror, or helplessness in response to the event (criterion A2), symptom duration of at least 1 month (criterion E), and clinically significant impairment in functioning due to symptoms (criterion F).[22] The PTSD Checklist had excellent internal consistency (Cronbach $\alpha = 0.87$).

Participants were initially asked to identify stressful events they had experienced from a list of 25 events, including both events standard in diagnostic interviews of PTSD and events included in measures of life stressors, following event lists used in diagnostic interviews in epidemiologic samples including the World Health Organization (WHO) Composite International Diagnostic Interview (CIDI)[22,23] and the NIMH Diagnostic Interview Schedule[24–26] (available from K.C.K. upon request). They were further asked an open-response question: Had they experienced any other very stressful situation or event? Events described in response were recorded verbatim. Posttraumatic stress disorder symptoms were then assessed by referencing the event that the participant regarded as the worst. Respondents were considered affected by lifetime PTSD if all 6 *DSM-IV* criteria were met in reference to the worst event. To assess reliability, a blind review of audiotapes from 50 interviews was conducted by the senior author, (K.C.K.), a licensed clinical psychologist who is an experienced diagnostician specializing in PTSD treatment. Reliability was assessed by comparing this diagnosis with that made via computer algorithm from the structured interviews using Cohen κ statistic. The κ was 1.0 (perfect reliability).

Our diagnostic interview also assessed lifetime depression via a modified version of the Patient Health Questionnaire (PHQ-9)[27] by using the *DSM-IV* coding criteria. The PHQ-9 had excellent internal consistency ($\alpha = 0.87$).

We assessed the validity of our identification of PTSD and depression in a separate cohort, the Detroit Neighborhood Health Study, via clinical interviews among a random subsample of 51 participants.[28,29] A licensed psychologist conducted 1-hour in-person clinical interviews, using the Clinician-Administered PTSD Scale for *DSM-IV* to evaluate PTSD[30] and the Structured Clinical Interview for *DSM-IV* Disorders to evaluate depression.[31] The psychologist was blinded to the information obtained from the main study. Comparison of the clinical interviews with the PTSD

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Checklist and PHQ-9 from the main study showed excellent concordance for both PTSD and depression.[28,29]

Measures

Traumatic event classification. For analysis, events were categorized in 1 of 3 mutually exclusive groups. The *DSM-III*–qualifying events included events that threatened life or physical integrity, such as disasters, interpersonal violence, and serious accidents.[4] Events that qualified only under *DSM-III-R*/*DSM-IV* and not *DSM-III* criteria were serious illness, witnessing violence, and serious events to someone close, including sudden death.[20] Events not qualifying under any *DSM* criteria included, for example, serious financial or legal problems and sexual harassment at work. Added to this group were other experiences women described in the open-ended question: for example, marital problems, divorce, and job loss. Answers to the open-ended question were grouped into 7 categories by a research assistant and the first author (A.L.R.) and were reviewed by the senior author (K.C.K.) (Table 1).

PTSD definition. For this analysis, we classified people as PTSD cases if they met the B, C, D, E, and F criteria for PTSD related to their worst event via structured interview as described above, *whether or not the worst event fit under* DSM-IV *criterion A1 or A2.*

PTSD phenomenology. We asked participants the age at which their worst event occurred. We counted the number of criterion B, C, and D symptoms that the participant endorsed as moderately or severely distressing. We assessed symptom duration with 1 question about the longest time period symptoms were experienced. The 5 response options were less than 1 month, between 1 and 3 months, between 3 and 6 months, between 6 months and 1 year, or more than 1 year. Participants rated distress related to symptoms from "not at all distressing" to "severely distressing," and they rated difficulties at work, home, and in social interactions due to symptoms from "not difficult at all" to "extremely difficult."

Sequelae. We used age-at-onset information from the diagnostic interview described above to determine if participants experienced a first-onset depression following their worst event. For other possible sequelae, age-at-onset information was not available; therefore, we assessed these behaviors and health indicators at a single time point following the worst event. In addition to responses provided during our interview, responses provided to 2 questionnaires given to the whole cohort in 2001 and 2005 were used to examine possible PTSD sequelae. The 2005 questionnaire queried body mass index, current smoking, binge drinking, exercise frequency, and phobic anxiety. Binge drinking was assessed with a single question: "In a typical month during the past year, what was the largest number of drinks of beer, wine, and/or liquor you may have had in one day?" Six or more drinks in a day on a typical month was considered binge drinking.[32] Phobic anxiety was assessed with the Crown-Crisp index[33]; the total score was divided into 4 groups indicating no anxiety to highest level of anxiety.[34] Physical functioning was assessed in 2001 with the Short Form 36 Health Survey.[35] The PTSD diagnostic interview included questions about unemployment and about divorced or separated status among participants ever married.

Data Analyses

Are* DSM-III *events typically ranked as being worse than other events? We ranked events based on the frequency with which each event was selected as worst among women exposed to it. To adjust for the number of other events people were exposed to, we also calculated likelihood of being chosen as worst in pairwise comparisons. For example, a respondent who had experienced mugging, financial crisis, and a serious accident and selected mugging as worst would contribute information to the mugging/financial crisis and mugging/accident comparisons, and mugging would be ranked worse in each comparison. Since we do not know whether the respondent considered the financial crisis worse than the accident, this pair would not contribute to the event rankings. We then calculated the percentage of times each event was chosen as worst in these comparisons across all participants, and ranked events accordingly. Finally, we looked at participants who had been exposed to events from all 3 groups, and reported the percentage of these participants choosing a worst event from each group.

Are people more likely to develop PTSD from* DSM-III *worst events compared with* DSM-IV *or non-*DSM *worst events? We calculated the odds ratios of developing PTSD from non-*DSM* and *DSM-IV* worst events compared with *DSM-III* worst events.

Do* DSM-III *events compared with other event types lead to a more serious form of PTSD with more sequelae? To assess whether PTSD resulting from *DSM-III* events was experienced as more deleterious than that resulting from events in the other 2 groups, we compared distress, symptom duration, impairment, and receipt of professional help among participants who met PTSD criteria from the 3 event groups by using χ^2 tests.

In further exploration of possible differences in PTSD resulting from different events, we compared physical, behavioral, and psychiatric sequelae in participants with PTSD from the 3 event groups to participants without PTSD. We examined physical functioning, body mass index, exercise, smoking, binge drinking, phobic anxiety, depression, unemployment, and divorced or separated status after the worst event by event group. Women who experienced their worst event following the year in which a given sequela was assessed were excluded from analyses involving that sequela. We tested for differences in these sequelae in participants who had PTSD from *DSM-IV* and non-*DSM* events with the no-PTSD group and compared with participants who had PTSD from a *DSM-III* event, using Student *t* test for continuous measures and χ^2 tests for ordinal and dichotomous measures. We conducted a Cox survival analysis to assess whether PTSD from each event group increased hazard of first episode of major depression, adjusted for age at interview. All tests were 2-sided.

Table 1. Potentially Traumatic Events and Their Likelihood of Being Chosen as Worst (N = 3,013)

Event	No. Exposed	Selected as Worst Event Among Women Exposed, % (n)	Rank of Worst Among Exposed (1 = most often chosen)
DSM-III–qualifying events			
Rape (childhood or adulthood)	753	27.1 (204)	2
Intimate-partner violence	637	18.7 (119)	3
Combat	74	14.9 (11)	5
Unwanted sexual contact (childhood or adulthood)	1,040	12.1 (126)	6
Childhood physical abuse	718	12.4 (89)	8
Other dangerous situation	578	10.6 (61)	10
Serious accident	898	9.1 (82)	12
Man-made disaster	447	6.3 (28)	16
Physical assault	426	5.2 (22)	18
Stalking	548	4.0 (22)	19
Natural disaster	811	3.8 (31)	20
Robbery, mugging	489	2.3 (11)	23
DSM-III-R/DSM-IV–qualifying events			
Unexpected death of someone close	2,004	36.2 (725)	1
Someone close with serious injury, illness	2,608	15.4 (401)	4
Serious illness	1,413	12.0 (170)	7
Witness to parents' fighting	906	3.5 (32)	21
Witness to violence	1,003	2.7 (27)	22
Events not qualifying under *DSM*			
Miscarriage	1,054	10.1 (106)	9
Someone close with serious mental illness	1,582	9.9 (156)	11
Parents' substance problems	851	6.8 (58)	13
Serious financial problems	323	6.8 (22)	14
Serious legal problems	515	6.8 (35)	15
Pregnancy complications	795	7.0 (56)	17
Sexual harassment at work	840	1.4 (12)	24
Parents' serious legal problems, jail	174	0.6 (1)	25
Volunteered responses not qualifying under *DSM*			
Someone close with drugs, crime	97	Not applicable	Not applicable
Marital problems	62	…	…
Divorce	203	…	…
Job loss	52	…	…
Job stress	92	…	…
Other stressful event to someone close	38	…	…
Other stressful event to self	126	…	…

RESULTS

Are *DSM-III* Events Typically Ranked as Being Worse Than Other Events?

By sample design, nearly every participant (99.7%, n = 3,005) was exposed to a potentially traumatic event (mean = 7.4 events). Individual events varied substantially in their probability of being chosen as the worst event among participants exposed, from sudden death of someone close, chosen as worst by 36.2% of participants exposed, to parents' serious legal problems, chosen as worst by 0.6% of participants exposed. While some *DSM-III* events, such as rape and intimate partner violence, ranked among the most often chosen, others, such as disasters and muggings, ranked among the least often chosen (Table 1). Pairwise rankings, which accounted for number of events to which participants were exposed, produced nearly identical results. Three-quarters of participants (76.3%, n = 2,299) were exposed to events from all 3 groups. Only 30.1% of these participants selected the *DSM-III*–qualifying events as their worst, while 41.0% chose a *DSM-III-R*/*DSM-IV* event, and 25.6% chose a non-*DSM* event.

Are People More Likely to Develop PTSD From *DSM-III* Worst Events Compared With *DSM-IV* and Non-*DSM* Worst Events?

We found no difference between non-*DSM* and *DSM-III* worst events in odds of PTSD (OR = 1.0; 95% CI, 0.8–1.2; $P = .7$), although odds of PTSD from *DSM-IV* events were significantly lower than odds from *DSM-III* events (OR = 0.6; 95% CI, 0.5–0.7; $P < .0001$).

Do *DSM-III* Events Lead to a More Serious Form of PTSD With More Sequelae Than Other Events?

Table 2 presents PTSD phenomenology by event type. Participants with PTSD from *DSM-III* events reported more symptoms and more often reported that symptoms lasted 1 year or longer compared to participants with PTSD from the other groups. Distress and impairment from symptoms did not differ significantly across event groups.

Overall, participants with PTSD had poorer health-related behaviors and worse physical and psychiatric sequelae compared to participants without PTSD, with no systematic differences in these outcomes between precipitating event groups. Following their worst event, participants in all 3 PTSD groups were statistically significantly more likely to report highest levels of phobic anxiety and were at increased risk of depression compared to participants who did not develop PTSD from their worst events. Physical functioning was significantly worse in participants who experienced PTSD from *DSM* events compared to participants without PTSD but did not significantly differ in participants with PTSD from non-*DSM* events (Table 3).

Prevalence of divorce or separation was approximately double in participants with PTSD from *DSM-III* (23.3%) or nonqualifying events (19.9%) compared to participants without PTSD (11.1%) but was not significantly elevated in participants with PTSD from *DSM-IV* events. Unemployment was also significantly more common in participants with *DSM-III*– and non-*DSM*–related PTSD compared to participants without PTSD (Table 3).

Compared to participants with PTSD from a *DSM-III* event, physical, behavioral, and mental health indicators did not statistically differ in the other 2 groups, except that divorce was more common among participants in the *DSM-III* group than among participants in the *DSM-IV* group, and risk of depression onset was lower among participants in the *DSM-III* group than among participants in the *DSM-IV* group.

Table 2. Posttraumatic Stress Disorder (PTSD) Phenomenology by PTSD Status and Event Type

Phenomenology	No PTSD (n = 2,304)	*DSM-III* PTSD (n = 228)	*DSM-IV* PTSD (n = 243)	Non-*DSM* PTSD (n = 205)	Comparison Summary
No. of symptoms, mean					
Reexperiencing (5 maximum)	1.2	3.4	3.1**	3.1*	*DSM-III* > *DSM-IV*; *DSM-III* > non-*DSM*
Avoidance (7 maximum)	1.1	4.7	4.4**	4.5	*DSM-III* > *DSM-IV*
Arousal (5 maximum)	1.0	3.6	3.3***	3.3***	*DSM-III* > *DSM-IV*; *DSM-III* > non-*DSM*
Total	3.4	11.8	10.7***	10.9**	*DSM-III* > *DSM-IV*; *DSM-III* > non-*DSM*
Symptom impairment, distress, duration, %					
Symptoms made work, home, social tasks extremely difficult	2.6	22.5	18.7	20.3	*DSM-III* not different than *DSM-IV* or non-*DSM*
Symptoms were severely distressing	6.6	37.7	38.3	36.6	*DSM-III* not different than *DSM-IV* or non-*DSM*
Symptoms lasted more than 1 year	40.4	82.5	67.1**	65.4***	*DSM-III* > *DSM-IV*; *DSM-III* > non-*DSM*
Received professional treatment for symptoms, %	41.0	78.0	72.9	68.1*	*DSM-III* > non-*DSM*

*Difference with *DSM-III* PTSD group significant, $P < .05$.
**Difference with *DSM-III* PTSD group significant, $P < .01$.
***Difference with *DSM-III* PTSD group significant, $P < .001$.

Table 3. Sequelae Following Worst Event by Posttraumatic Stress Disorder (PTSD) Status and Event Type

Variable	No PTSD (n = 2,304)	*DSM-III* PTSD (n = 228)	*DSM-IV* PTSD (n = 243)	Non-*DSM* PTSD (n = 205)	Comparison Summary
Depression onset following PTSD onset, hazard ratio	1.0 [Reference]	3.0***	4.1***	3.7***	All PTSD groups > no PTSD; *DSM-IV* > *DSM-III*
Phobic anxiety, %[a]	22.1	35.1***	42.1***	31.1*	All PTSD groups > no PTSD; no difference between *DSM-III* and other PTSD groups
SF-36 score (physical functioning), mean[b]	88.9	83.5***	81.7***	85.8	*DSM-III* < no PTSD; *DSM-IV* < no PTSD; no difference between *DSM-III* and other PTSD groups
Divorced or separated, among women ever married, %[c]	11.1	23.3***	13.7	19.9**	*DSM-III* > no PTSD; non-*DSM* > no PTSD; *DSM-III* > *DSM-IV*
Unemployed, %[d]	3.0	6.6**	4.5	6.1*	*DSM-III* > no PTSD; non-*DSM* > no PTSD; no difference between *DSM-III* and other PTSD groups
Smoker, %[a]	4.7	11.6***	4.7	7.2	*DSM-III* > no PTSD; no difference between *DSM-III* and other PTSD groups
Body mass index, mean[a]	26.8	27.5	27.8*	27.9*	*DSM-IV* > no PTSD; non-*DSM* > no PTSD; no difference between *DSM-III* and other PTSD groups
Exercise, mean, d/wk[a]	3.0	2.9	2.7	2.6**	Non-*DSM* < no PTSD; no difference between *DSM-III* and other PTSD groups
Binge drinking, %[a]	3.3	1.9	2.1	2.7	No differences

[a]Restricted to women whose worst event was before 2005, when phobic anxiety, smoking, exercise, binge drinking, and body mass index were assessed.
[b]Lower score is worse; range, 0–100. This measure was restricted to women whose worst event was before 2001, when physical functioning was assessed.
[c]Excluding women whose worst event was assault by intimate partner, divorce, or marital problems.
[d]Excluding women who listed job loss as their worst event.
*Difference with no-PTSD group significant, $P < .05$.
**Difference with no-PTSD group significant, $P < .01$.
***Difference with no-PTSD group significant, $P < .001$.
Abbreviation: SF-36 = Short Form 36 Health Survey.

Because *DSM-III* events included both events frequently considered worst and events infrequently considered worst, we conducted supplemental analyses to see if grouping events instead by frequency with which they were selected as worst would reveal a dose response with phenomenology and sequelae. Mirroring results from the main analyses, we found no systematic differences (Supplementary eTable 1). Additionally, because presence of more risk factors for PTSD among persons developing symptoms from non-*DSM* worst events may have accounted for the similarities among PTSD sequelae that we found, we conducted additional analyses examining 5 risk factors for PTSD by PTSD type: number of other event types endorsed, depression prior to PTSD, exposure to childhood physical and sexual abuse, and age at worst trauma. Contrary to this hypothesis, persons with PTSD from *DSM-III* events were more likely to have experienced their event before age 11 years and were exposed to more other event types than persons with *DSM-IV* or non-*DSM* PTSD. There were no other differences in prevalence of individual risk factors or total number of risk factors by PTSD group.

DISCUSSION

Our principal finding is that sequelae of PTSD did not vary systematically with the type of stressful event that initiated PTSD symptoms, whether the symptoms were qualified according to *DSM-III* or *DSM-IV* or not qualified under

DSM. Although individual events differed substantially in their likelihood of being chosen as a worst event, *DSM* events as a group were not consistently more likely to be chosen than other events, with some *DSM* events among the most often chosen and some among the least often chosen. Although the number and duration of symptoms were slightly higher for PTSD resulting from *DSM-III*–qualifying events, on the whole, the stressor criterion A1 did not seem to matter for PTSD phenomenology in our study.

Because types of events varied in their likelihood of being chosen as worst but seriousness of PTSD resulting from worst events did not differ, our results are consistent with at least 2 possibilities. First, event type may be only an approximate indicator of a specific event's intensity. Respondents choosing "mild" types as their worst event may have experienced unusually intense instances. This hypothesis could be tested in further research that obtained more information about what happened in these instances.[36] Second, the effect of the intensity of the inciting event on symptoms, health, and behavior may diminish once the PTSD diagnostic threshold has been reached: the relationship between event intensity and PTSD symptoms and sequelae may be curvilinear rather than dose response.[5]

Our results should be considered in light of several limitations. Because our PTSD subsample was composed of women in the 20th year of a longitudinal cohort study, it is possible that the seriousness of PTSD from different events appeared similar because people with more serious cases of PTSD had previously dropped out of the study. However, in supplemental analyses with women of similar ages and race in the National Epidemiologic Survey of Alcohol-Related Conditions, a nationally representative sample of US adults,[37] risk ratios for sequelae from PTSD were similar (Supplementary eTable 2). All measures were self-reported, which may introduce bias. However, use of data collected at different times reduces the possible influence of current mental health on report of PTSD sequelae. Finally, our sample is primarily white US women ages 44 to 63 years; therefore, results may not apply to other demographic groups. Nevertheless, this study provides the most comprehensive examination to date of criterion A1 stressors by contrast with other stressors in relation to the PTSD symptom syndrome and sequelae.

Our results suggest that the stressor criterion as defined by the *DSM* may not be informative in characterizing symptoms and sequelae of PTSD among persons meeting all other PTSD criteria. Three suggestions emerge from this observation. First, in the context of the ongoing *DSM-5* revision, these results suggest that criterion A1 could be expanded in *DSM-5* without much consequence for our understanding of PTSD phenomenology. Second, events not considered qualifying stressors under the *DSM* produced PTSD as consequential as PTSD following *DSM-III* events, suggesting PTSD may be an aberrantly severe response to many types of stressors, not just to extreme stressors. Our findings that sudden death of a loved one and serious illness or injury to a loved one were among the stressors most often rated as worst further suggests that the *DSM* has been overly focused on events with intense physical as opposed to psychological impact. Death or injury to a loved one is very different from *DSM-III* events that are personally life threatening, occur in circumstances outside of ordinary human experience, and primarily evoke intense fear. Finally, our study does not support the concept of distinct subtypes of stress-response syndromes arising from different stressors. Our findings are consistent with a growing literature that suggests psychopathology following events like financial or legal problems, neither of which are included in even the broadened *DSM-IV* criterion A1 and traditionally are diagnosed as an adjustment disorder, may be similar phenomenologically to PTSD.[38]

Author affiliations: Departments of Society, Human Development, and Health and Epidemiology, Harvard School of Public Health (Drs Roberts and Koenen); Channing Laboratory, Brigham and Women's Hospital, Harvard Medical School (Dr Wright), Boston, Massachusetts; Department of Epidemiology, Mailman School of Public Health, Columbia University, New York, New York (Drs Dohrenwend, Galea, and Koenen); Department of Epidemiology, University of Michigan School of Public Health, Ann Arbor, Michigan (Dr Aiello); and Department of Psychopathology and Clinical Intervention, University of Zurich, Zurich, Switzerland (Dr Maercker).
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Supplementary material: See accompanying pages.

REFERENCES

1. Davidson JRT, Foa EB. Diagnostic issues in posttraumatic stress disorder: considerations for the *DSM-IV*. *J Abnorm Psychol*. 1991;100(3):346–355.
2. Dohrenwend BP. The stressor criterion A in posttraumatic stress disorder: Issues, evidence, and implications. In: Simpson HB, Lewis-Fernandez R, Neria Y, et al, eds. *Anxiety Disorders: Theory, Research and Clinical Perspectives*. Cambridge, England: Cambridge University Press; 2010:216–226.
3. Breslau N, Davis GC. Posttraumatic stress disorder: the stressor criterion. *J Nerv Ment Dis*. 1987;175(5):255–264.
4. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders*, Third Edition. Washington, DC: American Psychiatric Association; 1980.
5. McNally RJ. Progress and controversy in the study of posttraumatic stress disorder. *Annu Rev Psychol*. 2003;54(1):229–252.
6. Anders SL, Frazier PA, Frankfurt SB. Variations in Criterion A and PTSD rates in a community sample of women. *J Anxiety Disord*. 2011;25(2):176–184.
7. Weathers FW, Keane TM. The Criterion A problem revisited: controversies and challenges in defining and measuring psychological trauma. *J Trauma Stress*. 2007;20(2):107–121.
8. McNally RJ. Can we fix PTSD in *DSM-V*? *Depress Anxiety*. 2009;26(7):597–600.
9. Brewin CR, Lanius RA, Novac A, et al. Reformulating PTSD for *DSM-V*: life after Criterion A. *J Trauma Stress*. 2009;22(5):366–373.
10. Maier T. Weathers' and Keane's, "The criterion A problem revisited: controversies and challenges in defining and measuring psychological trauma." *J Trauma Stress*. 2007;20(5):915–916, discussion 917–919.
11. Jovanovic T, Ressler KJ. How the neurocircuitry and genetics of fear inhibition may inform our understanding of PTSD. *Am J Psychiatry*. 2010;167(6):648–662.

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12. Sparr LF, Pitman RK. PTSD and the Law. In: Friedman MJ, Keane TM, Resick PA, eds. *Handbook of PTSD: Science and Practice*. New York, NY: Guilford Press; 2007:449–485.
13. Stein DJ, Zungu-Dirwayi N, Seedat S; et al. Pharmacotherapy for posttraumatic stress disorder. *Cochrane Database Syst Rev*. 2000;(4): CD002795.
14. Dohrenwend BP, Turner JB, Turse NA, et al. The psychological risks of Vietnam for US veterans: a revisit with new data and methods. *Science*. 2006;313(5789):979–982.
15. Mol SS, Arntz A, Metsemakers JF, et al. Symptoms of post-traumatic stress disorder after non-traumatic events: evidence from an open population study. *Br J Psychiatry*. 2005;186:494–499.
16. Yehuda R, Southwick SM, Giller EL Jr. Exposure to atrocities and severity of chronic posttraumatic stress disorder in Vietnam combat veterans. *Am J Psychiatry*. 1992;149(3):333–336.
17. Morgan CA 3rd, Hazlett G, Wang S, et al. Symptoms of dissociation in humans experiencing acute, uncontrollable stress: a prospective investigation. *Am J Psychiatry*. 2001;158(8):1239–1247.
18. Breslau N, Peterson EL, Kessler RC, et al. Short screening scale for *DSM-IV* posttraumatic stress disorder. *Am J Psychiatry*. 1999;156(6):908–911.
19. Koenen KC, De Vivo I, Rich-Edwards J, et al. Protocol for investigating genetic determinants of posttraumatic stress disorder in women from the Nurses' Health Study II. *BMC Psychiatry*. 2009;9(1):29.
20. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders*, Fourth Edition. Washington, DC: American Psychiatric Association; 1994.
21. Weathers FW, Ford J. Psychometric review of PTSD Checklist (PCL-C, PCL-S, PCL-M, PCL-PR). In: Stamm BH, ed. *Measurement of Stress, Trauma, and Adaptation*. Lutherville, MD: Sidran Press; 1996.
22. Kessler RC, Ustün TB. The World Mental Health (WMH) Survey Initiative Version of the World Health Organization (WHO) Composite International Diagnostic Interview (CIDI). *Int J Methods Psychiatr Res*. 2004;13(2):93–121.
23. Kessler RC, Abelson J, Demler O, et al. Clinical calibration of *DSM-IV* diagnoses in the World Mental Health (WMH) version of the World Health Organization (WHO) Composite International Diagnostic Interview (WMHCIDI). *Int J Methods Psychiatr Res*. 2004;13(2):122–139.
24. Helzer JE, Robins LN, McEvoy LT, et al. A comparison of clinical and diagnostic interview schedule diagnoses: physician reexamination of lay-interviewed cases in the general population. *Arch Gen Psychiatry*. 1985;42(7):657–666.
25. Robins LN. Epidemiology: reflections on testing the validity of psychiatric interviews. *Arch Gen Psychiatry*. 1985;42(9):918–924.
26. Robins LN, Helzer JE, Cottler L, et al. *National Institute of Mental Health Diagnostic Interview Schedule Version II–Revised*. St. Louis, MO: Department of Psychiatry, Washington University; 1988.
27. Kroenke K, Spitzer RL, Williams JB. The PHQ-9: validity of a brief depression severity measure. *J Gen Intern Med*. 2001;16(9):606–613.
28. Uddin M, Aiello AE, Wildman DE, et al. Epigenetic and immune function profiles associated with posttraumatic stress disorder. *Proc Natl Acad Sci U S A*. 2010;107(20):9470–9475.
29. Uddin M, Koenen KC, Aiello AE, et al. Epigenetic and inflammatory marker profiles associated with depression in a community-based epidemiologic sample. *Psychol Med*. 2010;41(5):997–1007.
30. Blake DD, Weathers FW, Nagy LM, et al. *Clinician-Administered PTSD Scale for* DSM-IV *(CAPS-IV)*. Washington, DC: National Center for Posttraumatic Stress Disorder; 1998.
31. First MB, Spitzer RL, Gibbon M, et al. *Structured Clinical Interview for* DSM-IV *Axis I Disorders (SCID-I Research Version 2.0)*. New York, NY: Biometrics Research; 1996.
32. Wechsler H, Dowdall GW, Davenport A, et al. A gender-specific measure of binge drinking among college students. *Am J Public Health*. 1995;85(7): 982–985.
33. Crown S, Crisp AH; The Middlesex Hospital Questionnaire (M.H.Q.). A short clinical diagnostic self-rating scale for psychoneurotic patients. *Br J Psychiatry*. 1966;112(490):917–923.
34. Kawachi I, Colditz GA, Ascherio A, et al. Prospective study of phobic anxiety and risk of coronary heart disease in men. *Circulation*. 1994; 89(5):1992–1997.
35. Brazier JE, Harper R, Jones NM, et al. Validating the SF-36 health survey questionnaire: new outcome measure for primary care. *BMJ*. 1992;305(6846):160–164.
36. Dohrenwend BP. Inventorying stressful life events as risk factors for psychopathology: toward resolution of the problem of intracategory variability. *Psychol Bull*. 2006;132(3):477–495.
37. Grant B, Kaplan K. *Source and Accuracy Statement for the Wave 2 National Epidemiologic Survey on Alcohol and Related Conditions (NESARC)*. Rockville, MD: National Institute on Alcohol Abuse and Alcoholism; 2005.
38. Maercker A, Einsle F, Kollner V. Adjustment disorders as stress response syndromes: a new diagnostic concept and its exploration in a medical sample. *Psychopathology*. 2007;40(3):135–146.

Supplementary material follows this article.

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Supplementary Material

Article Title: The Stressor Criterion for Posttraumatic Stress Disorder: Does It Matter?

Author(s): Andrea L. Roberts, PhD; Bruce P. Dohrenwend, PhD; Allison E. Aiello, ScD; Rosalind J. Wright, MD, MPH; Andreas Maercker MD, PhD; Sandro Galea, MD, DrPH; and Karestan C. Koenen, PhD

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List of Supplementary Material for the article

1. **Supplementary eTable 1** PTSD phenomenology and sequelae, by PTSD status and rank of frequency chosen as worst event (n=2986)

2. **Supplementary eTable 2** Comorbidities of PTSD in Nurses PTSD subsample and women in the National Epidemiologic Survey of Alcohol Related Conditions (NESARC), a representative sample of U.S. adults, 2004-2005

Disclaimer

This Supplementary Material has been provided by the author(s) as an enhancement to the published article. It has been approved by peer review; however, it has undergone neither editing nor formatting by in-house editorial staff. The material is presented in the manner supplied by the author.

Supplementary eTable 1: PTSD phenomenology and sequelae, by PTSD status and rank of frequency chosen as worst event (n=2986)

		No PTSD (n=2304)	**PTSD from events most often chosen as worst** (n=260)	**PTSD from events less often chosen as worst** (n=213)	**PTSD from events least often chosen as worst** (n=91)
Phenomenology					
Re-experiencing symptoms	Mean	1.2	3.3	3.1	3.3
Avoidance symptoms	Mean	1.1	4.6	4.4*	4.4
Arousal symptoms	Mean	1.0	3.4	3.3	3.6
Symptoms made work, home, social tasks extremely difficult	%	2.6	18.5	18.9	22.8
Symptoms were severely distressing	%	6.6	36.9	38.5	40.2*
Symptoms lasted more than 1 year	%	40.4	73.7	74.2	71.7
Received professional treatment for symptoms	%	41.0	76.3	72.5	74.7
Sequelae					
Depression onset following PTSD onset	Hazard ratio	1.0 [Reference]	3.3	3.6	2.5
Phobic anxiety†	%	22.1	37.6	35.9	35.9
Physical functioning (lower is worse, range 0 to 100)††	Mean	88.9	83.2	82.6	84.0
Divorced or separated, among women ever married†††	%	11.1	18.9	16.1	22.5
Unemployed^	%	3.0	7.2	3.3	6.5
Exercise, days per week†	Mean	3.0	2.8	2.7	2.8
Smoker†	%	4.7	7.8	8.1	10.3
Body mass index†	Mean	26.8	28.3	27.6	26.3

[^]Excluding women who listed job loss as their worst event.
[†]Restricted to women whose worst event was before 2005, when phobic anxiety, smoking, exercise, and BMI were assessed.
[††]Restricted to women whose worst event was before 2001, when physical functioning was assessed.
[†††]Excluding women whose worst event was assault by intimate partner, divorce, or marital problems.
[*]Statistically significant difference compared with events most often chosen, $p<.01$.
Note:
Events most often chosen: unexpected death of someone close, rape, intimate partner violence.
Events less often chosen: combat, someone close illness, injury, someone close mental illness, physical abuse by parent, sexual molestation, serious illness or operation, miscarriage or stillbirth, other dangerous situation.
Events least often chosen: natural and man-made disasters, parent drug problem, parent legal problem, witnessed serious injury or death, witness parental physical fighting, assault, sexual harassment at work, stalked, pregnancy complication, serious legal problems, serious financial problems, serious accident.

Supplementary eTable 2: Comorbidities of PTSD in Nurses PTSD subsample and women in the National Epidemiologic Survey of Alcohol Related Conditions (NESARC), a representative sample of U.S. adults, 2004-2005

		NURSES PTSD subsample			NESARC[†]		
		No PTSD (n=2304)	**PTSD** (n=703)	**Risk ratio**	**No PTSD** (n=3155)	**PTSD** (n=568)	**Risk ratio**
Depression, lifetime	%	26.7	61.0	**2.3**	31.2	68.8	**2.2**
Divorced or separated, among women ever married	%	11.1	18.5	**1.7**	17.7	24.6	**1.4**
Unemployed	%	3.0	5.6	**1.9**	5.7	11.8	**2.1**
Smoker	%	4.7	7.8	**1.7**	21.9	35.1	**1.6**
Body mass index	Mean	26.8	27.7	**Difference = 0.9**	29.0	29.5	**Difference = 0.5**
Heavy alcohol use[*]	%	3.6	2.3	**0.6**	4.7	8.7	**1.9**

[†]Restricted to white women exposed to a potentially traumatic event, ages 40 to 59, to match characteristics of Nurses sample in 2005 when most sequelae were assessed.
[*]NESARC measure is alcohol abuse or dependence.