Psychometric Properties of the Life Events Checklist

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The Life Events Checklist (LEC), a measure of exposure to potentially traumatic events, was developed at the National Center for Posttraumatic Stress Disorder (PTSD) concurrently with the Clinician Administered PTSD Scale (CAPS) to facilitate the diagnosis of PTSD. Although the CAPS is recognized as the gold standard in PTSD symptom assessment, the psychometric soundness of the LEC has never been formally evaluated. The studies reported here describe the performance of the LEC in two samples: college undergraduates and combat veterans. The LEC exhibited adequate temporal stability, good convergence with an established measure of trauma history—the Traumatic Life Events Questionnaire (TLEQ)—and was comparable to the TLEQ in associations with variables known to be correlated with traumatic exposure in a sample of undergraduates. In a clinical sample of combat veterans, the LEC was significantly correlated, in the predicted directions, with measures of psychological distress and was strongly associated with PTSD symptoms.

Keywords: potentially traumatic experiences; PTSD; trauma; assessment

Exposure to potentially traumatic events (PTEs) is often associated with significant psychological and emotional distress. An event is considered traumatizing if one experiences, witnesses, or confronts a situation that involves actual or threatened death or serious injury to oneself or others and if it elicits a response of intense fear, helplessness, or horror (American Psychiatric Association [APA], 1994). A person exposed to such an event is likely to experience a traumatic stress reaction, which is characterized by intense physiological arousal, a variety of negative affective states (e.g., dread, horror), and strong perceptions of vulnerability, loss of control, and derealization (Herman, 1992; Rothbaum, Foa, Riggs, Murdock, & Walsh, 1992).

A number of large-scale epidemiological studies have revealed that PTE exposure is unfortunately quite prevalent. For instance, using a representative sample of nearly 6,000 U.S. citizens, the National Comorbidity Survey found that 60% of men and 51% of women have experienced at least one PTE in their lifetime (Kessler, Sonnega, Bromet, & Nelson, 1995). In another large study, 89% of adults in an urban area reported exposure to at least one PTE (Breslau et al., 1998).

Not surprisingly, the significant distress that most individuals experience in the immediate wake of trauma (e.g., Rothbaum et al., 1992) tends to be relatively transient for most people. A small but significant percentage of individuals exposed to such events develop chronic posttraumatic stress disorder (PTSD), however. Although the likelihood of developing chronic PTSD depends on the type of PTE experienced, it has been estimated that the overall rate of PTSD given traumatic exposure (i.e., aggre-

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gating across different types of PTEs) is approximately 9% (Breslau et al., 1998). Moreover, although PTSD is the modal form of psychopathology that may ensue following traumatic exposure, other disorders, such as major depressive disorder and substance dependence disorders, may also occur instead of or in addition to PTSD. The ubiquity of PTE exposure coupled with the small but significant proportion of exposed individuals who develop chronic distress accounts for the substantial number of individuals who are markedly affected by exposure to PTEs.

Regardless of trauma-related psychopathology, trauma exposure itself is associated with increased health care use and substantial costs, and those individuals who do develop chronic PTSD also tend to overuse the health care system (Solomon & Davidson, 1997). Identification of traumatized individuals presenting in primary care settings would result in more cost-efficient and expedient delivery of appropriate services, underscoring the utility of routinely administering valid but brief screening measures for PTE exposure. Paper-and-pencil measures of PTE exposure provide an efficient means of screening for significant traumatic events across the lifespan and may be more comfortable for the respondent as well as individuals (e.g., primary care physicians) who might otherwise gather this information in an interview format (Green, Epstein, Krupnick, & Rowland, 1997; Litz, Miller, Ruef, & McTeague, 2000). Thus, paper-and-pencil PTE screening measures may result in greater disclosure of traumatic life events.

Although many psychometrically sound paper-and-pencil measures and structured interviews of PTSD symptomatology have been developed, the assessment of exposure to potentially traumatic events and trauma history has been a comparatively neglected area of study. Certainly, a number of PTE measures have been developed, but empirical evaluation of their psychometric properties is the exception rather than the rule. For instance, the Life Events Checklist (LEC) was developed at the National Center for PTSD concurrently with the Clinician Administered PTSD Scale (CAPS) to assess exposure to PTEs. The LEC is used to evaluate the respondent's experience of a wide array of traumatic experiences, and the CAPS is then used to determine the index event (worst or most salient), clarify the specific nature of the event endorsed, determine whether an event meets the Criterion-A definition of trauma described in the *DSM-IV* (APA, 1994), and evaluate the presence and severity of posttraumatic symptoms resulting from the index experience. Although the CAPS has been extensively evaluated and has been found to have excellent psychometric properties (see Weathers, Keane, & Davidson, 2001), the psychometric properties of the LEC have never been formally assessed.

Only two other broad PTE measures have undergone extensive psychometric evaluation, including reliability analysis of individual items – the Traumatic Life Events Questionnaire (TLEQ; Kubany et al., 2000) and the Stressful Life Events Screening Questionnaire (SLESQ; Goodman, Corcoran, Turner, Yuan, & Green, 1998). Both measures have admirable psychometric properties and features that recommend their use. Because the LEC enjoys wide usage, an evaluation of its psychometric properties is indicated (e.g., Horesh, Sever, & Apter, 2003; Williamson et al., 2003).

A unique feature of the LEC is that it inquires about multiple types of exposure to each PTE. For each PTE, respondents rate their experience of that event on a 5-point nominal scale (1 = *happened to me*, 2 = *witnessed it*, 3 = *learned about it*, 4 = *not sure*, and 5 = *does not apply*). In this manner, the LEC may elicit information about PTEs that may otherwise be overlooked. For instance, witnessing a violent assault or a motor vehicle accident resulting in serious injuries to others may be quite traumatic but might not be elicited by alternative PTE measures. Moreover, there may be particular research questions for which comparisons of individuals experiencing a traumatic event at differing levels of intensity (e.g., witnessing vs. learning about a certain PTE) may be of interest. If so, the LEC may be a particularly useful measure. The LEC allows respondents to endorse multiple types of exposure to each potentially traumatic event (e.g., direct experience of a motor vehicle accident and witnessing a motor vehicle accident). There may be instances when researchers or clinicians are interested in only the most severe type of exposure (i.e., direct exposure), but there may be other instances when it may be interesting or important to obtain information about multiple types of exposure to the same event. The LEC allows researchers and clinicians to access both types of data.

The LEC is commonly used in clinical settings because it is routinely distributed with the CAPS as the PTE checklist to administer prior to conducting the structured CAPS interview. The guiding assumption is that follow-up clinical interviewing is often useful to clarify trauma history and to make judgments about Criterion-A fitness. In the *DSM-IV*, some facets of Criterion A1 are ambiguous (e.g., "threat to the physical integrity of self or others"), and some events endorsed by individuals are judged clinically to warrant an assessment of PTSD in the absence of Criterion A2 (peritraumatic fear, helplessness, or horror) by virtue of roles, context, and state-of-mind (Breslau & Kessler, 2001; Litz et al., 2000).

The LEC is embedded in the most recent version of the CAPS, and assessors are instructed to administer this checklist prior to the structured interview portion of the assessment. Underscoring its widespread clinical use, the

LEC and CAPS were recently disseminated via CD-ROM training disks to Veterans Affairs (VA) Medical Centers nationwide. The independent study training module was developed by the Department of VA Employee Education System to train VA mental health clinicians who evaluate or treat veterans in VA hospitals or community-based vet centers in the reliable administration of the CAPS. The LEC is also being increasingly used for research purposes (e.g., Horesh et al., 2003), without psychometric justification. Accordingly, evaluation of its psychometric properties is imperative.

The studies presented here were designed to evaluate the psychometric properties and performance of the Life Events Checklist. The first study used a non-treatment-seeking sample of undergraduate students to evaluate the LEC's temporal stability and convergence with an established measure of PTE exposure, the TLEQ. In a second study, we examined the association between the number of PTE endorsed on the LEC and theoretically meaningful symptom measures using a clinical database of measures completed by combat veterans seeking evaluations for PTSD. Endorsement of lifespan PTE should exhibit strong associations with PTSD symptom severity, because numerous studies have documented significant associations between the frequency of traumatic exposure and PTSD symptom severity (for a review see King, Vogt, & King, 2003). In addition, exposure to trauma across the lifespan is highly correlated with a variety of indices of psychopathology, and PTSD is highly comorbid with a variety of disorders (see Kessler et al., 1995; Kulka et al., 1991).

STUDY 1

Method

Participants

As part of a larger investigation, the LEC was administered to 108 undergraduate psychology students at a large southern state university. The mean age of participants was 20.1 years (*SD* = 3.4). Of respondents, 68% were female. With respect to racial composition of the sample, 83% were Caucasian, 13% were African American, 1% were Asian, and 3% were of other races or did not report their race.

Measures

LEC. As mentioned previously, the LEC (see the appendix) was developed concurrently with the CAPS and was designed to be administered prior to administration of the CAPS to screen for PTEs that respondents may have experienced. The items for the LEC were generated via inspection of existing PTE measures, review of the PTSD literature to facilitate the identification of events known to culminate in PTSD, and consultation with researchers and clinicians possessing considerable expertise in PTSD (e.g., research psychologists at the National Center for PTSD) (F. Weathers, personal communication, February 12, 2002). Items were revised for clarity and readability in consultation with other PTSD researchers. Unfortunately, because it was developed more than a decade ago by a separate team of researchers, no additional information is available regarding the item development and refinement. The LEC consists of 16 items inquiring about the experience of 16 different PTEs known to result in PTSD or other posttraumatic difficulties. It also includes an item inquiring about any other inordinately stressful experiences not captured by the other 16 items. Because the LEC is designed as a PTE screen, it is not intended to establish definitively that an individual has experienced an event of sufficient severity to meet *DSM-IV* diagnostic criteria for traumatic exposure. Precisely because the LEC is intended to be used only as a screening measure, the CAPS includes more detailed queries about an individual's most traumatic event in order to gather more information about the severity of the stressor and the respondent's subjective experience of the event.

TLEQ. As mentioned previously, the TLEQ was selected for inclusion in this study because, of the PTE measures in existence, it has been subject to the greatest empirical scrutiny and has been found to possess solid psychometric properties (Kubany et al., 2000). In a 1-week test-retest analysis of the TLEQ in an undergraduate sample, Kubany and colleagues (2000) found that kappa coefficients were .40 or higher for 14 of the 16 TLEQ items and .60 or higher for 8 of the 16 items. In garnering evidence for the TLEQ's convergent validity, Kubany et al. also compared TLEQ responses with a traumatic life events interview and found the convergence in responses to be generally quite good (mean kappa = .70). Because previous research has shown trauma exposure to be positively correlated with PTSD symptom severity, Kubany and colleagues also verified that a clinical sample of individuals reporting symptoms above threshold for PTSD endorsed more PTE exposure on the TLEQ than did individuals not meeting criteria for PTSD.

PTSD Checklist (PCL). The PCL (Weathers, Litz, Huska, & Keane, 1991) provides point-to-point correspondence between individual items and the *DSM-IV* diagnostic symptom criteria for PTSD. The PCL has been shown to have very good internal consistency (alpha = .94) and temporal stability (retest $r = .88$, 1-week interval), and

it correlates strongly (i.e., $r > .75$) with other measures of PTSD symptomatology (Ruggiero, Del Ben, Scotti, & Rabalais, 2003). The diagnostic efficiency in two clinical samples (motor vehicle accident victims and sexual assault victims), using the CAPS as the criterion, has also been found to be quite good (i.e., .90; Blanchard, Jones-Alexander, Buckley, & Forneris, 1996).

Modified PTSD Symptom Scale (MPSS). This self-report inventory instructs participants to rate the frequency as well as the severity of each of 17 symptoms of PTSD listed in the *DSM-IV* (APA, 1994). This instrument has demonstrated good internal consistency (alpha = .91), test-retest reliability (r = .74, 1-month interval), and correlates highly with concurrent structured clinical interview measures of PTSD symptomatology (Coffey, Dansky, Falsetti, Saladin, & Brady, 1998; Falsetti, Resnick, Resick, & Kilpatrick, 1993).

Procedure

In addition to a number of measures administered for the purposes of an unrelated study, the LEC was given to 108 college undergraduates. It was readministered an average of 7 days later (range = 5–14 days) to 104 of these individuals to evaluate its temporal stability. At the retest session, participants were also given the TLEQ (Kubany et al., 2000) to investigate the LEC's convergence with an established PTE measure. Respondents also completed the PTSD Checklist (Weathers, Litz, et al., 1991) and the Modified PTSD Symptom Scale (Falsetti et al., 1993) to evaluate the LEC's associations with clinically related measures.

To evaluate the convergence of the LEC with an established measure of PTE exposure, like items were compared for each participant. Although each PTE measure references items that the other does not, they do have nine events in common. Some comparisons required collapsing items into singular categories. For instance, the TLEQ has four separate sexual assault items differing in terms of age of exposure, whereas the LEC has two sexual assault items. Endorsing any of the four sexual assault items on the TLEQ or either of the two sexual assault items was coded as endorsement of sexual assault exposure. To facilitate comparisons between the two measures, it was first necessary to convert the scales to the same metric. Specifically, the TLEQ has multiple response options for each item corresponding to the number of times an individual may have experienced the event. The LEC has multiple response options corresponding to differing levels of experience with particular events (e.g., *witnessed*, *learned about*, etc.). Thus, although the LEC and TLEQ have significant item overlap, the TLEQ inquires about the frequency of occurrence, whereas the LEC inquires about the level or magnitude of exposure. For establishing convergence, then, items were dichotomized for each measure. For each LEC item, a score of 1 was assigned only if the respondent reported directly experiencing an event, and a 0 was assigned if any other response option was endorsed. Similarly, for the TLEQ, if the respondent endorsed *never* for a particular item, it was assigned a number 0, all other response options (corresponding to the number of occurrences) were simply coded with a 1 (because the LEC does not inquire about the number of times an event may have happened). Convergence between the LEC and TLEQ and the temporal stability of the LEC were determined using percentage agreement and Cohen's kappa indices for each item. Finally, the relative associations between the TLEQ and LEC and PTSD symptomatology were evaluated. For these analyses, total TLEQ and LEC scale scores were used (i.e., items were not dichotomized to reflect mere exposure versus nonexposure).

TABLE 1
Temporal Stability of the Life Events Checklist (LEC) During a 1-Week Interval

LEC Item	*Direct-Exposure Kappa*	*Full-Scale Kappa*
Natural disaster	.69	.54
Fire/explosion	.71	.46
Motor vehicle accident	.77	.59
Other serious accident	.56	.23
Exposure to toxic substance	.58	.47
Physical assault	.80	.53
Assault with weapon	.64	.53
Sexual assault	.84	.66
Other unwanted sexual experience	.54	.54
Combat	NA[a]	.66
Captivity	.66	.54
Life-threatening injury/illness	.56	.34
Severe human suffering	.52	.36
Witness violent death	.53	.44
Sudden, unexpected death of loved one	.54	.41
Caused serious injury/death of another	.37	.29
Other very stressful event	.52	.32

a. Kappa not computable because variable was a constant (no participants reported combat).

Results and Discussion

With respect to test-retest reliability, the LEC appears to be reasonably stable over approximately 7 days, and this is true at both the item and total scale level. Table 1 documents the kappa statistics for each item. These reliability indices were computed for dichotomized items ("happened to me" versus all other response categories), and kappas are also presented for full-scale responses (i.e., nondichotomized responses). Thus, its reliability when

used solely as a measure of direct exposure is presented as well as its reliability when used to assess lower magnitude PTE exposure.

With respect to its reliability as a measure of direct trauma exposure, only one item failed to achieve a kappa of .40, and all other item kappas were above .50 ($p < .001$ for all kappa coefficients). Kappa coefficients for seven of the LEC items were above .60. The mean kappa for all items was .61, and the retest correlation was $r = .82$, $p < .001$. A few items failed to meet conventional standards for adequate reliability. The modest reliability coefficients of some of these items are attributable to low base rates of these events. For instance, some items yielded modest kappa statistics despite also producing greater than 95% agreement over the 1-week interval (e.g., "exposure to toxic substance" was endorsed by only 3 participants, and "severe human suffering" was endorsed by only 7 participants).

Not surprisingly, kappas were lower when the full range of responses was considered as more opportunity for disagreement is introduced by the inclusion of multiple indirect exposure response options (e.g., *witnessed*, *learned about*, and *not sure*). However, 12 of the 17 items produced kappa coefficients of .40 or higher. Those that did not were either catch-all items for which poorer reliability would be expected (e.g., "other very stressful events") or items pertaining to seldomly endorsed events, which can result in low kappas despite high percentages of agreement. For instance, "causing serious injury or death" was associated with a very low kappa (.29), which is not surprising given the fact that only 6 of the 104 participants endorsed this event. Despite the fact that kappas were generally lower when considering the full range of responses, the mean coefficient across items (.47, $p < .001$) was comparable to that yielded by other PTE measures, such as the TLEQ.

Table 2 documents the convergence between the LEC and TLEQ on similar items. Only two of the nine items failed to achieve a kappa of .40, and three of the PTEs (natural disaster, sexual assault, and life threat/serious injury) converged quite strongly. The average of the kappas for each item was .55. The total scale correlation between the LEC and TLEQ (i.e., nondichotomized and including all items from both scales) was $r = -.55$, $p < .001$. (Lower scores on the LEC indicate more direct exposure.) Only one item failed to achieve adequate convergence on both indices (i.e., percentage agreement and kappa coefficient)—the "sudden, unexpected death of a loved one." It is not clear why this would be the case, because the wording is nearly identical on both instruments. In all likelihood, the lack of strong convergence may be due to the fact that "sudden and unexpected" is quite subjective and is certainly a matter of interpretation. Alternatively, low convergence could be owing to the fact that the LEC inquires about the sudden, unexpected death of "someone close to you." "Someone close to you" could be interpreted in different ways—as emotional closeness or as physical proximity. It is noteworthy that this particular item produced the lowest percentage agreement index of all LEC items in test-retest analyses.

TABLE 2
Convergence of Like Items on the Life Events Checklist (LEC) and Traumatic Life Events Questionnaire (TLEQ)

Event Type	*Percentage Agreement*	*Kappa*
Natural disaster	90	.79
Motor vehicle accident	72	.47
Other serious accident	82	.43
Physical assault	84	.59
Assaulted or threatened with weapon	95	.36
Sexual assault	84	.76
Combat	100	NA[a]
Other life-threatening event or serious injury	92	.60
Sudden, unexpected death of loved one	68	.38

NOTE: LEC-TLEQ total scale correlation: $r = -.55$, $p < .001$; all kappas $p < .001$. Because the TLEQ includes 4 items pertaining to various forms of sexual assault, these were collapsed into an overall sexual assault item for this analysis. Similarly, the TLEQ subdivides physical assault into two items (intimate partner and stranger assaults). These two items were also aggregated for the present analysis.
a. Kappa not computable because variables are constant (no combat exposure reported).

In terms of their relative strength of association with theoretically related symptom measures, the LEC and the TLEQ were similarly correlated with PTSD symptom severity (Pearson *r* coefficients ranging from .34 to .48). This was true of both the Modified PTSD Symptom Scale as well as the PTSD Checklist (see Table 3).

STUDY 2

Method

Participants

Of the 131 combat veterans who completed the LEC as part of their clinical evaluation at the National Center for PTSD in Boston, 78.5% were White and 18.2% were Black. The remaining 3.3% did not provide information about their race. The sample was composed entirely of men whose mean age at the time of LEC administration was 54 years. Most participants (70.8%) were veterans of the Vietnam War, but 7.5% of the sample served in Korea, 10% in World War II, and 6.7% in the Persian Gulf War.

TABLE 3
Correlations Between Trauma Exposure Measures and Symptom Measures

	Study 1 (n = 108)			
Measure	*LEC*	*TLEQ*	*MPSS*	*PCL*
LEC	—	–.55*	–.44*	–.48*
TLEQ		—	–.34*	.36*
MPSS			—	.82*
PCL				—

NOTE: LEC = Life Events Checklist; TLEQ = Traumatic Life Events Questionnaire; MPSS = Modified Post-Traumatic Stress Disorder (PTSD) Symptom Scale; PCL = PTSD Checklist; BAI = Beck Anxiety Inventory; BDI = Beck Depression Inventory; Miss. = Mississippi Scale for Combat-Related PTSD; PCL-M = PTSD Checklist–Military Version; CAPS = Clinician Administered PTSD Scale.

	Study 2 (n = 131)					
Measure	*LEC*	*BAI*	*BDI*	*Miss.*	*PCL*	*CAPS*
LEC	—	–.27**	–.32**	–.33**	–.43**	–.39**
BAI		—	.67**	.47**	.43**	.38**
BDI			—	.52**	.60**	.47**
Mississippi				—	.62**	.53**
PCL-M					—	.59**
CAPS						—

*$p < .01$. *$p < .05$.

The modal level of education (endorsed by 52% of the sample) was high school diploma/GED. All veterans provided written informed consent for their clinical data to be used for research purposes.

Measures

The Mississippi Scale for Combat-Related PTSD. The Mississippi Scale (Keane, Caddell, & Taylor, 1988) is a 35-item, self-report scale designed to assess reexperiencing, avoidance and numbing, and hyperarousal symptoms associated with PTSD. It also includes items inquiring about associated features of PTSD such as interpersonal adjustment difficulties. This measure has demonstrated good test-retest reliability ($r = .97$, 1-week interval), internal consistency (alpha = .94), and diagnostic accuracy (90% diagnostic efficiency) in a sample of Vietnam combat veterans (Keane et al. 1988; Kulka et al., 1991; McFall, Smith, Mackay, & Tarver, 1990).

The PTSD Checklist–Military Version (PCL-M). The PCL-M (Weathers, Litz, Herman, Huska, & Keane, 1993) assesses PTSD severity using 17 items rated on a 5-point Likert-type scale. The overall alpha of the scale was excellent at 0.96 to 0.97, and the test-retest reliability during a 2- to 3-day period was also very high ($r = .96$; Weathers et al., 1993) in a sample of combat veterans. The format is the same as the civilian version (used in Study 1 with undergraduates) but items reflect reactions to stressful military experiences specifically.

CAPS. The CAPS (Blake et al., 1995) requires clinicians to rate patients on each of the 17 diagnostic symptoms of PTSD as defined by the *DSM-IV*. Each symptom is rated in both frequency and intensity using a scale ranging from 0 to 4. In a series of studies of the psychometric properties of the CAPS, Weathers and colleagues (Weathers, Blake, & Litz, 1991; Weathers, Litz, et al., 1991) found that the measure had good internal consistency (alpha = 0.94) and test-retest reliability, with estimates ranging from .90 to .98. Diagnostic accuracy of the CAPS has been evaluated in a number of studies, and results have been consistently excellent. For instance, in a study of combat veterans conducted by Hyer, Summers, Boyd, Litaker, and Boudewyns (1996), the CAPS had 90% sensitivity, 95% specificity, and 93% efficiency using the Structured Clinical Interview for *DSM-IV* (SCID; First, Spitzer, Gibben & Williams, 1995). The CAPS is widely considered the gold standard in PTSD assessment (e.g., Zayfert, Becker, Unger, & Shearer, 2002). Trained, doctoral-level clinicians administered the CAPS.

The Beck Depression Inventory (BDI). The BDI (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) is a 21-item measure of depressive symptomatology. In a meta-analysis of the BDI, internal consistency was found to be 0.86 for psychiatric patients and 0.81 for nonpsychiatric individuals (Beck, Steer, & Garbin, 1988), whereas test-retest reliability was found to be greater than 0.60 for all studies. The BDI reliably discriminates clinically depressed from nondepressed patients (Beck, Steer, et al., 1988a).

The Beck Anxiety Inventory (BAI). The BAI (Beck, Epstein, Brown, & Steer, 1988) is a 21-item Likert-type scale assessing self-reported anxiety. The BAI has been shown to be internally consistent (alpha = 0.90; Osman, Kopper, Barrios, Osman, & Wade, 1997) and to possess adequate test-retest reliability over a 1-week period (r = 0.75; Beck, Epstein, et al., 1988). The BAI reliably discriminates anxiety-disordered from non-anxiety-disordered patients (Beck, Epstein, et al., 1988) and demonstrates excellent convergence with related anxiety scales (Creamer, Foran, & Bell, 1995; Fydrich, Dowdall, & Chambless, 1992; Osman et al., 1997).

Procedure

To evaluate the LEC's associations with other theoretically related and clinically meaningful measures of psychopathology, we examined correlations between the LEC and measures of psychopathology known to be strongly associated with exposure to traumatic events using a clinical database at the National Center for PTSD. We compared the association of the number of items endorsed on the LEC with measures of trauma-specific psychopathology such as the CAPS, the PCL-M, and the Mississippi Scale. The database used in this investigation consists of common measures of psychological and emotional functioning that have been administered to male veterans during the course of routine clinical evaluations from 1996 through the present. Only measures completed by veterans who provided consent for their clinical data to be used for future research are included in the database.

Results and Discussion

As depicted in Table 3, the LEC was significantly related, in the predicted directions, with most of the measures of psychopathology known to be associated with PTE exposure. Importantly, the largest correlation coefficients were yielded by the LEC's associations with the trauma-specific measures of distress—the PCL-M, the CAPS, and the Mississippi Scale.

GENERAL DISCUSSION

The LEC appears to be characterized by generally adequate psychometric properties on the basis of the two studies presented here. In a nonclinical sample of undergraduates, it appears to be fairly stable over a 1-week period and to compare favorably to other existing PTE measures. This is true at the total scale level as well as the item level. Moreover, although percentage agreement at the item level was quite high, some kappa coefficients were attenuated by virtue of the fact that certain items pertain to low base rate events. Although the kappa coefficients for individual items are somewhat variable, they are consistent with those yielded in investigations of the only other PTE measures that have been examined at the item level (Goodman et al., 1998; Kubany et al., 2000). This is particularly true when the LEC is used as a measure of direct PTE exposure (i.e., examining the consistency for events that actually happened to the respondent), which is the most important and most common function of a PTE screening measure. Nevertheless, the LEC does exhibit stability as a screening measure designed to assess varying levels of PTE exposure (e.g., witnessing or learning about PTEs). The LEC converges with an established measure of PTE exposure—the TLEQ—on similar items. In fact, a few of the like items demonstrated kappas that were as strong as stability coefficients for repeated administrations of the same inventory (i.e., test-retest kappas for LEC items).

The LEC demonstrated strong convergence with measures of psychopathology that are known to be associated with trauma exposure. These associations were strongest for measures of trauma-specific psychopathology such as the CAPS, PCL-M, and MPSS. The LEC and TLEQ exhibited comparable associations with measures of trauma-related distress. Due to the fact that we used an existing data set to evaluate convergence of the LEC with symptom measures, we were unable to examine temporal stability with these data, as repeated administrations of the LEC were not conducted. Although highly similar paper-and-pencil measures of PTE exposure tend to exhibit comparable stability in undergraduate and combat veteran samples (e.g., Kubany et al., 2000), it should not simply be assumed that this is the case with the LEC. Future studies will need to evaluate psychometric properties of the LEC in varied clinical contexts and samples in order to replicate and extend the findings reported here.

Despite the fact that the LEC demonstrates generally adequate psychometric properties, it is certainly not without limitations. Most notably, because the LEC was originally developed to be used in conjunction with the CAPS, it does not inquire about *DSM-IV* Criterion A2 for PTSD (peritraumatic fear, helplessness, or horror). The CAPS includes such queries, but if the LEC is used as a stand-alone measure, researchers and clinicians will need to ascertain whether Criterion A2 is met by inquiring about respondents' peritraumatic emotional responses. Another limitation of the LEC pertains to its coverage of the domain of potentially traumatic events. All widely used PTE measures share a common core of items, but each includes unique items not identified by alternative measures. Although the LEC includes separate, specific queries about toxic substance exposure and fires and explosions (per-

haps making it more suitable for military contexts), it lacks coverage of events assessed by the TLEQ, such as intimate partner abuse and childhood physical abuse. The TLEQ is superior in its domain coverage of sexual assault because it has four items addressing different forms of sexual assault compared to only two items on the LEC. Finally, researchers and clinicians should be aware of the potential for false positives introduced by the LEC's response options. Learning about or witnessing a number of the events assessed by the LEC would not ordinarily be considered a *DSM-IV* Criterion A1 stressor for PTSD unless the event happened to a very close friend or relative. Accordingly, as with any PTE measure, endorsement of a particular item does not necessarily connote that an individual was traumatized. The LEC is simply a screening measure, and researchers and clinicians should use follow-up queries and exercise appropriate judgment in discerning whether an endorsed event qualifies as a trauma according to *DSM-IV* criteria.

The selection of a PTE measure should be guided by the particular clinical or research purposes. It is incumbent upon researchers and clinicians to select a measure that adequately addresses the type of events likely to be experienced by the population being screened. Although the LEC may be especially suitable for military samples, the TLEQ would likely be the PTE measure of choice in a number of other contexts, especially when sexual assault is likely to be prevalent or when it is necessary to distinguish among various forms of sexual assault. Moreover, the TLEQ might be a better measure to use when a follow-up interview is not feasible, for example, in survey research contexts, because it has less ambiguous wording, inquires about Criterion A2 explicitly, and determines the number of times each PTE has been experienced and the cumulative impact of lifespan traumas.

Establishing the psychometric soundness of self-report trauma history inventories presents a challenge. In terms of validity, it is extremely difficult, if not impossible, to obtain external corroboration of the events that are reported (Norris & Riad, 1997). Many individuals report multiple events, which could require multiple corroborators. Moreover, the lack of corroboration for a reported event conveys little about the actual occurrence of the event. It may be that no one else knows about the event (and this is especially true for events that the respondent may have been too embarrassed to share with others, such as instances of sexual assault). Even for events that occurred in the presence of someone else, such individuals may not be easily contacted. If potential corroborators are unable to confirm the occurrence of an event, the fallibility of the corroborator's memory is an equally viable explanation for the lack of correspondence. For these reasons, investigators have generally focused on demonstrating an association between the total number of events endorsed on a trauma inventory and symptom severity on PTSD scales or other variables that are known to be positively correlated with frequency of PTE exposure (Norris & Riad, 1997). It has been consistently observed that PTSD symptom severity is strongly correlated with the number of traumatic experiences that one has experienced (King, Vogt, & King, 2003). In addition, the concurrent validity of a PTE measure can be examined by comparing the endorsement of like items on alternate PTE measures. The studies reported here used both approaches in evaluating the validity of the LEC.

With respect to reliability, investigators are typically only concerned with the temporal stability of a self-report PTE measure. Because PTE exposure is not a unidimensional construct, internal consistency is not a necessary property of PTE measures, and analysis of internal consistency of such measures is inappropriate and potentially misleading (Netland, 2001). A PTE measure inquires about disparate events that may or may not cooccur. But as a broad screening measure of diverse life events, there is certainly no reason to expect that such events will necessarily covary. The experience of child sexual assault, for instance, has little bearing on the likelihood of experiencing a life-threatening motor vehicle accident. The occasional practice of reporting internal consistency estimates for PTE measures as well as the expectation that such measures should necessarily be characterized by high internal consistency are unfounded (Cleary, 1981; Monroe, 1982; Netland, 2001; Turner & Wheaton, 1995).

Similarly, interrater reliability is not relevant for establishing the consistency of the LEC because it is a self-report measure. What is essential to evaluate is its temporal stability. Such analysis must be conducted at the item level, however, because consistency in the mere number of events endorsed on separate administrations of a measure may be misleading (Netland, 2001). If a respondent endorses wholly separate life events on consecutive administrations, the measure is clearly not stable, despite the fact that gross indices such as an overall test-retest correlation would lead one to believe that it is stable.

In sum, although a number of PTE measures have been constructed, very few of them have known psychometric properties, and only two others have been examined at the item level. Unfortunately, there does not appear to be a comprehensive PTE measure that can be recommended above all others for all purposes because no measure in existence inquires about all incidents that a clinician or researcher may wish to know about. Fortunately, there are at least two good measures, and it appears that the LEC can be added to this list. Although information on its psychometric properties is long overdue considering its widespread usage as a pre-

cursor to administration of the CAPS, it appears to elicit reliable information about PTE exposure. Moreover, the LEC is related to theoretically consistent and clinically meaningful phenomena. Its applicability to populations other than those studied here remains to be established, but its performance in the clinical and nonclinical samples in the present studies is encouraging.

APPENDIX
Life Events Checklist

Listed below are a number of difficult or stressful things that sometimes happen to people. For each event, check one or more of the boxes to the right to indicate that: (a) It *happened to you* personally, (b) you *witnessed it* happen to someone else, (c) you *learned about it* happening to someone close to you, (d) you're *not sure* if it applies to you, or (e) it *doesn't apply* to you.

Mark *only one* item for any single stressful event you have experienced. For events that might fit more than one item description, choose the one that fits best.

Be sure to consider your *entire life* (growing up, as well as adulthood) as you go through the list of events.

Event	Happened to me	Witnessed it	Learned about it	Not Sure	Doesn't apply
1. Natural disaster (for example, flood, hurricane, tornado, earthquake)					
2. Fire or explosion					
3. Transportation accident (for example, car accident, boat accident, train wreck, plane crash)					
4. Serious accident at work, home, or during recreational activity					
5. Exposure to toxic substance (for example, dangerous chemicals, radiation)					
6. Physical assault (for example, being attacked, hit, slapped, kicked, beaten up)					
7. Assault with a weapon (for example, being shot, stabbed, threatened with a knife, gun, bomb)					
8. Sexual assault (rape, attempted rape, made to perform any type of sexual act through force or threat of harm)					
9. Other unwanted or uncomfortable sexual experience					
10. Combat or exposure to a war-zone (in the military or as a civilian)					
11. Captivity (for example, being kidnapped, abducted, held hostage, prisoner of war)					
12. Life-threatening illness or injury					
13. Severe human suffering					
14. Sudden, violent death (for example, homicide, suicide)	*N/A*				
15. Sudden, unexpected death of someone close to you	*N/A*				
16. Serious injury, harm, or death you caused to someone else	*(Check here if you were directly involved)*				
17. Any other stressful event or experience					

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