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Trauma in the Lives of Older Men: Findings From the Normative Aging Study[1]

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Research on the prevalence of traumatic exposure has tended to focus on younger populations, limiting our knowledge about trauma and its effects in older adults. In this study, lifetime trauma exposure was assessed in a sample of 436 male military veterans of World War II and the Korean Conflict (age 59–92). A clinician-administered screening measure, the Brief Trauma Interview, was developed to assess lifetime exposure to 10 categories of trauma using DSM-IV *criteria. PTSD was assessed in interview and questionnaires. Despite a high prevalence of trauma exposure, symptom levels were relatively low. Few men met criteria for current or lifetime PTSD. Secondary analyses found that lifetime symptom severity was higher in men who met the* DSM-IV *A.2 criterion, in contrast with men who did not meet A.2. Findings indicate that trauma is highly prevalent among older men, although many may be asymptomatic.*

KEY WORDS: posttraumatic stress disorder; emotional trauma; military veterans; older adults; psychological assessment.

INTRODUCTION

The National Comorbidity Survey estimated that over half of all U.S. adults between the ages of 18 and 55, 60.7% of men and 51.2% of women, have experienced at least one traumatic event during the course of their lives (Kessler *et al.*, 1995). Comparable estimates of trauma prevalence for older adults do not exist because the National Comorbidity Survey and other large epidemiological studies of trauma (e.g., Breslau *et al.*, 1991, 1998) excluded older cohorts.

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On the one hand, the prevalence of traumatic exposure could be higher in older adults than that in younger adults simply because the passage of time presents more opportunities (i.e. more years) to be exposed. Particular historical circumstances, such as World War II (WWII), the Holocaust, and Korean Conflict, have presented further opportunities for traumatic exposure among older age cohorts. On the other hand, the fact that younger age is a risk factor for exposure to violence (Rennison, 2000) could make older adults less likely than younger adults to have experienced a traumatic event.

We identified three studies of trauma in community samples that included adults aged 60 or older. One was based on Dutch survivors of WWII (Bramsen and van der Ploeg, 1999). Eighty-six percent reported exposure to at least one type of trauma during the war. The prevalence of posttraumatic stress disorder (PTSD) was 4.0% in civilians and 7.1% in military veterans. The second study was based on men who served in the military during WWII or the Korean Conflict (Schnurr *et al.*, 1998). The men had been participating in a longitudinal cohort study conducted by the Department of Veterans Affairs, the Normative Aging Study (NAS). Overall, 77% of the sample reported having been exposed to a traumatic event; 46.1% had experienced combat and 62.8% had experienced a civilian trauma. The prevalence of current PTSD among the combat veterans was 1.0% (Spiro *et al.*, 1994). In the third study, 68.8% of men and women aged 60 or older reported having experienced a traumatic event, which was comparable to prevalence in middle-aged (71.6%) and younger (66.9%) groups (Norris, 1992). The most striking differences in lifetime exposure among age cohorts were a higher prevalence of physical and sexual assault in the younger groups and a higher prevalence of combat in the older group. Only 14.2% of the older group reported that they had experienced a trauma in the year prior to assessment, which was significantly less than in either of the younger groups. The younger groups reported a higher prevalence of recent physical assault, and the youngest group reported a higher prevalence of recent tragic death to a loved one. The prevalence of PTSD in the older group (4.0%) was lower than that in the middle-aged or younger groups (8.8 and 9.0%, respectively). The prevalence of PTSD among combat-exposed participants, all of whom were male and almost all of whom were over 60 years old, was 2.2%.

This study was designed to expand this limited knowledge base about trauma in older adults. Clinical interviews were conducted with a sample of participants from the NAS. These interviews permitted more careful examination of traumatic exposure and PTSD than was possible in prior investigations that had relied solely on self-report measures (Schnurr *et al.*, 1998; Spiro *et al.*, 1994). The primary objective was to document the types and impact of traumatic exposure in older male veterans. This focus on veterans is actually broader than might be supposed because so many older men are veterans. In 1997, the majority of U.S. men aged 60–79 were military veterans; in fact, 76% of men aged 70–74 were veterans (Department of Veterans Affairs, 1998). Therefore, studying older veterans can provide information that generalizes to a large percentage of older men.

Prior studies of PTSD prevalence in older veterans have yielded widely varying estimates depending on the nature of the sample. As indicated above, prevalence estimates from community studies range from 1 to 7% (Bramsen and van der Ploeg, 1999; Norris, 1992; Spiro *et al.*, 1994). Prevalence estimates from treatment-seeking and prisoner-of-war samples are much higher. For example, in a study of patients seeking PTSD care from the Department of Veterans Affairs, 55% of WWII veterans and 65% of Korean Conflict veterans had current PTSD (Rosenheck and Fontana, 1994). A study of former prisoners of war from WWII and the Korean Conflict found that 54–88% had current PTSD, depending

on where they had been imprisoned (Sutker and Allain, 1996). The same study recruited a nonprisoner control group from community volunteers and found that 14% of these men had current PTSD (Sutker and Allain, 1996).

In the most recent edition of the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV*; American Psychiatric Association [APA], 1994), the diagnostic criteria for PTSD were changed to require that an individual exposed to a life-threatening event (Criterion A.1) also had an extreme emotional reaction to the event, defined as "fear, helplessness, or horror" (Criterion A.2). A second objective of this study was to examine the effect of the A.2 criterion on estimates of traumatic exposure and PTSD. None of the above-mentioned studies of lifetime trauma exposure in community samples that included older adults used these more stringent criteria. Thus, for older adults, the prevalence of trauma or PTSD defined according to current standards is unknown.

So far, only a few studies have investigated the impact of the A.2 criterion on the diagnosis of PTSD. Two retrospective studies found equivocal support for the utility of the A.2 criterion. In the field trial conducted as part of the development of *DSM-IV*, defining trauma by using A.1 alone versus A.1 and A.2 had little effect on the estimated prevalence of PTSD (Kilpatrick *et al.*, 1998). Similarly, a study of undergraduates found that only helplessness was correlated with greater PTSD symptom severity (Roemer *et al.*, 1998). However, a prospective study of crime victims found that 89% of those who had PTSD 6 months postcrime had reported fear, helplessness, or horror when initially assessed within a few weeks of the crime; in contrast, only 44% of the victims who did not develop PTSD had reported fear, helplessness, or horror at the initial assessment (Brewin *et al.*, 2000).

METHOD

Participants

Participants were drawn from the Boston Veterans Affairs NAS, an ongoing longitudinal project begun in the 1960s with 2,280 men who were selected for good health (Bossé *et al.*, 1984). Enrollment occurred during 1961–68 when the men ranged in age from 21 to 81 years. Ninety-five percent of the men are military veterans, and nearly 50% experienced combat while in the service. Approximately 98% are Caucasian. The sample's socioeconomic status is slightly higher than that in the national veteran population and consists of an even distribution of white- and blue-collar workers. The NAS men are highly similar to other community samples on measures of personality and mental health (Butcher *et al.*, 1991). Attrition has been less than 1% per year since the study began, and the response rates to mailed questionnaires typically are greater than 80%.

This investigation drew from 1,101 NAS participants who completed two 1990 surveys on military service and traumatic exposure, served in the military during either WWII or the Korean Conflict, responded to survey questions regarding trauma, and were alive as of September 1995. Survey respondents were similar to nonrespondents in both demographic and mental health variables (Spiro *et al.*, 1994).

Participants were randomly sampled according to a stratified procedure that oversampled men with combat or civilian trauma exposure. Using the 1990 survey data, five subgroups were identified and sampled according to the following proportions: moderate–heavy combat with or without civilian trauma (1.00), light–moderate combat with civilian

trauma (1.00), light–moderate combat only (.35), civilian trauma only (.80), and no combat or civilian trauma (.40). This procedure was designed to yield a sample of participants with roughly .80 prevalence of traumatic exposure.

Of the 752 men who were sampled, 648 (86.2%) returned a mailed questionnaire, making them eligible for interview. Reasons for not completing the questionnaire were inability to locate ($n = 5$); illness, cognitive impairment, death, or refusal ($n = 53$); or could not be determined ($n = 46$). Men who responded to the questionnaire were comparable to men who did not respond in the amount of combat exposure and civilian trauma reported in the 1990 data. However, respondents to the current questionnaire were younger; their mean age in 1990 was 64.9 years (range = 50–84), versus 66.7 years in nonrespondents (range = 52–83), $t(750) = 2.73$, $p < .01$. Respondents also had lower PTSD severity on the Mississippi Scale for Combat-Related PTSD in 1990 (Keane *et al.*, 1988): for respondents, $M = 57.9$, and for nonrespondents, $M = 60.5$, $t(750) = 2.32$, $p < .01$. However, despite the lower average in respondents, their range of scores (36–140) included values above the recommended diagnostic cutpoint of 89 (Kulka *et al.*, 1990), whereas the range in nonrespondents (43–88) did not.

Of the questionnaire respondents, 436 (67.3%) were interviewed. At interview, their average age was 72.4 (range = 59–92). Almost all were White (99%; $n = 427$); 90% ($n = 388$) had graduated high school, 97% were married ($n = 421$), and 73% ($n = 304$) were retired. The majority (71%; $n = 308$) served in the military during WWII, versus the Korean Conflict. (A few cases had missing data on some variables.) Interviewed and noninterviewed respondents did not differ on any of the 1990 measures: age, combat exposure, civilian trauma, or Mississippi scores. Computer error prevented us from determining reasons for not being interviewed.

The present investigation reports on the 436 interviewed men. All analyses were weighted to take into account both sampling and response probabilities so that findings generalize to the sampling frame of 1,101 men. Weights were computed as the inverse of the proportion of completed interviews in each of the five trauma subgroups.

Measures

Trauma

Lifetime trauma exposure was measured with the Brief Trauma Interview (BTI; Schnurr *et al.*, 1995), a clinician-administered interview that we developed to be a sensitive and efficient method for determining whether an individual has experienced a traumatic event that meets the *DSM-IV* criteria (APA, 1994) specified for the diagnosis of PTSD: A.1, exposure to a potentially life-threatening event, and A.2, a subjective reaction of fear, helplessness, or horror. The BTI asks about exposure to 10 types of events, as indicated in Table I. It is based on the Trauma Assessment for Adults (Resnick *et al.*, 1996).

A screening question for each event is used to determine whether further questioning is warranted, for example, "Have you ever been in a serious car accident, or serious accident at work or somewhere else?" A narrative probe that allows the interviewer to learn more about the trauma(s) in question follows an affirmative response to a screening question. If sufficient information about A.1 is not provided in the response to the probe, the interviewer asks further structured probe questions. If the interviewer decides that one or more events

Table I. Items on the Brief Trauma Interview

1. Have you ever served in a war-zone or in a noncombat job that exposed you to war-related casualties (e.g., as a medic or on graves registration duty)?
2. Have you ever been in a serious car accident, or serious accident at work or somewhere else?
3. Have you ever been in a major natural or technological disaster, such as a fire, tornado, hurricane, flood, earthquake, or chemical spill?
4. Have you ever had a life-threatening illness, such as cancer, a heart attack, leukemia, AIDS, multiple sclerosis, and so forth?
5. Have you ever been attacked, beaten up, or mugged by anyone, including friends, family members, or strangers?
6. As a child, were you ever physically punished or beaten by a parent, caretaker, or teacher so that you were very frightened; or you thought you would be injured; or you received bruises, cuts, welts, lumps, or other injuries?
7. Have you ever been in a situation in which someone made or pressured you into having some type of unwanted sexual contact?
8. Have you ever been in any other situation in which you were seriously injured? Have you ever been in any other situation in which you feared you might be seriously injured or killed?
9. Have you ever witnessed a situation in which someone was seriously injured or killed? Have you ever witnessed a situation in which you feared someone would be seriously injured or killed?
10. Have any close family members or friends died violently, for example, in a serious car crash, mugging, or attack?

reported in a category meet A.1, he or she then asks several follow-up questions about these events, including whether the respondent felt fear, helplessness, or horror (A.2) for any of them.

PTSD

Current and lifetime PTSD were assessed with the Clinician-Administered PTSD Scale (CAPS; Blake *et al.*, 1995), a clinician-administered structured interview with excellent psychometric properties (Weathers *et al.*, 2001). The CAPS has high sensitivity and specificity for a diagnosis of PTSD in older military veterans (Hyer *et al.*, 1996). Each of the 17 *DSM-IV* PTSD symptoms is rated on both frequency and intensity according to a 5-point (0–4) scale. These ratings are summed to compute a severity score for each symptom, and the symptom scores are summed to get an overall measure of PTSD severity. To assess PTSD diagnosis, we scored symptom presence using the "1, 2" rule, which requires that frequency be rated at least a 1 and intensity be at least a 2 (Weathers *et al.*, 1999).

Full PTSD was diagnosed according to *DSM-IV* criteria (APA, 1994) that require stressor exposure (A), 1 of 5 reexperiencing symptoms (B), 3 of 7 numbing or avoidance symptoms (C), 2 of 5 hyperarousal symptoms (D), impairment or distress (E), and symptom duration of $\geq$1 month (F). Partial PTSD was diagnosed if a participant met A, E, and F criteria, and met either: B and D; or B, and had $\geq$1 C symptom and $\geq$1 D symptom (Schnurr *et al.*, 1993a).

Current PTSD was assessed in relation to the trauma that was most upsetting currently. If a participant did not have current PTSD, he was asked if symptoms had ever been worse in the past, and, if so, he was asked about the most troubling past episode for any trauma. If an individual reported no traumatic event on the BTI, CAPS questions were asked about the most stressful event he had ever experienced. As in the *DSM-IV* Field Trial for PTSD (Kilpatrick *et al.*, 1998), this ensured that all of the PTSD symptom questions were asked of all participants.

PTSD symptoms also were measured with two questionnaires: the Mississippi Scale (Keane *et al.*, 1988) and the PTSD Checklist (PCL; Weathers *et al.*, 1993), both of which correspond highly to a diagnosis of PTSD based on structured interview. The 35 items on the Mississippi Scale are rated on a 5-point scale, and so scores range from 35 to 175. As indicated above, a score of 89 is the recommended diagnostic cutpoint for community samples (Kulka *et al.*, 1990). The PCL consists of the 17 *DSM-IV* PTSD symptoms, rated on a 5-point scale; scores range from 17 to 85. The recommended diagnostic cutpoint in veterans is 50 (Weathers *et al.*, 1993).

Interrater Reliability

A doctoral-level clinical psychologist who was not involved in data collection rated 25 audiotaped interviews that included 5 cases with current or lifetime PTSD, 10 cases with current or lifetime partial PTSD, and 10 cases with no PTSD. Kappa coefficients for the presence of trauma meeting *DSM-IV* criterion A.1 were above .70 (range = .74–1.00) for all events except illness (.69) and "other" life-threatening events not covered by the remaining categories (.60). Kappa coefficients for the presence of trauma meeting both A.1 and A.2 were above .70 (range = .74–1.00) for all events except other life-threatening events (.17). The raters agreed on the one case of current PTSD and on four of the five cases of lifetime PTSD ($\kappa = .89$). Intraclass correlations for CAPS current and lifetime PTSD severity scores were .96 and .99, respectively.

Procedure

All of the procedures were reviewed and approved by an institutional review board. Participants were mailed a questionnaire packet (including the PCL and Mississippi Scale), with a cover letter informing them that they had been selected for a study of their military service experiences and other significant life events. The letter explained that an interview would be scheduled after the questionnaires had been completed and returned. Questionnaires were mailed in batches so that interviews could be conducted within 6 weeks of questionnaire completion. Three contact attempts, including a remailing of the questionnaire packet, were made before considering a man to be a noncompleter.

Interviews were conducted by a doctoral-level clinical psychologist ($n = 164$), or one of two masters-level clinical psychologists ($n = 240$ and 32, respectively). After obtaining informed consent, the interviewer administered the BTI, followed by the CAPS. Most interviews ($n = 343$) took place in person; however, some ($n = 93$) were conducted by phone for participants who lived outside the Boston metropolitan area or who were unwilling or unable to travel. Phone interviews have been shown to be highly comparable to in-person interviews with trauma survivors (Dansky *et al.*, 1995). Participants who were interviewed in person received $30 to compensate them for expenses.

RESULTS

As shown in Table II, 79.0% of the sample met A.1 and A.2 criteria for exposure to at least one type of traumatic event. Almost 70% reported exposure to an event other

Table II. Traumatic Exposure as a Function of Trauma Type and the *DSM-IV* Stressor Criterion

Event	*DSM-IV* A Criterion		
	No exposure	Met A.1 only	Met A.1 & A.2
War-zone exposure	50.7	12.7	36.6
Serious accident	57.5	16.6	25.9
Disaster	55.4	20.8	23.8
Life-threatening illness	60.5	18.4	21.1
Physical assault	80.8	6.2	13.0
Childhood physical abuse	93.5	2.0	4.5
Sexual assault	95.2	1.0	3.8
Other life-threatening event	94.3	1.9	3.8
Witnessed life-threat	51.4	17.1	31.5
Violent death of loved one	77.8	10.5	11.7
Any event	3.8	17.2	79.0
Any event, except war-zone	9.7	21.3	69.1

Note. $N = 436$. Data are presented as percentages weighted for sampling and response probabilities.

than war-zone trauma. War-zone exposure and witnessing a trauma were the most common events, and childhood physical abuse, sexual assault (at any age), and events not covered by the other categories were the least common events. On average, participants were exposed to 1.73 types of events (range = 0–8).

Table II shows that the prevalence of trauma exposure would be higher if we defined trauma only in terms of life threat (A.1). In fact, over 95% of our sample would be classified as having been exposed. Table II also suggests that the likelihood the A.2 criterion would be met differed among trauma types. To illustrate this, we computed the conditional probability that a participant met A.2 if he met A.1 for a given type of event. Figure 1 shows wide variation among event types in terms of these probabilities. Sexual trauma and war-zone exposure had the highest conditional probabilities, whereas disaster, serious illness, and violent death of a loved one had the lowest probabilities of A.2 being met.

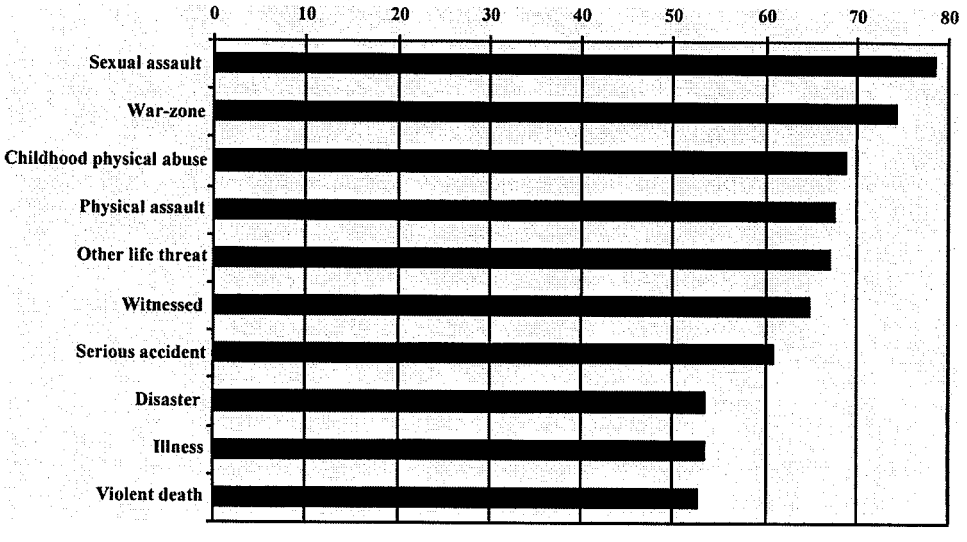

Fig. 1. Conditional probability of meeting *DSM-IV* criterion A.2, given A.1.

Table III. PTSD Diagnosis by Clinician-Administered PTSD Scale

	Current	Lifetime
Full PTSD	0.5% (3)	1.5% (7)
Partial PTSD	2.2% (10)	9.8% (44)
DSM-IV criterion		
B (reexperiencing) only	9.6% (45)	23.6% (107)
C (avoidance/numbing) only	0.7% (4)	3.2% (14)
D (hyperarousal) only	3.0% (15)	9.2% (42)

Note. $N = 436$. Percentages are weighted to reflect sampling and response probabilities. Observed *n*s appear in parentheses.

Despite the high prevalence of exposure, less than 1% of the sample had a current PTSD diagnosis, and only 1.5% had met diagnostic criteria at some point during their lifetime (Table III). If we had not required participants to meet A.2, these percentages would have been unchanged. The prevalences of current and lifetime partial PTSD were low. Of the *DSM* criteria, participants were least likely to have met the C criterion of at least three avoidance or numbing symptoms. Estimates of current PTSD according to self-report also were low. Only 1.1% of men met the recommended cutpoint of 50 on the PCL, and 2.0% met the recommended cutpoint of 89 on the Mississippi Scale.

Table IV presents PTSD symptom severity as a function of number of types of traumas. Although 48% of the sample reported exposure to more than one type of trauma, severity scores were extremely low. Despite these low scores, number of trauma types was related to higher symptom levels on the PCL, $F(4, 411) = 7.95$, $p < .001$, and the CAPS, both lifetime, $F(4, 431) = 18.67$, $p < .001$, and current, $F(4, 431) = 10.12$, $p < .001$. Follow-up tests showed that participants with only one event type did not differ from participants with no events, and participants with three or more events had the highest scores.

Table V presents the results of analyses conducted to determine whether CAPS lifetime PTSD severity scores differed as a function of meeting A.2, versus meeting A.1 only. Although average PTSD severity scores were far below clinically significant levels, participants who met both A.1 and A.2 had significantly higher scores than did participants who met A.1 alone for war-zone exposure, accidents, disaster, life-threatening illness, physical assault, and witnessed events.

Table IV. PTSD Symptom Severity as a Function of Number of Traumatic Exposure Types

				CAPS	
No. of trauma types	Weighted (%)	Observed (*n*)	PCL	Current	Lifetime
0	21.0	77	20.6_a	0.8_a	2.1_a
1	30.9	133	20.7_a	0.9_a	3.0_a
2	20.4	101	23.2_b	2.1_a	7.2_b
3	13.8	66	25.1_b	5.7_b	13.6_c
4+	13.8	59	24.1_b	5.8_b	17.4_c

Note. $N = 436$. Means are weighted to reflect sampling and response probabilities. PCL = PTSD Checklist. CAPS = Clinician-Administered PTSD Scale. Column means not sharing the same subscript differ at $p < .05$ by Duncan's Multiple Range Test.

Table V. Lifetime PTSD Severity as a Function of *DSM-IV* Trauma Criterion

Event	Met A.1 only	Met A.1 & A.2	*df*	*F*
War-zone exposure	2.0	9.7	1, 276	14.08***
Serious accident	4.7	10.3	1, 178	6.39*
Disaster	4.4	14.2	1, 199	18.24***
Life-threatening illness	4.2	12.8	1, 171	13.86***
Physical assault	6.6	16.6	1, 84	3.99*
Childhood physical abuse	4.0	12.2	1, 24	1.20
Sexual assault	26.5	15.3	1, 16	0.71
Other life-threatening event	3.8	13.5	1, 22	2.48
Witnessed life-threat	5.8	11.0	1, 206	4.93*
Violent death of loved one	7.2	11.5	1, 93	1.41

Note. Severity is measured as total score on the Clinician-Administered PTSD Scale. *N*s vary as a function of event type. Analyses were weighted for sampling and response probabilities. $^{*}p < .05$. $^{***}p < .001$.

DISCUSSION

Four out of every five of the older male veterans in this study had experienced at least one traumatic event during the course of their lifetime. Although veterans might be expected to have been exposed to a traumatic event during military service, roughly two out of three of these men had experienced a trauma outside a war-zone. Exposure to more than one kind of trauma was common, occurring in almost half of the sample.

This is the first study of older adults to present information about trauma exposure defined according to *DSM-IV* (APA, 1994). Prior studies used *DSM-III-R* criteria (APA, 1987), which allow fewer trauma types to meet Criterion A but do not require a subjective distress reaction. Our estimate of 79.0% according to *DSM-IV* criteria is quite similar to the 77.0% according to *DSM-III-R* criteria that we previously reported for the NAS (Schnurr *et al.*, 1998). A comparison between two studies of younger and middle-aged adults suggests that *DSM-IV* may yield higher estimates of exposure, however. Using *DSM-III-R* criteria, Kessler *et al.* (1995) estimated that 60.7% of men and 51.2% of women had been exposed to a traumatic event. Using *DSM-IV* criteria, Breslau *et al.* (1998) estimated that 89.6% of men and women had been exposed. It is unclear why our *DSM-IV*-based and *DSM-III-R*-based estimates are so similar, but in light of Breslau *et al.*'s data, at least we feel confident in concluding that the 79.0% is not an overestimate.

Multiple-trauma exposure was related to a higher level of PTSD symptoms, as would be expected based on findings with younger samples (e.g., Green *et al.*, 2000). PTSD prevalence was low, but comparable to the 1.7% lifetime and 0.6% current prevalence recently reported for elderly depressed patients (Lenze *et al.*, 2000). The low prevalence of PTSD, according to both self-report and clinical interview in our study, suggests that long-delayed onset or a worsening course of symptoms is not necessarily a consequence of aging among trauma survivors.

The low prevalence of PTSD in our study also suggests that the prevalence we had previously reported for the NAS (Spiro *et al.*, 1994) was not merely an artifact of the self-report method used in that investigation. Instead, the low prevalence of PTSD in the NAS is likely due to the initial selection criteria, which required that men entering the study be physically as well as emotionally healthy. Men who had obvious symptoms of PTSD would have been ruled out. Also, because PTSD is associated with poor physical health (e.g.,

Beckham *et al.*, 1998; Schnurr *et al.*, 2000), individuals with PTSD could have been ruled out for medical reasons. If the association between PTSD and poor health led to greater mortality among NAS participants with PTSD, selection effects due to mortality could have contributed to the low prevalence as well. For all of these reasons, our estimates of PTSD prevalence are likely to underestimate the true prevalence of PTSD in older veterans, or in older men more generally. Even the estimates of lifetime PTSD prevalence generalize only to survivors. The question of how many WWII or Korean Conflict veterans ever developed PTSD cannot be answered with this or any other study.

Nevertheless, our data, along with findings from other community samples, indicate that PTSD prevalence probably is lower in older men than that in younger men. For example, Kulka *et al.* (1990) found that 15.2% of male Vietnam veterans had current PTSD. In contrast, Norris (1992) found that 2.2% of older combat veterans had current PTSD, and Bramsen and van der Ploeg (1999) found that 7% of older Dutch military veterans had current PTSD. Researchers need to confirm these findings by including older adults in future epidemiological studies of PTSD. Longitudinal studies are required to separate the effects of age from the effects of cohort and time-of-measurement. Age differences are likely due to a combination of factors, including special historical circumstances (e.g., more popular support for WWII than for Vietnam), and not merely a greater likelihood of recovery in the elderly.

Events varied in terms of the conditional probability that an exposed individual would meet A.2. Reporting the prevalence of exposure by ignoring the A.2 criterion of fear, helplessness, or horror increased our estimate of lifetime exposure from 79 to 96%. Which of these estimates is better, or "correct"? For documenting exposure, we suggest that A.1 alone is preferable because A.2 is a property of the person who experiences a life-threatening event, and not a property of the event itself. Saying that a person has not been exposed to a traumatic event because of a lack of distress is akin to saying that a person who was exposed to a pathogen was not exposed because he or she did not become ill following exposure.

The use of A.2 for diagnosing PTSD is a separate issue. Like Kilpatrick *et al.* (1998) in the *DSM-IV* Field Trial, we found no effect of A.2 on PTSD prevalence. Both our study and Kilpatrick *et al.*'s relied on retrospective reports of A.2. In their prospective study, Brewin *et al.* (2000) found that fear, helplessness, or horror reported in the immediate aftermath of a traumatic event was associated with subsequent PTSD status. One way to reconcile these seemingly disparate findings, other than to ascribe them to retrospective versus prospective methods, is to carefully consider *how* A.2 relates to diagnosis. In Brewin *et al.*'s study, the presence of A.2 was only weakly predictive of having PTSD, whereas the absence of A.2 was highly predictive of not having PTSD. By our calculation, the positive predictive value of A.2 for a PTSD diagnosis was only .34 (25 PTSD cases out of 73 participants who reported A.2), and the negative predictive value was .95 (62 noncases out of 65 participants who did not report A.2). Eliminating the A.2 criterion in such a circumstance would not add many more PTSD cases because individuals who did not meet A.2 would be unlikely to meet necessary symptom criteria. Our observation of greater symptom severity in participants who met both A.1 and A.2, in contrast with participants who met only A.1, is consistent with this interpretation.

These findings, in conjunction with findings from other studies (Brewin *et al.*, 2000; Kilpatrick *et al.*, 1998), raise a question about the utility of the A.2 criterion. For diagnostic purposes, A.2 seems unnecessary. This possibility needs to be confirmed in a large

epidemiological study, but, in any event, should be considered during the process of revising *DSM-IV*. For screening purposes with recent trauma victims, A.2 may have much greater utility in helping to rule out individuals who are unlikely to develop PTSD, thereby permitting scarce resources to be allocated to individuals who are in greater need.

This study provides preliminary evidence that the BTI is a reliable and valid measure of lifetime trauma exposure. Interrater reliability was good to excellent except for a category of life-threatening events that were not captured by the primary categories. In practice, this category often functioned to identify events that belonged in other defined categories, but that had not been mentioned during questions about those events. Most affirmative responses were thus recoded into the appropriate event types. In future work with the BTI, we will address ways to enhance the reliability of this item. Criterion validity was demonstrated by the finding that PTSD symptom severity was related in expected ways to two measures derived from the BTI: number of types of traumas and presence/absence of Criterion A.2.

Our findings call for wider investigation of trauma and its consequences in older populations. Conclusions cannot be drawn about whether the prevalence of exposure in older men is higher or lower than in younger men. However, the issue of relative differences among age cohorts is less central than the fact that so many elderly individuals have experienced one or more traumatic events. Many have not suffered long-term adverse consequences; in fact, there can be benefits of traumatic exposure, such as enhanced personal growth (Aldwin *et al.*, 1994; Elder and Clipp, 1989; Schnurr *et al.*, 1993b). Nevertheless, some men, even in this select sample, had significant posttraumatic symptoms. PTSD and other reactions to trauma should not be overlooked as concerns of the elderly.

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