Assessing Guilt After Traumatic Events

The Spanish Adaptation of the Trauma-Related Guilt Inventory

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Abstract. *Introduction:* The assessment of feelings of guilt has become an important area of psychology research, although few specific tools for their evaluation have been designed to date. One of the instruments available is the Trauma-Related Guilt Inventory (TRGI; Kubany & Haynes, 2001), which assesses the cognitive and emotional components of the feelings of guilt that arise following traumatic experiences. *Method:* We analyzed data from a sample of 650 university students aged between 18.0 and 30.6 years (M = 21.71; SD = 2.63), using the TRGI, the Brief Symptom Inventory (Derogatis, 1993), and the Distressing Event Questionnaire (Kubany, 2001). *Results:* The proposed adaptation of the TRGI to a Spanish population demonstrated more than satisfactory criterion validity. A three-factor model from a confirmatory factor analysis was tested, and the factor structure of the original scale was confirmed by an exceptionally high level of internal validity. *Discussion:* Our results show that the TRGI is an effective tool for assessing guilt after traumatic life events in the Spanish-speaking context.

Keywords: self-blame, confirmatory factor analysis, university students, traumatic events, Spanish-speaking context adaptation

Although the experience of guilt after a traumatic event has been associated with psychopathological symptoms related to posttraumatic stress disorder, depression, and substanceuse disorders (Kubany et al., 1996; Wilson, Droždek, & Turkovic, 2006), posttraumatic guilt has received little theoretical or empirical investigation in the field of trauma research. In one of the most recent studies, Kubany and Haynes (2001) claimed that feelings of guilt contain both an emotional or affective component and a series of cognitive dimensions or interrelated beliefs about the subject's involvement in the traumatic event. Kubany et al. (1995) defined guilt as "an unpleasant feeling with accompanying beliefs that one should have thought, felt, or acted differently" (p. 355). So guilt is a multicomponent construct composed of different factors that determine the

presence and magnitude of this feeling in response to a given event. These factors are, first, the psychological distress caused by the negative outcome of the event and, second, "guilt cognitions," or interrelated beliefs, concerning the individual's role in the event and the implications of this role: (a) perceived responsibility for negative results, (b) perception of insufficient justification for the actions taken, (c) perceived betrayal of one's values, and (d) beliefs of predictability, or the degree to which an individual believes that he/she knew that an event would have a negative outcome and that he/she could have done something to prevent its occurrence. Beliefs of predictability are related to "hindsight bias" (Fischhoff, 1975), which causes the individual to judge past behavior in the light of present knowledge, in the belief that he/she had prior knowledge of an event. The individual allows this new information to interfere with his/her memories of the event and refuses to acknowledge that this subsequent knowledge is affecting his/her judgment (Hawkins & Hastie, 1990).

Therefore, the appearance of guilt is dependent on the presence of negative feelings or distress and at least one of the guilt cognitions described above. For Kubany and Watson (2003), any event or situation viewed as negative by the individual and which causes a degree of distress, derived from the negative outcome of the event and from a series of beliefs about personal involvement in the outcome, increases the risk of developing feelings of guilt and, depending on the degree to which these components are present, also heightens their intensity.

The Trauma-Related Guilt Inventory (TRGI; Kubany & Haynes, 2001) is one of the few instruments designed to evaluate the cognitive and emotional components of guilt arising from traumatic experiences. It has been used to study the guilt experiences of a range of English-speaking sample populations, including war veterans (Kubany et al., 1995; Owens, Chard, & Cox, 2008), female victims of partner abuse (Kubany & Watson,

2002; Kubany et al., 1995, 2004), female victims of abuse and sexual violence (Resick, Nishith, Weaver, Astin, & Feuer, 2002), violent and sexual offenders (Crisford, Dare, & Evangeli, 2008), and university students (Kubany et al., 1996).

In Spain, the studies of guilt published to date have focused on specific aspects such as collective guilt following the Madrid train bombings of 11 March 2004 (Etxebarria, Conejero, & de Oliveira, 2005), and the attribution of guilt to rape victims (Trujano & Raich, 2000). However, there has been no attempt to create a specific instrument for assessing feelings of guilt or to adapt the TRGI to a Spanishspeaking population.

Goals and Hypothesis

In this study we present a version of the TRGI for administration in a sample of Spanish college students. We verified the construct validity of the translated version of the TRGI through confirmatory analysis of the factor structure proposed by Kubany et al. (1996) and present an approach for evaluating its convergent and discriminant validity. In view of the relationship between guilt and psychopathology after traumatic experiences (e.g., Harder, Cutler, & Rockart, 1992), we hypothesized that the TRGI would correlate with other measures of psychological distress (Kubany et al., 1996). We also provide empirical evidence of the test's reliability, measured as its internal consistency. Finally, we consider whether the gender differences in selfguilt reported by the original authors using the TRGI were also present in our sample.

Materials and Methods

Participants

Participants were drawn from the total student population of the faculties and schools of the University of Barcelona during the 2001–2002 academic year, using nonprobability sampling (participation rate: 98%). The sample size was estimated using the maximum uncertainty principle with a confidence level of 95% and proportionally to the size of each faculty, university school, and affiliated center. The final sample consisted of 650 university students aged between 18.0 and 30.6 years (M = 21.71; SD = 2.63), of whom 69.3% were women.Instruments

The TRGI (Kubany & Haynes, 2001) is a self-report measure applicable to subjects of 18 years and over with a basic level of literacy. It contains 32 items divided between three scales: (a) Global Guilt (four items; e.g., “I experience intense guilt that relates to what happened”), which represents a combination of emotional distress and feelings of guilt; (b) Distress (six items; e.g., “What happened causes me emotional pain”), which reflects the degree of distress produced in the individual by the traumatic event and is closely related to measures of depression and posttraumatic stress disorder; and (c) Guilt Cognitions, divided into the subscales hindsight bias/responsibility, wrongdoing, and insufficient justification. These subscales are defined as follows: (c1) Hindsight bias/responsibility (seven items; e.g., “I could have prevented what happened”), which refers to the perceived responsibility for a negative event or its outcome and the bias inherent in judging past actions, behavior, or emotions on the basis of present knowledge of the situation; (c2) Wrongdoing (five items; e.g., “I had some feelings that I should not have had”), defined as the perception of having violated one’s own principles, and closely related to the concept of religious guilt and sin; and (c3) Insufficient Justification (four items reversed; e.g., “I had good reasons for doing

what I did"), which refers to the justification that the individual offers for his/her actions in response to the traumatic event and the strength of the argument for having acted in that way. The Distress, Hindsight-Bias/Responsibility, Wrongdoing, and Insufficient Justification factors were determined by factor analysis. The TRGI also includes six guilt cognition items which loaded on more than one factor in the original factor analyses conducted by Kubany et al. (1996) and are considered additional information for clinical purposes. The items in the TRGI are rated using a Likert-type score, ranging from 0 (*totally untrue/never*) and 4 (*totally true/always*). Scores
1.5 suggest that guilt is a clinically significant problem.

The internal consistency of the original inventory was evaluated using different sample groups of female victims of physical and/or sexual violence, and of male Vietnam veterans. The Cronbach's □ values for these groups ranged from .82 to .91 for all the scales, except for the Wrongdoing and the Insufficient subscales (.75 to .80, and .60 to .80, respectively).

The convergent validity of the TRGI was demonstrated using trait guilt measures such as the Personal Feelings Questionnaire (Harder, 1990), and its sensitivity to treatment (Kubany & Haynes, 2001). The Guilt Cognitions subscale has demonstrated moderate correlations with posttraumatic stress disorder (PTSD) and depression symptoms in samples of trauma victims (Kubany et al., 1996).

In the present study, the original TRGI questionnaire was translated by psychologists with an advanced level of English, and a backtranslation was made by a psychologist with British English as mother tongue (an agreement of 96% was found between items). The correspondence between the original questionnaire and the Spanish translation was assessed by an expert in clinical psychology, who confirmed that the content of the items in the Spanish version faithfully reflected the original and

respected its clinical meaning. Consent was obtained from the authors for use of the original version.

The Brief Symptom Inventory (BSI; Derogatis, 1993) is a self-report measure that was published as an abbreviated version of the Symptom Checklist (SCL-90-R; Derogatis, 1994). The BSI contains items divided into nine scales designed to evaluate the principal dimensions of psychopathological symptoms: Somatization (SOM), obsessivecompulsive (O-C), interpersonal sensitivity (I-S), depression (DEP), anxiety (ANX), hostility (HOS), phobia (PHOB), paranoid ideation (PAR), and psychoticism (PSY). There are also three global indices that measure the general level of distress: The global severity index (GSI), the positive symptom distress index (PSDI), and positive symptom total (PST). The questionnaire can be administered to adults of any age, and requires respondents to choose from a 5-point Likert-type scale of distress, from *none* (0) to *a lot* (4). An acceptable level of internal consistency for the BSI has been indicated in both the original version (e.g., GSI: .90; Derogatis, 1993) and the Spanish adaptation of the questionnaire (e.g., GSI: .95; Pereda, Forns, & Peró, 2007).

The Distressing Event Questionnaire (DEQ; Kubany, 2001) is used to assess the six criteria specified in the DSM-IV (American Psychiatric Association, 1994) for diagnosing PTSD. The questionnaire also contains three items for assessing trauma-related feelings of guilt, anger, and loss that frequently interfere with recovery in individuals who have experienced extremely traumatic events. The questionnaire combines a variety of response scale options (Likert-type scale, yes/no, and an open format). The authors established a series of cut-off points for making a diagnosis of posttraumatic stress disorder on the basis of individual responses to criteria B, C, and D and the type of traumatic event experienced (with a total score of 18 points for physical abuse or abuse and sexual violence, and 26 for all other traumatic events).

Kubany (2001) found the DEQ to have satisfactory content validity, temporal stability, and convergent validity. Both the original version of the questionnaire (e.g., between .94 and .98 for the entire scale depending on the sample; Kubany, 2001) and the Spanish version (e.g., between .92 and .94 for the entire scale depending on the sample; Pereda, 2006) show satisfactory internal consistency.

Procedure

The objective of the study was explained to the Head of Studies of the previously-selected faculties and centers and their consent was obtained. Participating students were given a brief presentation of the aims of the study and asked to confirm their informed, voluntary consent. In a single session, participants completed the Spanish TRGI and the BSI and DEQ scales for the subsequent criterion validity analysis. The tests were conducted by three specially trained researchers with degrees in psychology. The Psychological Assistance Service, affiliated to the Faculty of Psychology of the University of Barcelona, approved the test application procedure and offered to answer any questions and deal with any emotional difficulties deriving from the process. Only two students requested assistance.

Data Analysis

The psychometric analysis of the TRGI was conducted using classical test theory. Briefly, confirmatory factor analysis was conducted to determine the construct validity, and the reliability indices for the overall scale, and specific subscales, taken as the internal consistency estimated by Cronbach's □ coefficient derived from the measurement models. In addition, correlations with other measures were used to determine the criterion validity (convergent and discriminant), and a simple set of standardized values was proposed. Version 17.0 of PSW and EQS 6.1 for Windows were used (Bentler & Wu, 1995).

Results

Construct Validity

We used confirmatory factor analysis to assess whether the validity of the original factor structure was maintained in the Spanish version. The adjusted structure (three main scales and three subscales derived from the third main scale) was assessed twice: once for the three main scales and then for the three subscales derived from the guilt cognition scale. The two models were verified by generating two random subsamples of 325 students from our initial study population to estimate the cross-validity of the results. For each subsample we obtained the fit of the two models. Given the metric properties of the items (categorical scales), the model parameters were estimated using the elliptical reweighted least squares (ERLS) method. We also calculated a standardized estimation of the proposed measurement models to achieve homogeneity of the variances for the whole system and to fix the metric of the latent variables, N *(0,1)*. The results obtained in this phase by specifying the standard exogenous measurement model [$X_i = \square_x \hat{\imath}_j + \square_i$] (Loehlin, 1987) showed an acceptable fit, as the goodness-of-fit indicators (Bentler Bonett nonnormed fit index, BBNNFI; comparative fit index, CFI) approached unity in all cases and the unexplained variance indicators and/or residuals (such as standardized root mean square residual, SRMR; root mean square error of approx-

imation, RMSEA) tended to 0 (Hu & Bentler, 1999; Schweizer, 2010). Values of fit based on the $\square^2$ statistic were statistically significant in all cases, which would suggest a low degree of fit. However, the ratio ($\square^2/gl$) was satisfactory in all cases (between 3.19 and 4.05), which, according to Bentler and Wu (1995), indicates a reasonable degree of fit (a ratio lower than 5), given that the $\square^2$ statistic tends toward overestimation in this type of fit test. Consequently, the factor structure of the original scale was maintained to

a high degree in the Spanish adaptation and the internal validity was high, as shown by the cross-correlation of 0.97 ($p < .001$) between the results from the two random subsamples assessed in order to determine the congruency of the factorial structures between the two samples. All indices are shown in Table 1.

The estimated factorial weights for the different measurement models were statistically significant in all cases, with standardized values between $\lambda_{ij} = 0.45$ ($p < .001$) and $\lambda_{ij} = 0.89$ ($p < .001$) for the first subsample in the analysis of the three main scales; between $\lambda_{ij} = 0.41$ ($p < .001$) and $\lambda_{ij} = 0.87$ for the first subsample in the analysis of the three subscales; between $\lambda_{ij} = 0.46$ ($p < .001$) and $\lambda_{ij} = 0.89$ ($p < .001$) for the second subsample in the analysis of the three main scales; and between $\lambda_{ij} = 0.40$ ($p < .001$) and $\lambda_{ij} = 0.93$ ($p < .001$) for the second subsample in the analysis of the three subscales. Finally, the determination coefficients of the four confirmatory measurement models ranged from $R^2 = 0.72$ to $R^2 = 0.79$, which further supports the validity of the models proposed.

Table 1. Fit indices of confirmatory factor analysis of the TRGI

Index	Subsample 1 ($n = 325$)		Subsample 2 ($n = 325$)	
	3 scales	3 subscales	3 scales	3 subscales
χ^2	1472.190	327.054	1869.905	325.463
	d.f. = 461	d.f. = 101	d.f. = 461	d.f. = 101
	< .001	$p < .001$	$p < .001$	$p < .001$
	χ^2/d.f. = 3.193	χ^2/d.f. = 3.238	χ^2/d.f. = 4.056	χ^2/d.f. = 3.222
RMSEA	0.082 (CI: 0.077–0.087)	0.083 (CI: 0.073–0.093)	0.097 (CI: 0.092–0.102)	0.083 (CI: 0.073–0.093)
CFI	0.934	0.931	0.918	0.941
BBNNFI	0.929	0.918	0.912	0.930
SRMR	0.079	0.092	0.087	0.093

Note. χ^2: chi square; RMSEA: root mean-square error of approximation; CI: 90% confidence interval; CFI: comparative fit index; BBNNFI: Bentler-Bonett nonnormed fit index; SRMR: Standardized root mean square residual.

Table 2. Concurrent criterion validity of the total score for the TRGI and the scores for the BSI and DEQ scales ($n = 650$); Pearson correlations

Scale	BSI SOM	O-C	I-S	DEP	ANX	HOS	PHOB	PAR	PSY	GSI	DEQ Criteria (B, C, D)
TRGI Global Guilt	0.238*	0.217*	0.260*	0.261*	0.251*	0.262*	0.207*	0.326*	0.311*	0.334*	0.484*
TRGI Distress	0.304*	0.239*	0.269*	0.284*	0.313*	0.283*	0.238*	0.268*	0.287*	0.356*	0.682*
TRGI Guilt Cognitions	0.230*	0.243*	0.247*	0.254*	0.223*	0.228*	0.211*	0.307*	0.314*	0.322*	0.439*
Hindsight-bias/Responsibility	0.206*	0.208*	0.198*	0.205*	0.188*	0.212*	0.180*	0.281*	0.262*	0.278*	0.380*
Wrongdoing	0.217*	0.254*	0.243*	0.262*	0.231*	0.209*	0.219*	0.288*	0.318*	0.318*	0.441*
Insufficient Justification	0.159*	0.190*	0.211*	0.211*	0.175*	0.165*	0.158*	0.227*	0.251*	0.252*	0.360*
TOTAL	0.285*	0.274*	0.291*	0.301*	0.284*	0.281*	0.249*	0.346*	0.353*	0.381*	0.575*

Note. *$p < .001$.

Reliability

The reliability estimation, considered in terms of internal consistency by the estimation of structural models, the values of the Cronbach's □ coefficient for the different scales, and subscales presented excellent results. Cronbach's □ was .97 for the Global Guilt scale; .93 for Distress scale and .99 for Guilt Cognition scale, and on the Guilt Cognition scale subscales it was .91 for Hindsight-Bias/Responsibility, .85 for Wrongdoing, and 0.88 for Insufficient Justification.

Criterion Validity

The criterion validity was established in relation both to psychopathological symptoms as evaluated by the BSI and to posttraumatic criteria (B, C, and D) as analyzed by the DEQ. Table 2 shows the Pearson's correlation coefficients between scores for the TRGI scales and subscales and

scores on the BSI and the DEQ. All coefficients were low but statistically significant ($p < .001$). The highest correlation found was between the TRGI Distress subscale and the

total DEQ score; this result is to be expected because both scales measure distress. The moderate correlations between all the BSI and the TRGI subscales suggest, however, that the TRGI is not a measure of general distress. In all, these results showed that the Spanish version of the TRGI presents satisfactory criterion validity.

All the intercorrelations between the Guilt scales were high and significant. Guilt cognition was highly correlated with the Total scale ($r = .960, p < .001$), indicating that it is a strong component of the global scale. The relationships between the Distress scale and the Guilt cognition scale and, specifically, with the three subscales of Guilt cognition were the lowest (between .33 and .42), indicating that there are two different, although not independent, components of guilt.

Table 3. Mean and SD, real ranges, and percentile standardization of the TRGI in Spanish college students

						Percentile						
Scales and subscales	n	Mean	SD	Real range	Skewness	5	10	25	50	75	90	95
Global Guilt	650	0.49	0.80	0–4.0	1.90	0	0	0	0	0.7	1.7	2.3
Distress (Men)	201	0.98	0.83	0–3.3	0.68	0	0	0.2	0.8	1.5	2.2	2.5
Distress (Women)	449	1.50	0.91	0–4.0	0.34	0.2	0.3	0.8	1.5	2.2	2.8	3.2
Guilt Cognitions	650	0.63	0.71	0–3.4	1.42	0	0	0.1	0.4	1	1.7	2.2
Hindsight-bias/Responsibility	650	0.58	0.80	0–3.7	1.72	0	0	0	0.3	0.9	1.9	2.4
Wrongdoing	650	0.47	0.70	0–3.6	1.86	0	0	0	0.2	0.8	1.6	2.2
Insufficient Justification	650	1.15	1.69	0–4.0	0.81	0	0	0	1	2	3	3.5
TRGI Global	650	0.75	0.66	0–3.2	1.32	0	0.1	0.3	0.5	1.1	1.8	2.2

Descriptive Data and Standardization of the Spanish Version of the TRGI Scale for Spanish Population

Table 3 presents the descriptive data, the observed ranges of measure for each scale (recalling that the possible range for each scale is between 0 and 4), skewness, and percentiles. As the table shows, the maximum possible value was only recorded in three factors: TRGI Global Guilt, TRGI Distress in the female group, and Insufficient Justification, which had the largest standard deviation. The mean scores for all factors were below 1.5. The only TRGI scale or subscale that presented statistically significant

differences in the mean scores of male and female subjects was Distress ($t = 6.96$, df = 648, $p_{uni} < 0.001$, $r = 0.26$). The mean score for women was significantly higher than for men.

Discussion

The aim of this study was to validate the TRGI in a sample of Spanish college students. Our results suggest that this test is an effective tool for assessing guilt in Spanish-speaking populations, and replicate those of previous research with American samples (Kubany et al., 1996). From an empirical point of view, the psychometric properties of the Spanish version of the questionnaire are adequate for assessment of guilt in Spanish samples. All items had satisfactory discrimination indices (higher than 0.40). The internal consistency of the scales was high (between 0.85 and 0.99), the criterion validity for the psychopathological symptom test (BSI) was moderate (0.38), and the validity with a posttrauma symptom measurement tool was high (0.57). The good fit of the confirmatory model to the three main factors and three subfactors corroborates the TRGI's construct validity, including the differentiation between emotional and cognitive components. Also, the factorial validity indices of the questionnaire were more than acceptable. The reliability of each factor measured by the coefficient was adequate, considering the small number of items in each one.

We also tested the questionnaire for gender bias. In Kubany et al.'s original study (1996), female students scored significantly higher on the Global Guilt and Distress subscales. In the present study, differences were found in only the Distress dimension. According to some authors (e.g., Feiring, Taska, & Lewis, 1996), female victims show a greater tendency to develop global feelings of shame and self-accusation following traumatic experiences, which increases their risk of developing associated psychological distress.

From a clinical perspective, it was found that the guilt scales were related to the nine psychopathological symptom measures, the global psychopathology index, and the posttraumatic stress measure. The closest relationships (on the order of 0.30) were found between the guilt scales and the total values on the GSI-BSI and the DEQ. The high correlations found between most of the TRGI scales and the Paranoid ideation, the Psychoticism, and the Anxiety scales from the BSI suggest that feelings of persecution or harassment and feelings of distancing and dissociation are present in the TRGI (Irwin, 1998; Kubany & Watson, 2003) and correlate with psychopathological symptoms.

The guilt scales also show a moderate to high correlation with the DEQ scales (on the order of 0.36–0.68), which

suggests that the guilt scales, especially the Distress subscale, encompass feelings that are also expressed in the form of posttraumatic symptoms. The relationship between guilt and PTSD has been reported in previous studies for victims of child sexual abuse (Feiring & Cleland, 2007; McMillen & Zuravin, 1997) and other traumatic experiences (Foa, Ehlers, Clark, Tolin, & Orsillo, 1999; Kubany et al., 1996; Lee, Scragg, & Turner, 2001). It has even been claimed that stressors can cause PTSD by inciting guilt, not just fear (McNally, 2003). However, other authors, such as Startup, Makgekgenene, and Webster (2007), argue that guilt protects the subject against the development of posttraumatic symptoms.

According to Kubany et al. (1996), the strong correlations between the TRGI and other psychopathology instruments may be explained by a common single factor related to negative affectivity. However, these same authors showed that guilt alone explained a large amount of variance compared to trauma-related psychological distress.

Strengths, Limitations, and Future Research

The results of this study are highly relevant, particularly if we consider that there are few instruments for analyzing posttraumatic guilt and its principal cognitive and emotional components at national and international levels, which makes comparison between countries difficult. Evaluation of guilt in victims of traumatic events is vital, particularly in cases of physical abuse or abuse and sexual violence, in which guilt has been found to act as a mediating variable that increases the psychological impact of the trauma (Barker-Collo, 2001; Breitenbecher, 2006; Harned & Fitzgerald, 2002; Pereda, 2006).

Another of the strengths of this study is the application of the test to a broad sample of university students, 92% of whom reported having experienced potentially traumatic experiences (Pereda, 2006). We were able to establish a general scale that can be used as a reference and for comparisons with specific groups of individuals who have suffered specific traumatic experiences. This is particularly important given that the development of guilt following a traumatic experience varies enormously according to variables including the type of event, its severity as perceived by the subject, and the duration of the event (Miller & Porter, 1983).

One of the principal weaknesses is the composition of the sample, which consisted exclusively of university students, making the results unsuitable for generalization to other groups. In addition, data were obtained using self-report questionnaires with no external criterion to confirm the validity of the information provided by each subject. Moreover, results were taken cross-sectionally and their interpretation must take into account this constraint. Also, some of the results could be influenced by the large sample size, not by the strength of the relations. Finally, data were obtained using psychopathological screening measures, so our results must be considered at this level

and not for the purposes of clinical diagnosis.

In summary, more extensive and diverse studies are needed to evaluate the incidence of traumatic events and associated feelings of guilt in groups different from the sample considered here. In addition, further research should be carried out to determine the potential clinical benefits of including the TRGI in an assessment protocol for subjects who have experienced a traumatic event.

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