Psychological Assessment
2000, Vol. 12, No. 2, 210–224

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1040-3590/00/$5.00 DOI: 10.1037//1040-3590.12.2.210

Development and Preliminary Validation of a Brief Broad-Spectrum Measure of Trauma Exposure: The Traumatic Life Events Questionnaire

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This article describes the development and preliminary validation of a brief questionnaire that assesses exposure to a broad range of potentially traumatic events. Items were generated from multiple sources of information. Events were described in behaviorally descriptive terms, consistent with *Diagnostic and Statistical Manual of Mental Disorders IV* posttraumatic stress disorder stressor criterion A1. When events were endorsed, respondents were asked if they experienced intense fear, helplessness, or horror (stressor criterion A2). In separate studies with college students, Vietnam veterans, battered women, and residents of a substance abuse program, most items possessed adequate to excellent temporal stability. In a study comparing questionnaire and structured-interview inquiries of trauma history, the 2 formats yielded similar rates of disclosure. Preliminary data on positive predictive power are also presented.

Traumatic events, such as exposure to warfare, disasters, serious accidents, sudden deaths of loved ones, and physical and sexual abuse, are commonplace. Epidemiological research suggests that at least two-thirds of American adults have experienced at least one traumatic event in the course of their lives (Norris, 1992; Resnick, Kilpatrick, Dansky, Saunders, & Best, 1993). Almost one-fifth of American adults have been involved in a serious motor vehicle accident (Blanchard & Hickling, 1997). Five million American adults have lost a family member or friend to homicide (Amick-McMullan, Kilpatrick, & Resnick, 1992). In a random sample of urban women, one in four had been physically assaulted by a male intimate, one in two had experienced rape or attempted rape, and nearly one-half had experienced sexual abuse before age 16 (Randall & Haskel, 1995).

By definition, traumatic events evoke intense fear, helplessness, or horror (American Psychiatric Association, 1994), and exposure to trauma is a risk factor for a host of mental health problems.[1] In particular, individuals exposed to traumatic stressors often develop posttraumatic stress disorder (PTSD)—a syndrome with debilitating symptoms, such as intrusive distressing memories, nightmares, loss of interest in previously enjoyable activities, insomnia, and loss of concentration (American Psychiatric Association, 1994). PTSD affects an estimated 10% of American women and 5% of American men (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995); by conservative estimates, 2.5 million Americans have

Editor's Note. Richard W. J. Neufeld served as the action editor for this article.—SNH

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We extend our appreciation to Dudley Blake, John Fairbank, Edna Foa, Bonnie Green, Fran Norris, Raymond Scurfield, and Frank Weathers for serving as expert raters to evaluate the content validity of a preliminary version of the TLEQ and for their helpful suggestions. We thank Carolyn Lopez for serving as a structured-interview response rater in Study 4. We thank Lori Alphonsi, Donna Hopkins, and other staff at the Family Peace Center in Honolulu for their wonderful assistance in conducting the test–retest study with the battered women's sample in Study 5.

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[1] According to *DSM-IV* (American Psychiatric Association, 1994), two elements must be present for a stressful event to qualify as a traumatic stressor: Criterion A1 stipulates that, "the person experienced, witnessed, or was confronted with an event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others" (p. 428); Criterion A2 stipulates that the person's subjective response to the A1 event must involve "intense fear, helplessness, or horror." Exposure to a traumatic event, as defined above, is a prerequisite for a person to be assigned a diagnosis of PTSD according to criteria set forth in *DSM-IV*. In this article, the terms *trauma exposure, exposure to traumatic events,* and *traumatic stressors* are used interchangeably as synonyms.

current PTSD (Blanchard & Hickling, 1997; Keane, 1990). In addition, evidence suggests that PTSD does not remit in more than one-third of those afflicted, even after many years (Kessler et al., 1995).

Exposure to trauma has also been implicated as a risk factor for depression (e.g., Zlotnick, Warshaw, Shea, & Keller, 1997), substance abuse (e.g., Duncan, Saunders, Kilpatrick, Hanson, & Resnick, 1996; Kulka et al., 1990), panic disorder (e.g., Faravelli, Ambonetti, Fonnesu, & Sessarego, 1985), obsessive–compulsive disorder (e.g., Saunders, Villeponteaux, Lipovsky, Kilpatrick, & Veronen, 1992), borderline personality disorder (e.g., Herman, Perry, & van der Kolk, 1989), eating disorders (e.g., Waller, 1989), and sexual problems (e.g., Letourneau, Resnick, Kilpatrick, Saunders, & Best, 1996). In addition, trauma exposure is associated with overutilization of medical services and increased rates of health complaints and physical disorders (Boscarino, 1997; Golding, 1994; Koss, Koss, & Woodruff, 1991; Laws, 1994; Schnurr, 1996; Wolfe, Mori, & Krygeris, 1994). For example, in a random sample of 1,610 urban women, sexually assaulted women were more likely than nonassaulted women to report poor health status, a variety of somatic symptoms, and several diseases, including arthritis and diabetes (Golding, 1994).

Given the frequency and impact of traumatic events, clinicians would be well advised to conduct trauma history assessments as a standard or routine practice (e.g., Abbott, Johnson, Koziol-McLain, & Lowenstein, 1995; Jacobson & Richardson, 1987; King, King, Foy, & Gudanowski, 1996; Koss, Woodruff, & Koss, 1990; Stinson & Hendrick, 1992). When trauma exposure has not been assessed, the possible effects of traumatization on presenting complaints will not be evaluated, and posttraumatic stress will not be a treatment focus. When one considers that many individuals will not divulge traumatic experiences unless asked (e.g., Briere & Zaidi, 1989; Escalona, Tupler, Saur, Krishnan, & Davidson, 1997; Mueser et al., 1998; O'Leary, Vivian, & Malone, 1992; Stinson & Hendrick, 1992), many clients and patients are probably misdiagnosed and treated for conditions that are not the primary problem or are secondary to posttraumatic stress (see Escalona et al., 1997).

Despite numerous mandates for health providers to conduct trauma exposure screening on a routine basis (e.g., Council on Scientific Affairs, American Medical Association, 1992; Stinson & Hendrick, 1992), the practice is rare. For primary health care providers to consider widespread screening, the procedures need to be brief as well as valid, with minimal need for clinician involvement. In light of the importance of trauma exposure screening, the availability of instruments that meet these requirements may have considerable clinical utility.

Several existing instruments measure exposure to specific types of traumatic events or exposure to traumatic events during a certain developmental period (e.g., Berger, Knutson, Mehm, & Perkins, 1988; Bernstein et al., 1994; Leserman, Drossman, & Li, 1995). For example, the Childhood Trauma Questionnaire (Bernstein et al., 1994) assesses childhood trauma in areas of physical and emotional abuse, sexual abuse, and neglect and has been shown to possess adequate psychometric properties. However, a limitation of instruments that assess only exposure to specific classes of traumatic events is that they fail to detect exposure to nonassessed types of trauma (e.g., serious accidents or sudden deaths of loved ones) that also can have pernicious effects (e.g., Blanchard & Hickling, 1997; Thompson, Norris, & Ruback, 1998).

Structured interviews that assess exposure to a broad range of traumatic events (e.g., Kilpatrick, Resnick, & Freedy, 1991; Norris, 1992; see also Norris & Riad, 1997) are time-consuming and impractical for use in health settings such as emergency rooms and mental health clinics, where there are constraints on the amount of information that can be routinely collected. More importantly, for the purposes of this investigation, only a few self-report questionnaires that assess trauma exposure across a broad range of high-magnitude stressors have been developed, and all are in the early stages of validation (e.g., Green, 1993; Vrana & Lauterbach, 1994; Wolfe & Kimerling, 1997).

The purpose of this research was to develop and validate a brief measure of prior exposure to trauma—the Traumatic Life Events Questionnaire (TLEQ). Five separate studies were conducted to (a) develop a questionnaire that would have content validity for the domain of important traumatic events, (b) examine the temporal stability of the questionnaire with multiple trauma populations, and (c) examine the questionnaire's convergent validity with structured-interview assessments of exposure to trauma.

Study 1

Overview

A preliminary version of the TLEQ (TLEQ 1) had been unsystematically developed for purposes ancillary to another project (Kubany et al., 1996). The purpose of Study 1 was to construct a refined preliminary questionnaire (TLEQ 2) by using standard item generation and refinement procedures. Consistent with recommendations regarding content validation (Haynes, Richard, & Kubany, 1995), a multistep process was followed to establish the domain of important traumatic life events and to develop items that were representative of and relevant to this domain (e.g., Kubany et al., 1996).

Method

Item Generation for TLEQ 2

Items for TLEQ 2 were generated from five sources: (a) the first version of the TLEQ (TLEQ 1), (b) examination of other existing instruments that assess exposure to traumatic events (e.g., Green, 1993), (c) reviews of the traumatic stress literature, (d) open-ended responses on an "other-trauma" item from more than 1,000 completed versions of TLEQ 1, and (e) evaluation of TLEQ 2 content by trauma experts.

Item Refinement and Expert Review

Over a 3-year period, many TLEQ items were reworded to increase clarity and simplicity and to eliminate redundancies on the basis of focus group meetings held by project staff. As the final phase of content validation for TLEQ 2, seven published experts in the area of PTSD[2] were asked to evaluate the relevance and representativeness of individual items and the item pool. The reviewers used specially prepared forms for recording their evaluations of various aspects of TLEQ 2 and for providing evaluative narrative feedback. They used 6-point scales (with anchors of *not well at all* [0] and *extremely well* [5]) for rating how well TLEQ items were worded and how well the TLEQ sampled the spectrum of important

[2] Dudley Blake, John Fairbank, Edna Foa, Bonnie Green, Fran Norris, Raymond Scurfield, and Frank Weathers served as expert reviewers of the content validity of the TLEQ.

traumatic events. On average, the reviewers rated overall item wording in the *very well* range (M = 3.64, SD = 0.75) and also rated sampling adequacy in the *very well* range (M = 3.93, SD = 0.61). On the basis of the reviewers' narrative comments, additional refinements were made to improve the instructions, readability, response format, and other questionnaire elements related to our content criteria.

Results

The process of test development and refinement resulted in a questionnaire that assesses exposure to 16 types of potentially traumatic events: (1) natural disasters; (2) motor vehicle accidents involving injuries or death; (3) other accidents involving injuries or death; (4) exposure to warfare; (5) sudden, unexpected death of a close friend or loved one; (6) robbery involving a weapon; (7) severe physical assault by an acquaintance or stranger; (8) witnessing the severe assault of an acquaintance or stranger; (9) being threatened with death or serious bodily harm; (10) childhood physical abuse; (11) witnessing family violence; (12) physical abuse by an intimate partner; (13) childhood or adolescent sexual contact with someone at least 5 years older; (14) unconsenting childhood or adolescent sexual contact with someone less than 5 years older; (15) unconsenting sexual contact as an adult; and (16) being stalked.[3] A final, open-ended event question assesses exposure to some other life-threatening or highly disturbing event(s).

The TLEQ 2 preface provides a rationale for the questionnaire by indicating that the events described "are far more common than many people realize" and "can affect a person's mental health or later quality of life." The events are described in behaviorally descriptive terms without use of emotionally charged terms that have stereotyped meanings for some people (e.g., rape or abuse). For example, the childhood physical abuse item asks, "Were you physically punished in a way that resulted in bruises, burns, cuts, or broken bones?" Also, the events are described in terms that are congruent with definitions and descriptions provided in the psychological literature (e.g., Carlin et al., 1994). The frequency-of-occurrence response format of TLEQ 2 asks respondents to indicate "never," "once," "twice," "more than twice," or "if more than twice, specify how many times." Additional questions toward the end of TLEQ 2 ask respondents to specify whether they were injured during the events and to specify which (if any) experienced events evoked intense fear, helplessness, or horror (*Diagnostic and Statistical Manual of Mental Disorders IV* [*DSM-IV*] PTSD stressor criterion A2) (American Psychiatric Association, 1994). (Individuals' subjective reactions to potentially traumatic events [criterion A1] need to be assessed to know whether such experiences were in fact traumatic.) The last question on TLEQ 2 asks, "Of the events experienced, which event causes you the most distress?" TLEQ 2 can be completed in 10 to 15 min. The Flesch grade level reading difficulty score of TLEQ 2 is grade 6.2 (Microsoft Corporation, 1991–1992).

Study 2

Overview

Several studies have found that many individuals receiving treatment for alcohol and drug abuse have prior histories of traumatization, particularly childhood physical and/or sexual abuse (e.g., Dansky et al., 1996; Miller, Downs, & Testa, 1993; Najavits, Weiss, & Shaw, 1997). The purpose of Study 2 was to evaluate the temporal stability of TLEQ 2 with a sample of men and women enrolled in a residential substance abuse treatment program.

Method

Participants

The sample comprised 36 men and 13 women who were residents of a private, nonprofit, residential, and outpatient aftercare substance abuse treatment program in Hawaii. Participants represented a subset of 95 men and 25 women, representing almost the entire census of program residents, who had completed the TLEQ 2 for two other studies (Kubany, Owens, & Leisen, 1998; Tremayne, Kubany, Leisen, & Owens, 1998). All participants had diagnoses of substance dependence (alcohol and/or drugs) and were either court ordered or self-referred to the program. The mean ages of the participants were 30.7 years for men (SD = 8.1) and 29.0 years for women (SD = 5.8). The primary ethnic backgrounds of the participants were Native Hawaiian (18%), White (14%), Japanese (10%), Portuguese (8%), and other, mixed or unspecified ethnicity (50%).

Procedure

Participants completed an informed-consent form and were administered the TLEQ 2 twice in a group setting by program staff. The test–retest interval was 60 days.

Results and Discussion

The percentage of participants reporting each TLEQ 2 event and the overall results of the test–retest analyses are presented in Table 1. The degree to which participants responded consistently to individual TLEQ items on the two administrations of TLEQ 2 was evaluated by calculations of (a) Cohen's (1960) kappa statistic, which corrects for chance agreements, and (b) overall percent agreements.[4] Kappa coefficients were .40 or higher for 11 of 16 items and .60 or higher for 7 items.[5] For the 16 types of events assessed, the percentage of occurrence agreements ranged from 0% to 100% and averaged 81%. The percentage of nonoccurrence agreements ranged from 59% to 94% and averaged 85%. The overall mean percentage of test–retest agreements ranged from 63% to 96% and averaged 83%.

Temporal stability was also examined separately for men and for women. For the men, kappa coefficients were .40 or higher for 10 of 16 items, and the percentages of occurrence agreements, nonoccurrence agreements, and overall agreements were 81%, 79%, and 80%, respectively, across all 16 items. Results for the women were similar to those for the men. For the women, kappa coefficients were .40 or higher for 11 items, and the percentages of

[3] Events on the TLEQ are presented in an order that proceeds gradually from stressors that are not highly personal (e.g., natural disasters or motor vehicle accidents) to events that are personally sensitive to many people (e.g., intimate partner abuse or sexual abuse).

[4] We evaluated the temporal stability of TLEQ items by using both percent-of-agreement calculations and Cohen's kappa statistic because the applicability of kappa to extremely low-rate phenomena has been questioned (Suen & Arey, 1989). As an example from the present study, the overall test–retest percent agreement for the exposure-to-warfare item was 94%, but the kappa was low (.02) because of the low rate of endorsement of this item.

[5] Kappas of .41 to .60 reflect moderate agreement, and kappas above .60 reflect substantial agreement (Landis & Kock, 1977).

occurrence agreements, nonoccurrence agreements, and overall agreements were 79%, 86%, and 82%, respectively, across all 16 items.

Temporal stability was notably high for items assessing childhood physical abuse, childhood exposure to family violence, partner abuse, and childhood sexual abuse by someone at least 5 years older (kappa coefficients = .70 to .91; overall percentage of agreements = 85% to 96%). High test–retest reliability for these items was somewhat surprising in light of the relatively long test–retest interval. It was thought that 60 days of continued sobriety or abstinence might have an effect on participants' ability to think clearly and objectively recall traumatic experiences of a potentially sensitive nature—such that recall of such experiences would change or improve with continued abstinence.

Temporal stability was problematic for TLEQ items assessing accidents other than motor vehicle accidents and childhood sexual abuse by someone less than 5 years older. In addition, temporal stability was only marginally acceptable on items assessing presence at a robbery and witnessing an assault of an acquaintance or stranger. With regard to the "other-accident" item, we suspect that this item will always be the TLEQ item with the lowest test–retest reliability because there are many different kinds of accidents. Reliable retrieval of all these potential experiences without a specific referent to the specific type of accident experienced (e.g., "fell out of a tree" or "cut my foot in a lawn mower") may be expected to be somewhat problematic. With regard to the items assessing robbery, witnessing stranger assault, and childhood sexual abuse by someone less than 5 years older, we thought it would be prudent to replicate this study before deciding whether these items needed to be reworded (see Studies 3, 4, and 5).

The results in Table 1 show that rates of trauma exposure were very high for both men and women in this residential substance abuse treatment program sample (relative to results obtained in epidemiological surveys of the general population [e.g., Norris, 1992; Resnick et al., 1993]). These results are consistent with the findings of other studies with substance-abusing populations (e.g., Dansky et al., 1996; Tremayne et al., 1998) and underscore the potential importance of addressing trauma issues as a treatment component in substance abuse treatment programs (e.g., Dunnegan, 1997; Evans & Sullivan, 1995). The TLEQ may be well suited for use as a trauma exposure screening instrument in such programs.

Study 3

Overview

The purpose of Study 3 was to evaluate the short-term temporal stability of TLEQ 2 with a sample of Vietnam veterans.

Method

Participants

The sample included 51 military veterans who served on active military duty in Vietnam during the Vietnam War. All participants had received vocational rehabilitation services from a firm under contract to the Department of Veterans Affairs. The mean ages and educational levels (in years) of participants were 50.8 (SD = 4.80) and 14.27 (SD = 2.09), respectively. Participants' primary ethnic backgrounds were White (52%), Native Hawaiian or part Hawaiian (14%), other Pacific Islander (14%), Asian (14%), Black (8%), and other ethnicity (2%).

Procedure

Study 3 was conducted in the context of a larger project involving the administration of several other questionnaires in addition to TLEQ 2 (Kelly, 1999). A total of 101 potential participants were mailed a letter by a vocational rehabilitation counselor (Martin Kelly) who had previously provided counseling services to each of these individuals. The solicitation letter described a two-phase study, in which participants would be sent two (identical) questionnaire packets, separated by a period of time that was determined by when the first packet was completed and returned. Individuals who agreed to participate (per follow-up phone calls) were asked to complete each questionnaire packet within 2 days of receipt and to return the completed packets in self-addressed, stamped envelopes. The mailed questionnaire packets included an informed-consent form, and participants received a modest payment in exchange for their participation. Of 61 participants who completed the initial questionnaire packet, 51 completed and returned the retest packet.

Results and Discussion

Temporal Stability

The mean period of time between the first and second administrations of TLEQ 2 was 17.5 days (SD = 12.3). The test–retest interval ranged from 5 to 45 days, with a median interval of 13 days. The percentage of participants reporting each TLEQ event and the overall results of the test–retest analyses are presented in Table 1. Kappa coefficients were .40 or higher for 12 of 16 items and .60 or higher for 5 items. For the 16 event items, the percentage of occurrence agreements ranged from 0% to 100% and averaged 74%. The percentage of nonoccurrence agreements ranged from 56% to 98% and averaged 86%. The overall mean percentage of test–retest agreements ranged from 71% to 98% and averaged 84%.

Positive Predictive Power

Because all participants in Study 3 were documented Vietnam War veterans (by their military service records on file at the Department of Veterans Affairs), it was possible to assess the positive predictive power of the TLEQ item assessing exposure to combat or warfare. One of the 61 initial participants did not answer the combat item during the first administration of the TLEQ (but did report combat exposure on the retest). Of the other 60 veterans, all but 1 endorsed the item assessing combat exposure. The 1 individual who denied combat exposure on the initial administration of the TLEQ did acknowledge military service in a war zone but denied combat exposure. This person was a medic who was stationed in Thailand and who flew in and out of Vietnam transporting combatants who needed medical attention. After taking the TLEQ the first time, he said he remembered one incident when he was fired upon and acknowledged combat exposure on the retest.

As will be discussed at greater length in the General Discussion, false-positive reports of trauma exposure may be less of a threat to the validity of the TLEQ than are false reports of nonexposure (e.g., Widom & Morris, 1997; Williams, 1994). Existing evidence suggests that retrospective self-reports in general and reports of prior trauma specifically are generally accurate (Brewin, Andrews, & Gottlib, 1993; Herman & Harvey, 1997; Howes, Siegel, &

Table 1
Reports of Event Occurrences and Test–Retest Reliability of the Traumatic Life Events Questionnaire (TLEQ) as Assessed by Percentage of Agreements and Cohen's Kappa Coefficient in Studies 2, 3, 4, and 5

TLEQ items and studies (test–retest interval)	Reports of occurrence (%) at Time: 1	2	Occurrence agreements %	n	Nonoccurrence agreements %	n	Overall agreements (%)	Kappa
Natural disasters								
Study 2 (substance abusers—2-month interval)	43	45	81	17/21	82	23/28	82	.63
Study 3 (Vietnam veterans—5- to 45-day interval)	65	69	91	30/33	72	13/18	84	.65
Study 4 (college students—1-week interval)	24	27	73	11/15	84	41/49	81	.52
Study 5 (battered women—2-week interval)	79	76	94	31/33	89	8/9	93	.80
Motor vehicle accidents								
Study 2	42	50	90	18/20	79	22/28	83	.67
Study 3	61	61	81	25/31	70	14/20	76	.51
Study 4	27	24	72	13/18	93	43/46	88	.68
Study 5	50	52	90	19/21	86	18/21	88	.76
Other accidents								
Study 2	39	51	68	13/19	60	18/30	63	.27
Study 3	69	67	77	27/35	56	9/16	71	.33
Study 4	27	23	56	10/18	85	39/46	77	.31
Study 5	17	20	71	5/7	91	31/34	88	.59
Warfare or combat								
Study 2	2	2	0	0/2	98	46/47	94	−.02
Study 3	98	98	100	50/50	0	0/1	98	.38
Study 4	3	3	50	1/2	97	60/62	95	.38
Study 5	5	5	50	1/2	98	39/40	95	.48
Sudden death of close friend or loved one								
Study 2	76	88	100	37/37	59	6/12	76	.60
Study 3	88	88	93	41/44	50	3/6	88	.43
Study 4	55	61	92	34/37	78	21/27	86	.71
Study 5	76	79	91	29/32	60	6/10	83	.52
Life-threatening or permanently disabling event for loved one								
Study 5	51	37	57	12/21	85	17/20	71	.42
Life-threatening illness								
Study 5	30	23	67	8/12	96	27/28	88	.68
Robbery involving a weapon								
Study 2	30	23	42	5/12	89	32/36	77	.33
Study 3	36	32	61	11/18	84	27/32	76	.47
Study 4	6	5	50	2/4	95	57/60	92	.40
Study 5	15	15	67	4/6	94	33/35	90	.61
Severe assault by acquaintance or stranger								
Study 2	85	85	93	37/40	57	4/7	85	.50
Study 3	69	76	91	32/35	56	9/16	80	.51
Study 4	18	21	69	11/15	96	44/46	89	.69
Study 5	17	39	100	7/7	74	25/34	78	.49
Witness to severe assault of acquaintance or stranger								
Study 2	65	65	78	25/32	59	10/17	71	.37
Study 3	69	76	85	23/27	71	17/24	78	.56
Study 4	16	24	59	10/17	89	40/45	81	.50
Study 5	50	48	70	14/20	75	15/20	73	.45
Threat of death or serious bodily harm								
Study 2	82	78	88	35/40	67	6/9	84	.50
Study 3	82	72	80	33/41	67	6/9	78	.39
Study 4	26	29	69	11/16	85	39/46	81	.51
Study 5	73	76	93	28/30	73	8/11	88	.68
Childhood physical abuse								
Study 2	67	67	97	32/33	94	15/16	96	.91
Study 3	61	53	86	18/21	90	27/30	88	.76
Study 4	26	19	63	10/16	96	44/46	87	.63
Study 5	41	39	76	13/17	88	21/24	83	.65
Witness to family violence								
Study 2	37	35	92	34/37	92	11/12	92	.79
Study 3	61	53	84	26/31	95	19/20	89	.76
Study 4	40	44	88	22/25	86	32/37	87	.74
Study 5	59	59	83	20/24	76	13/17	80	.60

Table 1 (*continued*)

TLEQ items and studies (test–retest interval)	Reports of occurrence (%) at Time: 1	2	Occurrence agreements %	n	Nonoccurrence agreements %	n	Overall agreements (%)	Kappa
Intimate partner abuse								
Study 2	65	67	94	30/32	82	14/17	90	.77
Study 3	33	31	71	12/17	89	31/35	83	.60
Study 4	23	21	71	10/14	94	45/48	89	.67
Study 5	88	88	95	36/38	25	1/4	88	.22
Childhood sexual abuse by someone at least 5 years older								
Study 2	51	57	92	22/24	78	18/23	85	.70
Study 3	26	26	92	12/13	97	36/37	90	.90
Study 4	19	16	83	10/12	100	50/50	97	.89
Study 5	40	35	81	13/16	96	23/24	90	.79
Childhood sexual abuse by someone close in age								
Study 2	27	27	46	6/13	81	29/36	74	.27
Study 3	12	8	50	3/6	98	43/44	92	.56
Study 4	5	5	33	1/3	97	57/59	94	.30
Study 5	23	26	78	7/9	90	27/30	87	.65
Adolescent sexual abuse								
Study 5	34	44	85	11/13	76	19/25	79	.56
Adult sexual abuse or assault								
Study 2	34	45	69	9/13	89	31/35	83	.58
Study 3	6	6	0	0/3	93	43/46	88	−.07
Study 4	19	19	67	8/12	92	46/50	87	.59
Study 5	32	32	67	8/12	85	22/26	79	.51
Stalking								
Study 2	49	49	79	19/24	80	20/25	80	.59
Study 3	42	38	74	14/19	88	23/26	82	.63
Study 4	21	21	85	11/13	96	47/49	94	.81
Study 5	56	64	100	22/22	82	14/17	92	.84
Miscarriage								
Study 5	36	38	93	13/14	92	23/25	92	.84
Abortion								
Study 5	59	59	100	22/22	100	15/15	100	1.00

Brown, 1993; Pillemer, 1998) and that documented trauma tends to be substantially underreported (e.g., Widom & Morris, 1997; Widom & Shepard, 1996; Williams, 1994). However, additional research that examines the accuracy of self-reports of trauma exposure on the TLEQ is still needed.

The results obtained in Study 3 were similar to the results obtained in Study 2. In particular, the levels of test–retest agreement were very strong on items assessing childhood physical abuse, witnessing family violence while growing up, and childhood sexual abuse by someone at least 5 years older. As in Study 2, the other-accident item exhibited the poorest temporal stability.

Study 4

Overview

The purposes of Study 4 were (a) to evaluate the convergent validity of TLEQ 2—judged against structured-interview assessments of prior trauma exposure—with a sample of college students and (b) to evaluate the short-term temporal stability of TLEQ 2 with the same sample.

Questionnaire Versus Interview Inquiry of Trauma Exposure

Some authors believe that face-to-face personal interviews will elicit higher rates of trauma disclosure than will questionnaire inquiry (e.g., Wyatt, Lawrence, Vodounon, & Mickey, 1992; Wyatt & Peters, 1986). However, the few studies conducted in this area generally have not shown a clear advantage of one format over the other (e.g., O'Leary et al., 1992; Stinson & Hendrick, 1992). Moreover, any differences in trauma disclosure rates in response to interview and questionnaire formats may be minuscule when compared to spontaneous disclosure rates, which tend to be very low (e.g., Abbott et al., 1995; Briere & Zaidi, 1989; Goldberg & Tomlanovich, 1984; O'Leary et al., 1992; Stinson & Hendrick, 1992). Study 4 allowed us to compare trauma disclosure rates on the TLEQ with disclosure rates evoked by a structured interview comprising questions that correspond to items on the TLEQ.

Method

Participants

Participant volunteers included 46 women and 16 men enrolled in an undergraduate abnormal psychology class at the University of Hawaii. The

sample represented about 80% of the class enrollment. The mean ages (in years) of participants were 21.1 for women (SD = 4.49) and 23.8 for men (SD = 8.70). The ethnic backgrounds of participants were Japanese (39%), Filipino (14%), Chinese (13%), part-Hawaiian or Native Hawaiian (8%), White (5%), Black (3%), and other, mixed or unspecified ethnicity (16%). All participants gave informed consent and received extra course credit for taking part in the research.

Assessment Instruments

Participants were administered a structured Traumatic Life Events Interview (TLEI) (Kubany, 1995) in addition to the TLEQ 2. The TLEI is composed of questions that correspond to questions on the TLEQ. For example, on the childhood physical abuse item, the interviewer asks, "While growing up, were you physically punished in a way that resulted in bruises, burns, cuts, or broken bones?" The interviewer asks each question as it is written in the interview booklet and only paraphrases if the respondent doesn't understand the question. When respondents answer "yes" to a TLEI question, they are asked how many times the event in question occurred and to briefly describe (a) what happened or (b) the incident that was the most distressing or disturbing (when respondents say that the type of event in question happened more than once). There is space in the interview booklet for interviewers to record a respondent's description of each event.

Procedure

Participants were given the TLEQ 2 for the first time as a group. Individual appointments were scheduled 1 week later to readminister the TLEQ 2 and to administer the TLEI. Five of us (E.S.K., M.B.L., A.S.K., S.B.W., and K.B.), who were all blind to TLEQ results, administered the TLEI to approximately the same numbers of participants.[6]

Results

Convergent Validity

The results of the analyses comparing questionnaire and interview disclosure and agreement rates for men and women combined are shown in Table 2. For comparisons of disclosure agreements when the TLEQ and the TLEI were administered on the same day, kappa coefficients were above .40 for 15 of 16 items and above .60 for 13 items. For the 16 event items, the percentage of occurrence agreements ranged from 35% to 100% and averaged 80%. The percentage of nonoccurrence agreements ranged from 87% to 100% and averaged 95%. The overall mean percentage of same-day questionnaire–interview agreements ranged from 73% to 100% and averaged 92%. In separate analyses for the men and the women, kappa coefficients were above .40 on 13 of 16 items for both men and women. For the men, the percentages of occurrence agreements, nonoccurrence agreements, and overall agreements were 67%, 93%, and 86%, respectively, across all 16 items. For the women, the percentages of occurrence agreements, nonoccurrence agreements, and overall agreements were 66%, 91%, and 81%, respectively, across all 16 items.

Because recent memory effects could have accounted for some of the agreements between interview and questionnaire disclosure rates, we also examined convergent validity for the two formats administered with a 1-week delay. For the 1-week delay comparisons of questionnaire and interview disclosure rates, kappa coefficients were above .40 for 13 of 16 items and above .60 for 5 items. For the 16 event items, the percentage of occurrence agreements ranged from 0% (0 of 2 for the item assessing childhood sexual abuse by someone at least 5 years older) to 85% and averaged 59%. The percentage of nonoccurrence agreements ranged from 72% to 100% and averaged 90%. The overall mean percentage of questionnaire–interview agreements (with a 1-week delay between questionnaire and interview administrations) ranged from 74% to 97% and averaged 85%. In separate analyses for the men and the women, kappa coefficients were above .40 on 12 of 16 items for men and above .40 on 15 of 16 items for women. For the men, the percentages of occurrence agreements, nonoccurrence agreements, and overall agreements were 78%, 96%, and 82%, respectively, across all 16 items. For the women, the percentages of occurrence agreements, nonoccurrence agreements, and overall agreements were 94%, 91%, and 91%, respectively, across all 16 items.

The proportions of participants who reported having experienced each of the 16 events listed on the TLEQ and the TLEI are shown in Table 3—for both questionnaire and interview formats. For eight items, participants reported a slightly larger number of potentially traumatic experiences on the TLEQ than on the TLEI; for six items, participants reported a slightly larger number of potentially traumatic experiences on the TLEI than on the TLEQ. On two items, participants reported the same number of potentially traumatic experiences on the TLEQ and on the TLEI. Differences in the proportions of participants disclosing potentially traumatic experiences on the TLEQ and the TLEI were assessed with a test of proportions (Richards & LaCava, 1983). None of the differences were statistically significant.

Participants' acknowledgments of exposure to events listed on the TLEQ and the TLEI were only indirect evidence that participants were reporting exposure to events that matched the events described on the TLEQ. In order to obtain information about the experiences to which participants were referring when endorsing TLEQ items, participants were asked to provide brief narrative descriptions when they acknowledged exposure to events listed on the TLEI. To assess the extent to which these descriptions corresponded to *DSM-IV* PTSD criterion A1, the descriptions were independently coded by one of us (E.S.K.) and a postdoctoral fellow in clinical psychology who was blind to the purposes of the coding and the study. Described events were coded as (a) satisfying criterion A1 for the event in question, (b) not satisfying criterion A1, (c) satisfying criterion A1 but for a different event, or (d) uncodable because of ambiguous or insufficient information. Ninety percent of participants' descriptions (184 of 205) were coded as satisfying criterion A1 (for the event in question) by E.S.K., and 96% (196 of 205) were coded as satisfying criterion A1 by the second rater. Ninety-six percent of participants' descriptions that were coded as satisfying criterion A1 by E.S.K. were also coded as satisfying criterion A1 by the second rater.

TLEQ Test–Retest Reliability

The results of the 1-week test–retest analyses for men and women combined are presented in Table 1. Kappa coefficients were .40 or higher for 14 of 16 items and .60 or higher for 8 items.

[6] To promote consistency in interview administration, E.S.K. provided formal interview training for each of the other four interviewers. E.S.K. modeled administration of the TLEI twice for each of the other interviewers and observed each of them administer the TLEI twice, providing corrective feedback as necessary.

Table 2
Convergent Validity of the Traumatic Life Events Questionnaire (TLEQ) With the Traumatic Life Events Interview (TLEI) as Assessed by Administration of Questionnaire and Interview on the Same Day and After a 1-Week Delay (Study 4)

	Occurrence agreements				Nonoccurrence agreements				Overall agreements (%)		Kappa	
	Same day		1-Week delay		Same day		1-Week delay					
Type of event	%	*n*	%	*n*	%	*n*	%	*n*	Same day	1-Week delay	Same day	1-Week delay
Natural disasters	35	6/17	50	7/14	87	39/45	84	43/48	73	81	.52	.24
Motor vehicle accidents	93	14/15	71	12/17	94	44/47	89	40/45	94	84	.83	.68
Other accidents	79	11/14	47	8/17	92	44/48	84	38/45	89	74	.69	.33
Warfare or combat	50	1/2	50	1/2	98	59/60	98	59/60	97	97	.48	.48
Sudden death of close friend or loved one	89	34/38	81	30/37	88	21/24	72	18/25	89	77	.76	.53
Robbery involving a weapon	67	2/3	50	2/4	95	55/58	95	57/60	94	91	.47	.40
Severe assault by acquaintance or stranger	69	9/13	50	8/16	100	49/49	98	45/46	94	85	.78	.56
Witness to severe assault of acquaintance or stranger	67	10/15	58	9/17	94	44/47	91	41/45	87	81	.63	.48
Threat of death or serious bodily harm	82	14/17	60	9/56	98	43/44	87	40/46	93	79	.83	.47
Childhood physical abuse	92	11/12	75	12/16	90	45/50	91	42/46	90	87	.72	.66
Witness to family violence	85	23/27	76	19/25	91	31/34	81	29/36	87	79	.77	.56
Intimate partner abuse	85	11/13	57	8/14	96	47/49	90	43/48	94	82	.81	.48
Sexual abuse before age 13 by someone at least 5 years older	100	9/9	82	9/11	100	52/52	100	50/50	100	97	1.00	.88
Sexual abuse before age 13 by someone less than 5 years older	100	2/2	0	0/2	100	58/58	93	56/58	100	93	.30	1.00
Sexual abuse after age 13	82	9/11	58	7/12	98	48/49	94	45/48	95	87	.83	.56
Stalking	100	13/13	85	11/13	92	45/49	88	43/49	94	87	.83	.65

For the 16 event items on the TLEQ 2, the percentage of occurrence agreements ranged from 33% to 92% and averaged 68%. The percentage of nonoccurrence agreements ranged from 78% to 100% and averaged 91%. The overall mean percentage of test–retest agreements ranged from 77% to 94% and averaged 88%. In separate analyses for the men and the women, kappa coefficients were above .40 on 13 of 16 items for both men and women. For the men, the percentages of occurrence agreements, nonoccurrence agreements, and overall agreements were 69%, 92%, and 86%, respectively, across all 16 items. For the women, the percentages of occurrence agreements, nonoccurrence agreements, and overall agreements were 70%, 92%, and 84%, respectively, across all 16 items.

Discussion

The results of Study 4 provide some evidence for the convergent validity of the TLEQ with a structured-interview assessment of trauma exposure. The numbers of disclosure agreements between the two inquiry formats were generally adequate to substantial across a broad spectrum of potentially traumatic events. Rates of disclosure agreements between the two formats were similar whether the TLEQ and the TLEI were administered with a 1-week delay or on the same day. Also, the magnitudes of the differences in disclosure rates between the TLEQ and the TLEI were small and nonsignificant for each the 16 specific types of trauma assessed. These results are consistent with other research showing no advantage of interview over questionnaire assessment of trauma history (e.g., O'Leary et al., 1992; Stinson & Hendrick, 1992).

The order of the administration of the questionnaire and the interview was not counterbalanced. As a result, there is no way to know whether administration of the trauma history interview first would have a priming or suppressing effect on trauma disclosures on the TLEQ. The design may have favored interview disclosure to the extent that completing the TLEQ primed participants to review their lives and recall additional experienced events during the interview (events that had been overlooked when completing the TLEQ). However, participants did not report more trauma events during the interviews, suggesting that the TLEQ may have evoked acknowledgment of most readily retrievable events. At the same time, it is possible that the convergence between administration formats occurred because participants knew or presumed that the administrator had reviewed their first self-report measure and tried during the interview to be as consistent as possible with their prior report. This explanation may be more likely to apply when the questionnaires and interviews were administered on the same day than when their administration was separated by 1 week.

Debriefings of interview participants revealed that the wordings of the natural disaster item and the item assessing childhood sexual abuse "by someone less than 5 years older" were confusing to some participants. Therefore, these two items were reworded for the next and final version of the TLEQ (Study 5).

Table 3
Proportions of Participants Reporting Having Experienced 16 Potentially Traumatic Events per Questionnaire Inquiry and Interview Inquiry (Study 4)

Type of event	Questionnaire disclosures	Interview disclosures
Natural disasters	.23	.30
Motor vehicle accidents	.28	.25
Other accidents	.28	.23
Warfare or combat	.03	.05
Sudden death of close friend or loved one	.58	.63
Robbery involving a weapon	.06	.08
Severe assault by acquaintance or stranger	.26	.21
Witness to severe assault of acquaintance or stranger	.27	.24
Threat of death or serious bodily harm	.26	.29
Childhood physical abuse	.26	.19
Witness to family violence	.40	.44
Intimate partner abuse	.23	.21
Sexual abuse before age 13 by someone at least 5 years older	.19	.16
Sexual abuse before age 13 by someone close in age	.05	.05
Sexual abuse after age 13	.20	.17
Stalking	.21	.21

Note. Differences in the proportions of participant disclosures on the interview and the questionnaire were nonsignificant for each of the 16 events.

Study 5

Overview

The purpose of Study 5 was to evaluate the short-term temporal stability of an expanded version of the TLEQ (TLEQ 3; Western Psychological Services, in press)—which included a slightly revised response format—with a sample of women attending support groups for battered women. Study 5 examined the temporal stability of reports of intense fear, helplessness, or horror in addition to the temporal stability of reports of event exposure.

TLEQ 3

Revised Response Format

In the TLEQ 3, the response format was revised in two ways expected to make the TLEQ easier to complete and to improve the temporal consistency of (a) total frequency-of-occurrence reports of each experienced event and (b) reports of occurrence or nonoccurrence of intense fear, helplessness, or horror during each experienced event. First, we eliminated the open-ended, "how many times?" event occurrence frequency question in the TLEQ 3 (see Study 1 *Results*). Instead, respondents were offered seven fixed-choice options to each type-of-event question: from *never* and *once, twice, 3 times, 4 times, 5 times* to *more than 5 times.* Second, when respondents indicated that a potentially traumatic event had occurred, they were immediately asked whether this event evoked intense fear, helplessness, or horror.

Additional TLEQ Items and Item Rewordings

On the basis of our ongoing reviews of the traumatic stress literature (e.g., American Academy of Pediatrics Task Force on Adolescent Assault Victim Needs, 1996; Barakat et al., 1997; Tjemsland, Soreide, & Malt, 1998; Widener, 1996), we added items to assess (a) life-threatening personal illnesses; (b) adolescent sexual abuse; (c) miscarriages; (d) abortions; and (e) living loved ones' experiences of life-threatening or personally disabling accidents, assaults, or illnesses. Recent research has indicated that each of these relatively common types of events is traumatic to some people. With the inclusion of the five additional items, the Flesch grade-level reading difficulty score of TLEQ 3 is 6.1 (Microsoft Corporation, 1991–1992).

Two TLEQ items were reworded for TLEQ 3. The item assessing childhood sexual abuse "by someone less than 5 years older" was reworded to refer to unwanted sexual contact before age 13 "with someone close in age." The reworded natural disaster item stated simply, "Have you ever experienced a natural disaster (a flood, hurricane, earthquake, etc.)?"

Possible Use of Scores on the TLEQ as Indices of Symptom Severity

There is considerable evidence that the deleterious mental health effects of trauma exposure are cumulative. That is, earlier traumatization is a risk factor for heightened PTSD symptomatology in response to subsequent traumatization (e.g., Cloitre, Scarvalone, & Difede, 1997; Follette, Polusny, Bechtle, & Naugle, 1996; King et al., 1996; Kingma, 1999). With the final version of the TLEQ, it is possible to assess the relationship between PTSD status and patterns of responses on the TLEQ. Study 5 examined the relationship between PTSD status (present or absent) and (a) the number of different types of TLEQ events experienced; (b) the number of different types of TLEQ events experienced that evoked intense fear, helplessness, or horror; and (c) the total number of discrete TLEQ events reported as having been experienced.

Method

Participants

The sample included 42 women receiving support group counseling services from a nonprofit community agency that serves battered women. All the women had undergone intake screening and were deemed eligible

for support group participation if they had been physically or emotionally abused or subjected to criminal property damage by a present or former intimate partner. Participants ranged in age from 20 to 54 years (M = 32.9; SD = 8.4), with a mean of 12.9 years of education (SD = 2.0). Their ethnic backgrounds were White (31%), Native Hawaiian or part-Hawaiian (17%), Filipino-American (14%), Japanese-American (11%), and other, mixed or unspecified ethnicity (16%). Sixty-two percent of the women reported having been physically hurt more than five times by an intimate partner, and 64% indicated that they had been threatened with death or serious bodily harm by an intimate partner. Eighty-three percent of the women were estimated to have partner abuse-related PTSD on the basis of their scores on a recently validated self-report measure of PTSD (Burns, Leisen, & Kubany, 1997; Kubany, Leisen, Kaplan, & Kelly, 2000).

Measures

The measures included the TLEQ 3 and the Distressing Event Questionnaire (DEQ), a self-report measure of PTSD (Burns et al., 1997; Kubany et al., 2000). The DEQ exhibited high internal consistency and good short-term stability in samples of Vietnam veterans and women in support groups for battered women. In a study of 74 women seeking services from the same agency with which this study was conducted, the DEQ was correlated .86 with the Modified PTSD Symptom Scale (Falsetti, Resnick, Resick, & Kilpatrick, 1993) and .82 with the Clinician Administered PTSD Scale (CAPS), a structured clinical interview (Blake et al., 1995). With a PTSD cutoff score of 18, the DEQ correctly identified 94% of the women who had PTSD on the CAPS and 87% of the women who did not have PTSD on the CAPS and correctly classified 93% of the women overall.

Procedure

The TLEQ was administered in small groups (5 to 13 women per group) at community service centers during regularly scheduled support group meetings. Participants gave informed consent, and the study was administered by support group facilitators who described the research as a study to assess experiences of traumatic life events. More than 90% of the women solicited agreed to participate in the study, and each women received a modest payment in exchange for her voluntary participation. The initial TLEQ was administered to 63 women, but because of support group attendance attrition, only 42 women completed the TLEQ retest, which was administered 2 weeks after the initial test.

Results

Temporal Stability

Event occurrences and nonoccurrences. The percentage of participants reporting each TLEQ 3 event and the overall results of the test–retest analyses are presented in Table 1. Kappa coefficients were above .40 for 20 of 21 items and .60 or above for 12 items. For TLEQ items 1 to 21, the percentage of occurrence agreements ranged from 50% to 100% and averaged 81%. The percentage of nonoccurrence agreements ranged from 25% to 100% and averaged 82%. The overall mean percentage of test–retest agreements ranged from 71% to 100% and averaged 86%.

Pearson product–moment correlations were calculated to assess the relationship between Time 1 and Time 2 frequency-of-occurrence reports for each event on the TLEQ. Excluding the item assessing exposure to warfare (which was reported by only 2 women), the frequency-of-occurrence correlations on the other 20 items ranged from .50 (sexual abuse as an adult) to .93 (childhood sexual abuse by someone 5 years older) and averaged .77 (all ps < .05).

Intense fear, helplessness, or horror. The test–retest reliability of respondents' reports of the occurrence or nonoccurrence of intense fear, helplessness, or horror was examined for all instances in which an event was endorsed as experienced on both administrations of the TLEQ and in which the intense fear, helplessness, or horror question was answered both times. The results of these analyses are presented in Table 4. Kappa coefficients were .40 or higher for 19 of 21 items and .60 or higher for 16 items. The overall percentage of occurrence agreements was 91% (194 of 213), and the overall percentage of nonoccurrence agreements was 81% (61 of 75). The overall percentage of test–retest agreements for the occurrence or nonoccurrence of intense fear, helplessness, or horror was 89%.

Discriminative Validity

Eighty-four percent (n = 52) of 61 women who completed the DEQ had PTSD symptom scores that exceeded an empirically determined cutoff score for estimating a diagnosis of PTSD (Kubany et al., 2000). Compared to participants without PTSD, participants with PTSD reported having experienced (a) significantly more types of TLEQ events (M = 10.7 versus M = 6.4), $t(59) = 4.0$, $p < .05$; (b) significantly more total events on the TLEQ (M = 32.0 versus M = 16.8), $t(59) = 2.8$, $p < .05$; and (c) significantly more TLEQ events that evoked intense fear, helplessness, or horror (M = 8.4 versus M = 4.7), $t(58) = 3.7$, $p < .05$ (all one-tailed, Bonferroni-corrected values).

Positive Predictive Power

To be eligible for support group participation at the agency from which Study 5 participants were recruited, women have to pass a rigorous screening that includes detailed inquiries about victimizations by intimate partners. Most women who receive services from this agency have been physically abused by an intimate partner, but an estimated "10 to 20%" report exclusively psychological or emotional abuse, such as name calling, humiliation, harassment, and/or extreme possessiveness or jealousy (Donna Hopkins, personal communication, April 20, 1999). Ninety-two percent of 63 women (n = 58) who completed the first administration of the TLEQ endorsed the item assessing physical abuse by an intimate partner.

On the first administration of the TLEQ, 42 women who were estimated to have PTSD on the basis of questionnaire assessment (Kubany et al., 2000) acknowledged intimate partner physical abuse on the TLEQ and also noted whether or not they had experienced intense fear, helplessness, or horror during the abuse. Of these 42 PTSD-positive women, all but 1 (98%) indicated that they had experienced intense fear, helplessness, or horror during the abuse.

Discussion

Overall, the temporal stability of the 21 TLEQ 3 items was good to excellent in the battered-women sample, with an average kappa of .63 and an average overall test–retest hit rate of 86%. The reworded items assessing exposure to natural disasters and childhood sexual abuse by someone close in age both demonstrated very good temporal stability. Of the five new items, the item assessing a loved one's exposure to a life-threatening or perma-

Table 4
Test–Retest Reliability of Reports of Occurrence or Nonoccurrence of Intense Fear, Helplessness, or Horror (IFHH) on the Traumatic Life Events Questionnaire (TLEQ) When Events Were Reported as Having Occurred (Study 4)

	Agreements of occurrences and nonoccurrences of IFHH for TLEQ test–retest					
	Occurrence agreements		Nonoccurrence agreements			
Type of event	%	*n*	%	*n*	Overall agreements (%)	Kappa
Natural disasters	87	13/15	80	8/10	84	.67
Motor vehicle accidents	92	12/13	100	3/3	94	.82
Other accidents	67	2/3	100	3/3	83	.67
Warfare or combat	None		100	2/2	100	
Sudden death of close friend or loved one	92	12/13	78	7/9	88	.71
Robbery involving a weapon	100	4/4	83	5/6	90	.80
Severe assault by acquaintance or stranger	100	5/5	25	1/4	67	.27
Witness to severe assault of acquaintance or stranger	92	12/13	50	1/2	87	.42
Threat of death or serious bodily harm	100	17/17	100	2/2	100	1.00
Childhood physical abuse	88	7/8	100	2/2	90	.74
Witness to family violence	100	15/15	100	2/2	100	1.00
Physical abuse by an intimate partner	93	25/27	0	0/1	89	−.05
Sexual abuse before age 13 by someone at least 5 years older	91	10/11	100	2/2	92	.76
Sexual abuse before age 13 by someone close in age	100	5/5	100	3/3	100	1.00
Sexual abuse during adolescence	100	5/5	75	3/4	88	.77
Sexual abuse as an adult	80	4/5	100	3/3	88	.75
Stalking	87	13/15	100	2/2	88	.61
Life-threatening illness	71	5/7	67	3/4	75	.44
Life-threatening or permanently disabling event for loved one	78	7/9	67	2/3	73	.40
Miscarriage	100	8/8	100	4/4	100	1.00
Abortion	87	13/15	83	5/6	86	.67
Overall	91	194/213	81	61/75	89	

nently disabling event showed the poorest performance in the test–retest analyses (kappa = .42). The other four new items exhibited good to excellent temporal stability.

The temporal stability of participants' reports of occurrences or nonoccurrences of intense fear, helplessness, or horror items was also very good. Confidence that respondents are likely to be consistent in answering this item may have important practical implications. In clinical settings in which there is a premium on time (e.g., emergency rooms), clinicians may be able to time efficiently identify the most important experienced events by asking follow-up questions only about experienced events that evoked intense emotion. At the same time, certain traumatic events, such as assaultive violence (e.g., rape or partner abuse), are greater risk factors for the development of PTSD than other traumatic events (e.g., natural disasters) (Breslau et al., 1998); therefore, clinicians may wish to routinely ask follow-up questions about reports of assaultive violence, even when clients deny having experienced intense emotion during such events. As noted by one of the anonymous reviewers, some individuals might be willing to report a particular event but may downplay their response about the intensity of emotion experienced during the event.

Among the 63 women who completed the initial administration of the TLEQ, the mean number of different types of events reported was 9.97 (SD = 3.79), and the mean number of events that evoked intense fear, helplessness, or horror was 7.00 (SD = 3.59). These high rates may indirectly reflect the validity of the women's willingness to disclose traumatic experiences on the TLEQ. It may be reasonable to suppose that rates of disclosure would not have been so high if the women had been reluctant to disclose most, if not all, recalled traumatic experiences (in this support group setting). The high rates of traumatization among women in this study also underscore the importance of comprehensive trauma history assessment in treatment programs that serve battered women (Hill, Kubany, & Owens, 1998; Humphrey, Lee, Neylan, & Marmar, 1999; see also Cloitre et al., 1997; Kubany, 1998).

General Discussion

The aspect of the TLEQ that may prove to be its greatest strength is its content validity (Haynes et al., 1995; see also Norris & Riad, 1997, p. 9). Efforts were made to develop a final instrument that validly assesses respondents' exposure across the domain of important traumatic events. Because it taps a broader range of traumatic events than other instruments, the TLEQ may identify important traumatic experiences that are not detected by other measures of the same construct. In a study of 404 college students who completed the TLEQ 2, 93% reported exposure to at least one traumatic event (Martin, Leisen, Owens, Droge, & Kubany, 1997). By comparison, only 69% of respondents reported exposure to at least one traumatic event in each of two large-scale epidemiological surveys that utilized a structured-interview trauma history assessment (Norris, 1992; Resnick et al., 1993).

To our knowledge no previously constructed instrument that assesses exposure to a broad range of traumatic events assesses occurrences of stalking, miscarriages, abortions, childhood witnessing of family violence, or life-threatening or permanently disabling accidents, assaults, or illnesses to loved ones—all of which can be very traumatic. The TLEQ assesses exposure to all of these events. In addition, relatively infrequent but potentially

important specific events that are not assessed exclusively by a single TLEQ item are mentioned as examples in the item assessing accidents other than motor vehicle accidents and in the item assessing other trauma. The other-kind-of-accident item lists the following examples: a plane crash, a drowning or near drowning, an electrical or machinery accident, an explosion, home fire, chemical leak, and overexposure to radiation or toxic chemicals. The other-trauma item lists the following examples: lost in the wilderness, a serious animal bite, violent death of a pet, being kidnapped or held hostage, and seeing a mutilated body or body parts. Providing these examples may draw attention to and help define these events as potentially traumatic and facilitate accurate client reporting of all traumatic events to which the client had been exposed.

The importance of routinely conducting broad-band trauma history assessment for making treatment referrals or decisions to target trauma as a therapeutic issue was emphasized earlier. For clinicians who specialize in the treatment of posttraumatic stress, a less obvious but perhaps equally important reason for broad-band trauma exposure assessment has to do with identifying and treating all important sources of traumatization, which is probably the exception rather than the rule in most PTSD treatment programs (e.g., Johnson et al., 1996). For example, identification and treatment of important "secondary" trauma issues, such as the sudden death of a loved one, with clients in specialized trauma recovery programs for combat veterans or battered women may facilitate overall recovery from the effects of traumatization (e.g., Cloitre et al., 1997; Hill, Kubany, & Owens, 1998; see also Kubany, 1998, pp. 148–149).

Potential limitations of the TLEQ need to be acknowledged. We did not obtain independent verification or documentation of participants' self-reports of trauma exposure (e.g., police reports, hospital records, or reports of significant others). Therefore, we do not know the true extent to which participants' self-reports were valid indicators of trauma exposure. Also, participants' self-reports of trauma exposure may more validly reflect actual occurrences of some kinds of traumatic events than of others (e.g., sudden death of a loved one versus partner abuse).

We suspect that false-positive reports of trauma exposure may be less of a threat to the validity of the TLEQ than are false reports of nonexposure (e.g., Widom & Morris, 1997; Williams, 1994). Existing evidence on the external validity of autobiographical recollections of prior life experiences suggests that retrospective self-reports in general and reports of prior trauma specifically are generally accurate (Brewin et al., 1993; Herman & Harvey, 1997; Howes et al., 1993; Pillemer, 1998). Regarding false reports of nonexposure, substantial underreporting of physical abuse and sexual abuse occurs among known victims of childhood physical abuse or sexual abuse (Widom & Morris, 1997; Widom & Shepard, 1996). False reports of nonexposure could be due to a variety of reasons, including inability to remember and deliberate reluctance to disclose the abuse (e.g., Williams, 1994).

Despite the conclusions from prior research and limited suggestive data on the positive predictive power of the TLEQ (Studies 3 and 5), solid experimental evidence on the external validity of TLEQ reports of trauma exposure is lacking. Research is needed that seeks to independently document or verify the extent to which events reported on the TLEQ actually did occur.

With respect to the use of the TLEQ in clinical settings, its clinical utility or validity may be conditional on a number of factors that could affect honest self-disclosures—such as gender and interpersonal style of the person administering the TLEQ, the type of setting (e.g., emergency room versus battered-women's support group), and the privacy of administration (e.g., a public waiting room versus a private cubicle or office). It may be important to emphasize, however, that the TLEQ is meant to be used as a screening instrument in clinical settings, and follow-up interviews may yield important corroborative information for establishing the validity of initial self-reports.

All participants in our research were administered an informed-consent form and assured of confidentiality and anonymity. Research is needed in which the TLEQ is first administered in clinical settings for clinical purposes, with retests administered under controlled research conditions that guarantee participant anonymity and confidentiality.

The TLEQ item with the poorest temporal consistency assesses accidents other than motor vehicle accidents. In three of four studies, the kappa coefficient assessing test–retest agreement for this item was less than .40, and overall percentages of test–retest agreements in these three studies ranged from only 63% to 77%. As discussed earlier, the domain of different kinds of accidents is so diverse that recall of such events may tend to be unreliable. We suspect that the positive predictive power for this item may be very good (i.e., positive self-reports may typically reflect accidents that did happen) but that nondisclosures may often reflect false-negative reporting. Thus, the item may have clinical utility. Nonetheless, because of its problematic reliability, we are considering deletion of the other-accident item from the TLEQ, pending additional study.

It may be noteworthy that several TLEQ items with the strongest temporal stability assess very personal life experiences that one might think some people would be reluctant to disclose. Across the four test–retest studies, temporal stability was very strong for items assessing childhood physical abuse (kappa = .63 to .91), witnessing family violence (.60 to .79), childhood sexual abuse by someone more than 5 years older (.70 to .90), and stalking (.59 to .84). The overall percentage of agreement for the intimate partner abuse item was also strong across Studies 2, 3, and 4, although the kappa slipped in Study 5 because of a poor nonoccurrence agreement rate (only 1 of 4, or 25%).

The TLEQ was designed to be used in combination with the DEQ, a brief measure of PTSD and PTSD severity (Burns et al., 1997; Kubany et al., 2000). When used together, the questionnaires constitute a trauma history and PTSD screening protocol. Both measures are purposely brief to make them attractive as screening instruments in a variety of mental health and primary medical care settings. To further promote trauma history and PTSD screening in clinical settings, we have developed computerized and self-administered versions of the two questionnaires. Computerized versions of interviews and questionnaires assessing an array of mental health concerns have been developed and shown to be reliable and valid and to exhibit equivalence with noncomputerized interview and questionnaire versions of the same instruments (Kobak, Greist, Jefferson, & Katzelnick, 1996; Kobak, Reynolds, & Greist, 1993; Newman, Consoli, & Taylor, 1997). The computerized TLEQ and DEQ are self-scoring and report-generating to minimize human resource involvement in the screening process. When the screening protocol is validated (Kubany, Haynes, & Hill, 1999), it may be a particularly time-efficient and

cost-effective method for assessing exposure to prior trauma and PTSD symptomatology.

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Received July 12, 1999
Revision received December 13, 1999
Accepted January 20, 2000 ■

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