Effectiveness of trauma-focused cognitive behavioral therapy for terrorism victims with very long-term emotional disorders

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Abstract

Background: There are no published studies on the clinical utility of psychotherapy in victims of terrorism who suffer emotional disorders many years after the attacks. **Method:** A course of trauma-focused cognitive behavioral therapy was administered to 50 victims of terrorist attacks that occurred an average of 23 years previously and who presented isolated or concurrent posttraumatic stress disorder (PTSD; 74%), major depressive disorder (54%), panic disorder (38%), or other anxiety disorders (38%). **Results:** According to an intention-to-treat analysis (N=50), these percentages decreased significantly to 24% (PTSD and major depression), 16% (panic disorder) and 14% (other anxiety disorders) at 1-year follow-up. According to a complete data analysis, at posttreatment no victims (n=31) still presented major depressive or panic disorder, only 3.2% presented PTSD and 9.7% presented other anxiety disorders, whereas at 1-year follow-up, no victims presented any disorders (n=22). At posttreatment and at the 1-, 3-, 6-month, and 1-year follow-ups, large statistically and clinically significant decreases in PTSD, depression, and anxiety symptomatology were found (d=1.26 to 2.52 at 1-year follow-up). **Conclusions:** These results suggest that efficacious treatments for recent victims are also useful in the usual clinical practice for victims with very long-term emotional disorders.

Keywords: Psychotherapy, effectiveness, emotional disorders, terrorism.

Resumen

Efectividad de la terapia cognitivo conductual centrada en el trauma para víctimas de terrorismo con trastornos emocionales a muy largo plazo. **Antecedentes:** no hay estudios publicados sobre la utilidad clínica de la psicoterapia para víctimas del terrorismo con trastornos emocionales muchos años después del atentado. **Método:** se administró terapia cognitivo conductual centrada en el trauma a 50 víctimas de atentados ocurridos una media de 23 años antes y que presentaban aislada o concurrentemente trastorno de estrés postraumático (TEPT; 74%), depresivo mayor (54%), de angustia (38%) u otros trastornos de ansiedad (38%). **Resultados:** según un análisis de intención de tratar, esos porcentajes disminuyeron significativamente al año a 24% (TEPT y depresión mayor), 16% (trastorno de angustia) y 14% (trastornos de ansiedad). Según un análisis con datos completos, en el postratamiento ninguna víctima (n=31) presentaba ya trastorno depresivo mayor o de angustia y solo un 3,2% TEPT y un 9,7% otros trastornos de ansiedad, mientras que al año ninguna víctima presentaba trastornos (n=22). En el postratamiento y en los seguimientos a 1, 3 y 6 meses y al año, hubo descensos en sintomatología de TEPT, depresión y ansiedad estadística y clínicamente significativos y grandes (d=1.26 a 2.52 al año). **Conclusiones:** los tratamientos eficaces para víctimas recientes también son útiles en la práctica clínica en víctimas con trastornos emocionales a muy largo plazo.

Palabras clave: psicoterapia, efectividad, trastornos emocionales, terrorismo.

After a terrorist attack, a significant percentage of the victims will suffer posttraumatic stress disorder (PTSD), and depressive or anxiety disorders (García-Vera & Sanz, 2016). The review by García-Vera, Sanz, and Gutiérrez (2016) found that 30% of the direct victims and 23% of those close to the injured or deceased will suffer PTSD. In many cases, such disorders will not subside. The average rate of spontaneous remission of PTSD for the 10 studies on terrorist attacks in the meta-analysis by Morina Wicherts, Lobbrecht, and Priebe (2014) was 54.6% after 3.7 years.

Empirical literature on the efficacy or effectiveness of psychological treatments for mental disorders of victims of terrorism is very scarce. Five studies have examined their efficacy for PTSD when compared to a waiting list or usual treatment (e.g., Difede et al., 2007; Duffy, Gillespie, & Clark, 2007; Gesteira, García-Vera, & Sanz, 2017). Their results indicate that trauma-focused cognitive behavioral therapy (TF-CBT) is efficacious and should be considered the treatment of choice, as it is currently the only one with empirical support in victims of terrorism (García-Vera et al., 2015).

However, the fact of a therapy having of positive effects in efficacy studies does not guarantee that it will be useful in standard clinical practice. These studies are carried out under the most optimal and controlled conditions possible to detect any minimal positive effects attributable to treatment (e.g., homogeneous patient samples; random assignment of

patients; homogeneously trained therapists who strictly follow the treatments). However, by prioritizing internal validity, such studies partially sacrifice external validity, and it is unclear whether their effects are generalizable to the standard practice in which a more heterogeneous population receives intervention and the treatments are applied flexibly by heterogeneous clinicians in training (García-Vera et al., 2015). Effectiveness studies address the clinical usefulness of an intervention that has already proven its efficacy by examining its effects under conditions similar to those of standard clinical practice.

Only three group effectiveness studies have been published and, although they confirmed that TF-CBT is also useful in standard clinical practice, they were conducted with relatively recent victims who had suffered the attack a maximum of 2 months (García Vera & Romero Colino, 2004), 10 months (Gillespie et al., 2002), or 15-24 months previously (Brewin et al., 2008, 2010). We know of no studies that have analyzed the effectiveness of TF-CBT or of any other psychological or pharmacological therapy with victims of terrorism who suffer emotional disorders many years after the attacks: 5, 10, or 25 years later. As the emotional disorders of many victims do not subside, it is necessary to know the clinical utility of treatments for emotional disorders at a very long term. This was precisely the main objective of this study in which TF-CBT was applied to victims of attacks occurring at least 5 years earlier and who were currently suffering from PTSD, anxiety disorder, and/ or depressive disorder.

In addition, of the three studies conducted so far on the effectiveness of TF-CBT for victims of terrorism, only one examined whether its utility was maintained over time (Brewin et al., 2010). Therefore, the present study analyzed the results of TF-CBT both at posttreatment and at the follow-ups of one, three, six months, and one year.

Method

Participants

All the members of the Victims of Terrorism Association from Murcia, Extremadura, Valencia, and Galicia were contacted and, following a phone screening and a face-to-face diagnostic interview, 92 victims were diagnosed with PTSD, anxiety disorder, or depressive disorder according to criteria of the DSM-IV. Of these, four victims were excluded for not being over 18 years of age or not being a direct or indirect victim of a terrorist attack, or for suffering any of the following mental disorders: organic brain disorder, substance-induced disorder, disorder due to medical illness, mental or developmental retardation, psychotic or bipolar disorder, or substance dependence/abuse disorder. Of the 88 victims who were offered treatment, 58% had been injured, and 26.1% and 15.9% were first-degree relatives of the deceased and injured, respectively, in attacks that had occurred an average of 23.07 years ago (SD = 8.68 years), and most had received a diagnosis of PTSD (69.3%), major depressive disorder (47.7%) and/or anxiety disorder (35.2%).

Thirty-eight victims refused to start treatment, 19 dropped out, and some victims did not complete all the assessments (between one and nine depending on the time of evaluation), so some data analyses were performed with all the victims who started treatment (intention-to-treat analysis; n=50) and others were performed with those who also presented full data at the time of evaluation

(complete data analysis; n=31 to 20). Therefore, the intention-to-treat analysis included all the patients who were offered the treatment and initiated treatment, regardless of whether they dropped out or their treatment adherence. In this type of analysis, missing data at posttreatment or follow-ups were replaced with the last available measure. For example, when victims had missing data at posttreatment about the presence of diagnosable mental disorders or their level of psychological symptomatology, it was considered conservatively that, at posttreatment, these victims continued to have the mental disorders and levels of psychological symptomatology that they had presented at pretreatment. As shown in Table 1, victims who completed treatment (n=31) and those who did not initiate treatment or who dropped out (n=57) did not differ significantly in their sociodemographic or clinical characteristics, except for increased depressive symptomatology among the latter victims (p<.04), a difference that, however, was small (d=0.21).

Instruments

– *Diagnosis of PTSD and anxiety and* depressive *disorders*: Structured Clinical Interview for DSM-IV Axis I Disorders, Clinician Version (SCID-I-CV; First, Spitzer, Gibbon, & William, 1999).
– *Posttraumatic stress symptomatology*: PTSD Checklist, specific version (PCL-S; Weathers, Litz, Herman, Huska, &

Table 1
Comparison of the Sociodemographic and Clinical Characteristics of Patients who completed Therapy and those who rejected it or dropped out

Characteristic	Completers (n = 31)	Rejecters or dropouts (n = 57)	t / χ^2	p
Age (years)	49.3 (12.1)	51.5 (14.5)	0.86	.35
Gender (% of females)	48.4%	40.4%	0.52	.46
Marital status (% of married/living with a partner)	67.7%	56.1%	1.12	.28
Education (% of secondary or higher)	77.4%	57.9%	3.35	.06
Socioeconomic status (% of low/ low-middle)	12.9%	24.6%	1.67	.19
With children (%)	74.2%	80.7%	0.50	.47
Years after the terrorist attack	23.8 (8.7)	22.6 (8.6)	0.04	.84
Type of victim (%)				
– Injured	64.5%	52.6%	1.15	.28
– Relative of the deceased	19.4%	36.8%	2.88	.08
– Relative of the injured	38.7%	22.8%	2.49	.11
Diagnosis (%)				
– PTSD	80.6%	63.2%	2.88	.89
– Major depressive disorder	48.4%	47.4%	0.01	.92
– Panic disorder	35.5%	35.1%	0.00	.97
PTSD symptoms (PCL-S)	49.5 (12.5)	47.3 (13.5)	1.70	.19
Depressive symptoms (BDI-II)	21.2 (9.3)	23.6 (12.4)	4.23	.04
Anxiety symptoms (BAI)	20.3 (13.8)	21.9 (12.6)	0.08	.77
Current suicidal thoughts	19.4%	23.2%	0.17	.67
Taking psychotropic medication	45.2%	42.1%	0.70	.78

Note: All values are means (with standard deviations between parentheses) unless otherwise indicated

Keane, 1993). This questionnaire evaluates the symptomatic diagnostic criteria of PTSD according to the DSM-IV, and extensive scientific literature indicates that it has adequate indices of reliability and validity in victims of traumatic events, including terrorist attacks in Spanish population (Vázquez et al., 2006).

– *Depressive and anxiety symptomatology.* Beck-II Depression Inventory (BDI-II; Beck, Steer, & Brown, 2011) and Beck Anxiety Inventory (BAI; Beck & Steer, 2011), respectively. The BDI-II presents 21 groups of statements that measure the presence and severity of depressive symptoms according to the DSM-IV, and the BAI is 21-item instrument that evaluates the presence and severity of anxiety symptoms. A large amount of scientific literature indicates that both instruments have adequate psychometric indices in a broad range of populations, including the Spanish one (Beck et al., 2011; Beck & Steer, 2011).

Procedure

All the victims underwent an individual pretreatment face-to-face evaluation with a psychologist who, after obtaining their informed consent, administered the tests in this order: SCID-I-CV, BDI-II, BAI, and PCL-S. The SCID-I-CV was applied first because it was assumed that, compared to the questionnaires, the interview would, to a greater extent, help to establish a good relationship with the participants and because, in addition, the primary measure of outcome was the presence of diagnosable mental disorders. The order of application of the questionnaires followed the order in which depressive, anxiety, and posttraumatic stress disorders are evaluated with the SCID-I-CV. In an individual session held one week later, each victim was offered information about their results and about the voluntary, free psychological treatment they could follow. The victims who agreed signed an informed consent sheet and began their treatment with the psychologist who, in general, was the same one who had evaluated them, and then, this psychologist evaluated them at posttreatment and at the follow-ups.

Psychological treatment was a TF-CBT program based on the prolonged exposure therapy for PTSD of Foa et al. (2007) to which had been added cognitive techniques for PTSD and other cognitive and cognitive-behavioral techniques for anxiety or depressive disorders. The therapy consisted of 16 individual, weekly sessions of 60 minutes, although their number and duration was applied flexibly according to the peculiarities of the patient. Among the 31 patients who completed the treatment, the sessions ranged from 13 to 20, with an average of 16. Therapy began with psycho-education sessions on reactions to trauma and grief and their normalization (1st session). The therapy also included anxiety control techniques such as training in progressive relaxation and slow breathing (2nd and 3rd session), scheduling pleasant activities for depression (2nd and 3rd session), and cognitive restructuring techniques for negative thoughts and dysfunctional attitudes characteristic of PTSD, depression, or anxiety (2nd to 15th session). From 6th session to 14th session, the therapy included progressive imaginary and live exposure to traumatic memories, including thoughts, objects, people, situations, and environments reminiscent of the attack and the related traumatic events, and, other anxiety-provoking stimuli related to other anxiety disorders. The therapy ended with sessions for relapse prevention, maintenance of the achievements, and the

creation of a new life narrative (15th and 16th session). The most important therapeutic strategies and techniques of TF-CBT by session can be consulted in Moreno Pérez (2016).

At the end of the last treatment session, the patients completed a posttreatment evaluation in which were applied, in this order: SCID-I-CV, BDI-II, BAI, and PCL-S. Subsequently, all patients were scheduled for individual, face-to-face follow-ups at one month, three months, six months, and one year, at which the BDI-II, BAI, and PCL-S were applied, and, at the one-month and one-year follow-ups, also the SCID-I-CV.

Initially, the treatment was applied to 64.5% of the patients by three psychologists with postgraduate training in clinical psychology, taking into account the strategies and techniques of Moreno Pérez (2016), but without following a manual or receiving specific training. Subsequently, the treatment was manualized, and another six psychologists with postgraduate training in clinical psychology participated in its application, and all nine psychologists received specific training in this regard.

Data analysis

IBM SPSS Statistics for Windows, version 22.0, was used for all statistical analyses, and both intention-to-treat and complete data analyses were performed. McNemar tests were performed to compare pretreatment prevalence of diagnosable emotional disorders with that of other assessment moments.

One-way repeated-measure ANOVAs were performed to analyze differences between the assessment moments in the symptomatology measurements. In case of significant results of these ANOVAs, repeated-measure *t*-tests were performed to compare the pretreatment mean score with the scores of the other assessments. Although these parametric tests are robust to non-compliance with the assumption of normality of the measures, and this non-compliance appeared only in some of them, nonparametric analyses were also performed: Friedman tests and, in case of significant results, Wilcoxon tests.

We calculated percentages of victims who, at the different assessment times, scored in the measures of emotional symptomatology above the cut-off points, indicating a moderate-severe or clinically significant symptomatology, and McNemar tests were performed to compare pretreatment percentages with that of other assessment times.

To examine the influence of pharmacotherapy, two-way mixed ANOVAs were performed on the symptomatology measures with the group of victims (psychotropic vs. no psychotropic medication) as a between-subject factor, and the time of assessment (pre, post, 1 month, 3 months, 6 months, and 1 year) as a within-subject factor, since a significant effect of the interaction between the group of victims and the assessment time would indicate that reductions in symptomatology differed between victims with and without medication.

Results

Reducing emotional disorders

Table 2 lists the prevalence of emotional disorders at different times of evaluation and with different types of analysis. McNemar tests were performed to compare pretreatment prevalence with that of other evaluation moments. Their results indicated that, both

at posttreatment and at the follow-ups, both with the complete data analysis and the intention-to-treat data analysis, the prevalence of PTSD, major depressive disorder, and panic disorder decreased significantly (between 26 and 80 percentage points). For other anxiety disorders, the pattern of results also reflected a significant decrease in their prevalence at posttreatment and at the follow-ups, although according to the full data analysis, this difference was not statistically significant for the one-year prevalence. All other reductions were statistically significant and important (between 18 and 35 percentage points).

Reducing emotional symptomatology

Table 3 presents the mean score obtained by victims in the measures of symptomatology of posttraumatic stress, depression, and anxiety in the different assessments. Three one-way repeated-measure ANOVAs revealed significant differences between the assessment moments in the symptomatology measurements. Therefore, repeated-measure t-tests were performed by comparing the pretreatment mean score with the scores of the other assessments. The t-test results indicated that the mean score in all three types of symptomatology decreased significantly ($p<.001$) at all the evaluations, and, moreover, the reductions were all large, with effect sizes between 1.24 and 2.52. For example, at the one-year follow-up, we found a reduction of more than two standard deviations in the posttraumatic stress (d=2.29) and depression (d=2.52) symptomatology and more than one standard deviation in anxiety symptomatology (d=1.26). The results of nonparametric analyses (Friedman tests and, later, Wilcoxon tests) confirmed the significant results obtained with the ANOVAs and t-tests.

Table 2
Prevalence of Emotional Disorders at Pretreatment (Pre), Posttreatment (Post), and One-month (1 month) and One-year (1 year) Follow-Ups

Emotional disorder	Complete data analysis				Intention-to-treat analysis			
	Pre (n = 31)	Post (n = 31)	1 month (n = 30)	1 year (n = 22)	Pre (n = 50)	Post (n = 50)	1 moth (n = 50)	1 year (n = 50)
PTSD	80.6	3.2***	0***	0***	74	26***	24***	24***
Major depression	48.4	0***	0**	0***	54	24***	24***	24***
Panic	35.5	0***	0***	0*	38	16***	16***	16***
Other anxiety disorders	38.7	9.7**	3.3***	0	38	20**	16***	14***

Note: All values are percentages. *Significant difference in comparison to pretreatment at $p<.05$. **Significant difference in comparison to pretreatment at $p<.01$. ***Significant difference in comparison to pretreatment at $p<.001$

Table 3
Mean Levels of Symptomatology at Pretreatment (Pre), Posttreatment (Post), and Follow-ups (F/u) (Complete Data Analysis)

Symptomatology	Posttreatment (n = 29)			1 month (n = 28)			3 months (n = 22)			6 months (n= 20)			1 year (n = 21)		
	Pre	Post	d	Pre	F/u	d	Pre	F/u	d	Pre	F/u	d	Pre	F/u	d
PTSD (PCL-S)	49.9 (12.7)	25.5*** (6.9)	2.52	49.1 (13.1)	25.9*** (7.1)	2.29	50.8 (13.4)	25.3*** (7.9)	2.39	49.8 (14.4)	25.2*** (6.6)	2.22	49.8 (13.2)	25.9*** (7.2)	2.29
Depression (BDI-II)	21.1 (6.7)	6.7*** (5.9)	2.06	19.9 (9.0)	6.9*** (6.5)	1.53	20.9 (8.2)	5.9*** (4.8)	2.37	20.6 (9.2)	5.1*** (5.2)	2.06	21.1 (8.1)	5.9*** (4.8)	2.52
Anxiety (BAI)	20.7 (13.3)	5.2*** (4.1)	2.52	20.4 (13.9)	7.2*** (7.6)	1.24	22.3 (14.5)	4.6*** (3.8)	1.77	20.4 (13.4)	5.6*** (6.2)	1.48	18.8 (12.7)	6.3*** (6.7)	1.26

Note: d= Cohen's d effect size statistic in comparison to pretreatment. ***Significant difference in comparison to pretreatment at $p<.001$

Table 4
Percentages of Patients who showed moderate-severe or clinically significant Levels of Symptomatology at Pretreatment (Pre), Posttreatment (Post), and Follow-ups (F/u) (Complete Data Analysis)

Symptomatology	Clinically significant cut-off point	Posttreatment (n=29)		1 month (n=28)		3 months (n=22)		6 months (n=20)		1 year (n=21)	
		Pre	Post	Pre	F/u	Pre	F/u	Pre	F/u	Pre	F/u
PTSD (PCL-S)	> 44	69	0***	65.5	0***	63.6	3.2***	65	0***	65	0***
Depression (BDI-II)	> 19	48.4	3.4***	42.9	7.1***	45.5	0**	50	0***	42.9	0**
Anxiety (BAI)	> 15	51.7	3.4***	50	7.2***	50	0***	50	5**	38.1	19.2

Note: All values are percentages unless otherwise indicated. *Significant difference in comparison to pretreatment at $p<.05$. **Significant difference in comparison to pretreatment at $p<.01$. ***Significant difference in comparison to pretreatment at $p<.001$

Clinically significant changes in emotional symptomatology

Table 4 shows the percentages of victims who, at the different assessments, scored in the measures of emotional symptomatology above the cut-off points, indicating a moderate-severe or clinically significant symptomatology. When comparing the percentages at posttreatment and at the follow-ups with the pretreatment percentages, using McNemar-tests, the results indicated that all the posttreatment and follow-up percentages were significantly lower ($p<.001$) and these reductions were large (between 19 and 69 percentage points). For example, whereas at pretreatment, 65% and 42.9% of victims had clinically significant levels of posttraumatic stress and depression, respectively, at the one-year follow-up, these percentages were reduced to 0%.

Influence of pharmacotherapy

Of the victims who completed treatment, 45.2% were taking psychotropic medication, and the results of three independent-sample *t*-tests revealed that victims who also took medication tended to show higher scores at pretreatment than victims who did not take medication both in PTSD symptomatology ($d=0.59$) and depressive ($d=0.50$) or anxious symptomatology ($d=0.90$), although only in the latter was the difference significant ($p=.032$). Therefore, using two-way mixed ANOVAs, the reductions in symptomatology between victims with and without medication were compared with the group of victims (psychotropic vs. no psychotropic medication) as a between-subject factor, and the time of assessment (pre, post, 1 month, 3 months, 6 months, and 1 year) as a within-subject factor. Based both on intention-to-treat analysis and complete data analysis, the results of these ANOVAs showed no significant effect of the interaction between the group of victims (psychotropic vs. no psychotropic medication) and the assessment time for any of the symptomatology measures (all $ps>.05$). As can be seen in Figure 1, these results indicated that there were no statistically significant differences between victims who were taking psychotropic medication and those who were not in terms of reductions at posttreatment or at the follow-ups in symptoms of posttraumatic stress, depression, or anxiety.

Discussion

The results of this study confirm that TF-CBT is clinically useful for victims of terrorism suffering from PTSD, as both at posttreatment and at the follow-ups, this therapy significantly reduced the prevalence and symptomatology of PTSD, both statistically and clinically. These results add up to and are comparable to those of the few studies that have also established the effectiveness of TF-CBT for victims of terrorism with PTSD. Gillespie et al. (2002) and Brewin et al. (2008) found that, at posttreatment, 73.1% and 87%, respectively, of patients who completed TF-CBT had clinically improved their posttraumatic stress symptomatology, whereas in this study, this percentage was 100%. Gillespie et al. and Brewin et al. also found pretreatment-posttreatment decreases in PTSD symptomatology with effect sizes (*d*) of 2.47 and 1.99–2.53, respectively, whereas in this study, the size of the decrease was $d=2.52$.

Moreover, the results of this study add up to and are comparable to those of the only study (Brewin et al., 2010) that established that the benefits of TF-CBT for victims of terrorism are maintained at long
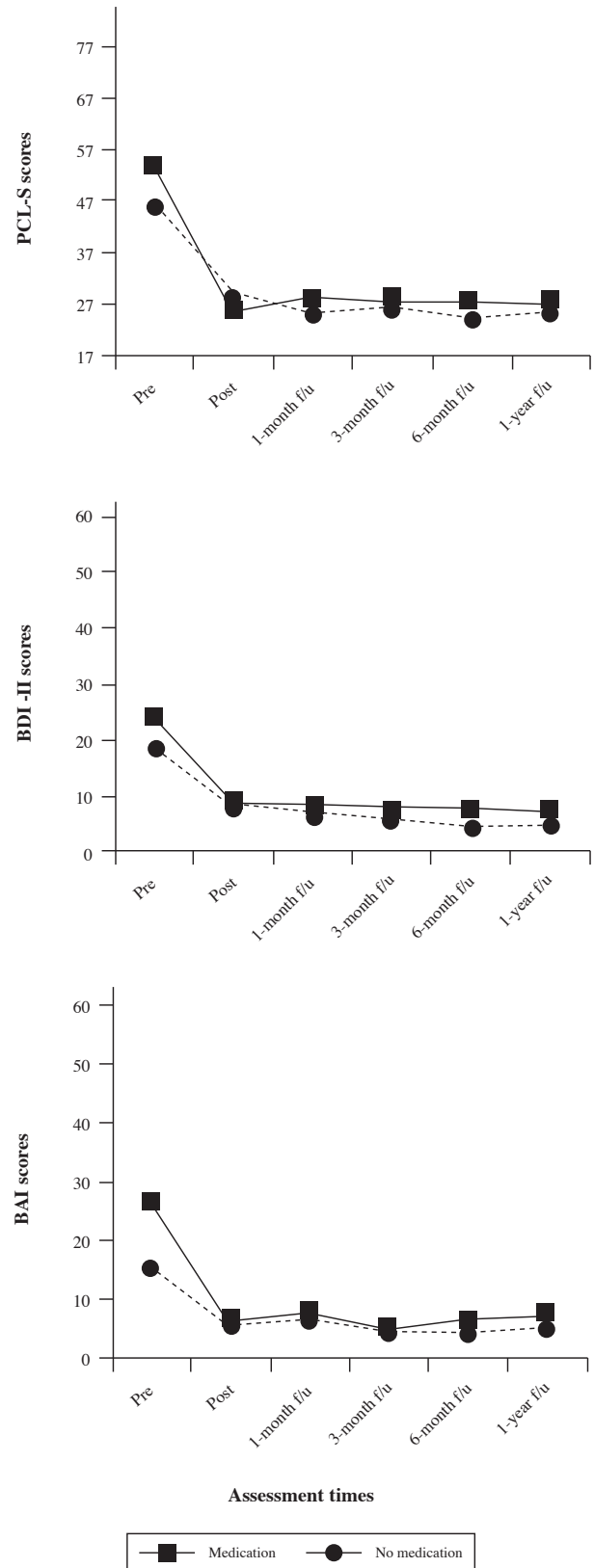

Figure 1. Mean levels of symptomatology at different assessment times (pretreatment, posttreatment, and at 1-month, 3-month, 6-month, and 1-year follow-ups [f/u]) in victims who were and were not taking psychotropic medication (intention-to-treat analysis)

term, at least, at one-year follow-ups. Brewin et al. found decreases at one year in PTSD symptomatology with effect sizes (*d*) of 1.5-1.78, whereas in this study, the decrease at one year was *d*= 2.29.

However, the most novel aspect with regard to previous studies is that the good therapeutic results of this study were obtained in victims suffering from PTSD almost 24 years after the attack. Therefore, this study demonstrates for the first time that TF-CBT is also effective for victims of terrorism suffering from very long-term PTSD.

Another novelty of this study is that it shows that the effectiveness of TF-CBT is not limited to PTSD or its symptomatology, but that, by adding specific techniques for other disorders that victims may suffer, this effectiveness extends to depression and anxiety, both in terms of statistically and clinically significant reductions of the prevalence of anxious and depressive disorders and in the levels of symptomatology. For example, 100% (or 55% according to intention-to-treat analysis) of patients with major depressive disorder and 100% (or 50%) of patients with anxiety disorder no longer had such disorders at the end of therapy or one year after its completion.

The results of this effectiveness study are comparable to those found in cognitive behavioral therapy (CBT) efficacy studies both for victims of terrorism and for victims of other traumatic events. The percentage of victims of terrorism showing clinically significant improvement of PTSD in TF-CBT efficacy studies is, on average, 50.9% at posttreatment according to an intention-to-treat analysis (García-Vera et al., 2015), whereas in this study, the reductions in PTSD prevalence indicated that 64.8% of the PTSD patients had improved at the end of therapy, and 67.5% had improved at one year. Cahill, Rothbaum, Resick, and Follette (2009) reviewed CBT efficacy studies for victims with PTSD from all kinds of traumatic events. Excluding war veterans, who have worse therapeutic outcomes (Bradley, Greene, Russ, Dutra, & Westen, 2005), the weighted mean of pretreatment-posttreatment effect sizes for victims who completed treatment was 1.73, whereas, in this study, it was 2.52. Even in relation to CBT efficacy studies for anxiety or major depressive disorders in all types of patients, the results of this study are comparable. In their meta-analysis on the efficacy of psychotherapy for major depression, Cuijpers et al. (2014) found that, at posttreatment, BDI-II scores had decreased an average of 12.7 points with CBT and of 15.1 points with all kinds of psychotherapies, whereas, in this study, this reduction in victims' scores was of 14.4 points and, at one year, of 15.2 points. In their meta-analysis of CBT for anxiety disorders, Norton and Price (2007) estimated the effect sizes (*d*) of pretreatment-posttreatment differences at between 1.27 and 1.80 in anxious symptomatology, whereas, in this study, the effect sizes of the pretreatment-posttreatment and pretreatment-follow-up differences were, respectively, 2.52 and 1.26.

As a result, the outcomes of this study, both in relation to PTSD and to depressive or anxiety disorders, are linked to those of previous studies showing that the outcomes of CBT and, in general, of treatments with empirical evidence through efficacy studies, appear to be as good in standard clinical practice as in those efficacy studies and therefore, we can move empirically-based treatments from the contexts of research to everyday practice (Stewart & Chambless, 2009).

This study has several limitations, some of which reflect the characteristics of an effectiveness study. The absence of a waiting-list control group makes it very difficult to establish with certainty that the good outcomes were due to treatment rather than to natural recovery processes. However, at least two previous studies

conducted with victims of terrorism and using experimental designs have shown the effectiveness of TF-CBT compared to a waiting-list (Difede et al., 2007; Duffy et al., 2007). In addition, as the victims of this study had experienced the terrorist attack almost 24 years ago on average and as most spontaneous recoveries from PTSD following a terrorist attack usually occur in the first 4-8 years (Morina et al., 2014; Neria et al., 2010), it is likely that the improvement observed in this study was due to the treatment itself and not to spontaneous recovery.

A second limitation is the high number of victims who rejected or dropped out of treatment. This latter rate (38%) is higher than that of previous studies of the efficacy and effectiveness of TF-CBT for victims of terrorism (23.5% and 5.9%, respectively; García-Vera et al., 2015) and than that of studies on psychotherapy for PTSD in all types of victims (21.1%; Bradley et al., 2005). Possibly, both these high rates of drop-out and rejection are related to three characteristics of this study inherent to its design. First, the treatment was carried out in the capitals of some of the provinces of the autonomous communities where the victims lived, but, as many lived in other places, it was logical for them to reject or drop out of treatment due to travel problems (5.2% rejections and 10.5% drop-outs) or schedule incompatibility (10.5% rejections and 31.5% drop-outs). Second, the victims were offered treatment an average of 24 years after the attack, and virtually all of them (94.4%) were recruited through an approach procedure, rather than responding to their direct request for help. Therefore, it was logical for many other victims to reject or drop out of treatment because they had already undergone another treatment (21.1% of rejections) or did not believe that the effort was worthwhile (13.1% of the rejections) or that they would improve (15.8% of the drop-outs). In any case, increasing the acceptance and adherence to treatment among victims of terrorism suffering from emotional disorders is a challenge for future research.

A third limitation concerns the degree to which the application of TF-CBT in this study may represent the usual clinical contexts. Stewart and Chambless (2009) have proposed some criteria and numerical assessments ranging from 0 to 9 to assess the degree of clinical representativeness of a study, in which this study scored 6.5, which is higher than the theoretical mean of the scale (4.5) and than the scores of the efficacy studies (between 2 and 5.5, with a mean of 3.7; García-Vera et al., 2015).

Finally, nearly half of the victims were taking psychotropic medication. Although this is a characteristic that reflects the clinical representativeness of the study (Stewart & Chambless, 2009), the medication or its synergistic effect with TF-CBT might be responsible for the therapeutic benefits of this study. However, these two possibilities, especially the former, do not seem very plausible because, in the first place, psychotropic medication had not produced the expected benefits until the victims began psychological treatment (despite taking them for years) and, secondly, no significant differences were found between victims taking psychotropic medication and those who did not in terms of reduction of posttraumatic stress, depression, or anxiety symptomatology observed at posttreatment and at the follow-ups. However, future research should specifically examine the benefits of applying TF-CBT alone or with psychotropic medication.

Despite the above limitations, the results of this study indicate for the first time that the treatment (TF-CBT) that has been shown to be efficacious for recent victims of terrorism suffering from PTSD is also useful in habitual clinical practice and with long-

term beneficial effects in victims of terrorism suffering, isolatedly or comorbidly, from PTSD, depressive disorders, and/or anxiety disorders many years after the attacks.

Acknowledgments

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