Resolution of trauma-related guilt following treatment of PTSD in female rape victims: A result of cognitive processing therapy targeting comorbid depression?

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Abstract

Background and methods—Although Resick et al. (2002) [Resick, P.A., Nishith, P., Weaver, T.L., Astin, M.C., Feuer, C.A., 2002. A comparison of cognitive-processing therapy with prolonged exposure and a waiting condition for the treatment of chronic posttraumatic stress disorder in female rape victims. J. Consult. Clin. Psychol. 70, 867–879.] reported comparable results for treating rape-related posttraumatic stress disorder (PTSD) using either cognitive-processing therapy (CPT) or prolonged exposure (PE), there was some suggestion that CPT resulted in better outcomes than PE for certain aspects of trauma-related guilt. The present study revisited these findings to examine whether this effect was a function of improvement in a subset of participants with both PTSD and major depressive disorder (MDD).

Results—Results indicated that CPT was just as effective in treating 'pure' PTSD and PTSD with comorbid MDD in terms of guilt. Clinical significance testing underscored that CPT was more effective in reducing certain trauma-related guilt cognitions than PE.

Limitations—Findings cannot be generalized to men, and only one measure of guilt was used.

Conclusions—The observed superiority of CPT over PE for treating certain guilt cognitions was not due to participant comorbidity. Further research is recommended to untangle the relationship between guilt, depression and differential response to treatment in PTSD following sexual assault trauma.

Keywords

PTSD; Depression; Sexual assault; Guilt; Comorbidity; Treatment outcome

1. Introduction

The high rate of comorbid affective disorders in PTSD has been established in a number of studies including survivors of interpersonal assault. On average, rates of depression (usually reported as MDD) are approximately 50% (e.g., Blanchard et al., 1998; Boudreaux et al., 1998; Kessler et al., 1995; North et al., 1999). Survivors of sexual assault with comorbid depression appear to have poorer outcome following treatment than individuals with PTSD alone (Resick, 2001). In addition, trauma-related guilt has been observed to be more strongly

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associated with depression than PTSD in treatment seeking rape victims (Bennice et al., 2001). Studies of Vietnam veterans and victims of intimate partner violence have shown that trauma-related guilt is strongly correlated with depressive symptomatology (Casardi and O'Leary, 1992; Kubany et al., 1995), and excessive guilt is a symptom of depression (American Psychiatric Association, 1994). It has also been argued that trauma-related guilt cognitions can result in depressive mood states (Kubany et al., 2004; Pitman et al., 1991). The close relationship between trauma-related guilt and depression highlights the importance of investigating these phenomena in the context of treatment outcome research.

Although Resick et al. (2002) recently found that both CPT and PE were comparable in treating rape-related PTSD, individuals who received CPT showed greater reductions on two of the four subscales used to assess trauma-related guilt. These effects were observed on the 'hindsight bias' and 'lack of justification' scales of the Trauma-Related Guilt Inventory (TRGI; Kubany et al., 1996). Relative to PE, CPT therapy completers demonstrated effect sizes ranging between 0.47 and 1.03 on these guilt measures at posttreatment and at a 9-month follow-up. Large effect sizes were observed when CPT and PE completers were compared with a minimal attention control group, with effect sizes ranging between 0.73 and 2.02 at posttreatment. When compared with the normative data (Kubany et al., 1996), it can be seen that participants who completed therapy reported pretreatment guilt at levels equal to or higher than treatment-seeking Vietnam veterans and victims of intimate partner violence. Furthermore, levels of guilt at posttreatment and follow-up fell below the mean levels reported for college students exposed to trauma. In the discussion of their results, Resick et al. (2002) proposed that certain guilt beliefs might require the more substantial cognitive element afforded by CPT. The role of comorbid depression, however, was not examined in relation to these findings.

The purpose of the present study was to re-examine the findings of Resick et al. (2002) to test the proposition that the larger effect of CPT on treating trauma-related guilt compared with PE was due to the cognitive therapy component of CPT having an effect upon a subset of participants with comorbid depression. If trauma-related guilt is more strongly associated with depressive features of a client's presentation, we would expect that whereas both CPT and PE would be comparable in effectively treating PTSD in individuals with 'pure' PTSD, CPT would be more effective in targeting guilt than PE in individuals with comorbid depression.

2. Method

2.1. Participants

See Resick et al. (2002) for a detailed description of the original report. Data are presented on treatment completers for whom trauma-related guilt measures were available (*N*=98). Participants were randomly allocated to receive either CPT or PE (*n*=49 for each group), and included the delayed treatment condition in order to increase sample size. On average, the completer sample was aged 33 (S.D.=10.27) at the time of treatment, and time since the rape was 9.17 years (S.D.=8.56). Thirty-eight percent had been sexually abused in childhood, and the majority had experienced major trauma in addition to the index rape: 50% had experienced at least one additional rape, 10% had suffered a serious physical assault, and on average, the group had experienced 5.69 (S.D.=4.64) incidents of criminal victimization. In the CPT group, 27 (55%) participants met criteria for 'pure' PTSD (PTSD only) according to the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV*; APA, 1994), and 22 (45%) met criteria for both PTSD and Major Depressive Disorder (MDD). In the PE group, 28 (57%) and 21 (43%) participants met criteria for PTSD and PTSD+MDD, respectively.

2.2. Procedures

Structured clinical interviews were used to diagnose PTSD and MDD. The Clinician-Administered PTSD Scale (CAPS; Blake et al., 1990) was used to determine PTSD status, and the mood module of the Structured Interview for DSM-IV-Patient Version (SCID; First et al., 1996) was used to assess MDD. Interviewers were trained by senior faculty, and audiotapes of interviews were randomly checked for reliability. The kappa coefficient for PTSD diagnosis was .74 (92% interrater agreement) based on 66 tapes, and kappa values for depression and substance use ranged between .80 and 1.00, based on 45 tapes.

Participants completed following self-report instruments: the PTSD Symptom Scale (PSS; Foa et al., 1993), the Beck Depression Inventory (BDI; Beck et al., 1961), and the Trauma-Related Guilt Inventory (TRGI; Kubany et al., 1996). The TRGI is a 32-item inventory with a 5-point Likert-type rating scale ranging from extremely true to not at all true. The mean of each scale is used. The following scales were used (alpha coefficients for the overall sample in parentheses): global guilt (.92); hindsight bias (.92); lack of justification (.76); and wrongdoing (.73). Item examples of these scales are (respectively): I experience intense guilt that relates to what happened; I could have prevented what happened; What I did was completely justified (reverse scored); I did something that went against my values. In terms of intercorrelations between TRGI scales, values range between .29 and .68, suggesting that although related, separate constructs are measured by the subscales.

3. Results

A preliminary multivariate analysis of variance (MANOVA) for PSS and BDI pretreatment scores indicated a significant effect of diagnosis, $F(2,91)=12.78$, $p=.000$, $\eta^2=0.22$. Follow-up analyses demonstrated that the comorbid group had significantly higher scores than the pure PTSD group on the PSS, $F(1, 92)=19.13$, $p=.000$, $\eta^2=0.17$, and on the BDI, $F(1, 92)=20.18$, $p=.000$, $\eta^2=0.18$. Chi-square analyses indicated the treatment groups were comparable in terms of comorbidity, and that drop-out was proportional in terms of treatment group and comorbidity (in the CPT group, 10 PTSD and 7 PTSD+MDD participants dropped out of therapy, and 9 and 5 in the PE group, respectively). Reported degrees of freedom vary due to missing data.

A 2 (group: CPT, PE) × 2 (diagnosis: PTSD only, PTSD+MDD) multivariate analysis of covariance (MANCOVA) was conducted for posttreatment guilt scores and controlled the effects of pretreatment guilt levels. Descriptive statistics are reported in Table 1. There was a main effect of group, $F(4, 75)=5.33$, $p=.001$, $\eta^2=0.22$, but not for diagnosis, $F(4, 75)=0.58$, $p=.68$, $\eta^2=0.03$, nor group by diagnosis interaction, $F(4, 75)=0.37$, $p=.83$, $\eta^2=0.02$.

Planned comparisons were conducted by dividing the sample into four groups based upon their diagnostic status at pretreatment, those with pure PTSD who had received CPT (CPT: PTSD only), those who had comorbid MDD and received CPT (CPT: PTSD+MDD), and repeated this stratification for the PE condition (i.e., PE: PTSD only, PE: PTSD+MDD). Pretreatment guilt levels were controlled. For the pure PTSD group, CPT participants reported significantly lower hindsight bias scores, $F(1, 49)=8.68$, $p=.005$, $\eta^2=0.15$, and lack of justification scores, $F(1, 48)=6.46$, $p=.014$, $\eta^2=0.12$, than PE participants. The two groups were comparable in terms of global guilt and wrongdoing scores, $F(1, 52)=0.91$, $p=.35$, $\eta^2=0.02$, and $F(1, 50)=2.53$, $p=.12$, $\eta^2=0.05$, respectively. A similar pattern of results was evident for the comorbid group: hindsight bias, $F(1, 39)=4.22$, $p=.047$, $\eta^2=0.10$; lack of justification scores, $F(1, 38)=9.14$, $p=.004$, $\eta^2=0.19$; global guilt, $F(1, 40)=2.01$, $p=.17$, $\eta^2=0.05$; wrongdoing scores, $F(1, 37)=1.01$, $p=.32$, $\eta^2=0.03$. These results were therefore contrary to the hypothesis that the larger effects of CPT over PE in treating trauma-related guilt were driven by a subset of depressed participants. Controlling for pretreatment PSS and BDI scores did not alter these findings.

A 2 (group: CPT, PE) × 2 (diagnosis: PTSD only, PTSD+MDD) MANCOVA was conducted to examine follow-up guilt scores (with pretreatment guilt levels being controlled). Main effects of group and diagnosis were nonsignificant, $F(4, 52)=1.61$, $p=.19$, $\eta^2=0.11$, and $F(4, 52)=0.84$, $p=.51$, $\eta^2=0.06$, as was the group by diagnosis interaction, $F(4, 52)=0.25$, $p=.91$, $\eta^2=0.02$. Planned comparisons did not reveal any significant findings. Accordingly, participants with pure PTSD in both groups had comparable levels of guilt: global guilt, $F(1, 40)=2.34$, $p=.13$, $\eta^2=0.06$; hindsight bias, $F(1, 37)=1.37$, $p=.07$, $\eta^2=0.08$; lack of justification scores, $F(1, 35)=0.34$, $p=.57$, $\eta^2=0.01$; wrongdoing scores, $F(1, 38)=0.38$, $p=.54$, $\eta^2=0.01$. Findings for the comorbid group were essentially the same: global guilt, $F(1, 25)=0.51$, $p=.48$, $\eta^2=0.02$; hindsight bias, $F(1, 25)=1.87$, $p=.18$, $\eta^2=0.07$; lack of justification scores, $F(1, 26)=3.92$, $p=.058$, $\eta^2=0.13$; wrongdoing scores, $F(1, 25)=0.10$, $p=.75$, $\eta^2=0.00$.

3.1. Clinical significance

We then examined the proportion of participants who made reliable and clinically significant changes in trauma-related guilt following treatment as outlined by Jacobson and Truax (1991), which had not been done in the original report. Jacobson and Truax (1991) define a reliable change by a change of more than 1.96 S.E.M.s between pretreatment and posttreatment (or follow-up). Individuals were considered to be in the clinical range at pretreatment if they had a mean guilt score of 1.75 or more (and were therefore included in the analysis), and a mean score of 1.0 or less was considered to reflect minimal levels of guilt at posttreatment (and follow-up) (E.S. Kubany, personal communication, June 28, 2004). Due to small cell sizes, Fisher's Exact Test was used. Effect sizes are reported as phi coefficients (ϕ), where .10 is considered small, .30 medium, and .50 large (Cohen, 1988). As indicated in Table 2, greater proportions of CPT than PE participants made clinically significant changes on guilt measures, independent of comorbidity status. Examination of effect sizes suggested that more significant findings favouring CPT would have been observed with increased sample size.

4. Discussion

The major finding of the present study was that CPT was an effective means of treating aspects of trauma-related guilt and was generally consistent with the reporting of the original data (Resick et al., 2002). Contrary to our hypothesis, however, the previously observed difference between CPT and PE on some guilt measures did not appear to be due to CPT having an increased effect on a subset of comorbidly depressed PTSD participants. Rather, CPT resulted in significant reductions of certain guilt cognitions irrespective of comorbidity status. There was not a statistical difference between the treatments on guilt at follow-up. Although this appears to be contrary to the findings of the original report, this is likely to be due to the fact that (a) pretreatment guilt was controlled in the current analyses, and (b) immediate and delayed treatment recipients were collapsed in analyses to increase power. Examination of the effect sizes and proportion of individuals who made clinically significant change at follow-up still suggests some benefit of CPT over PE.

The question thus remains as to what factor(s) are responsible for the reduction of guilt given that comorbidity did not appear to play a role. Cognitive change has been observed following PTSD treatment even when formal cognitive restructuring has not been used (e.g., Foa and Rauch, 2004), however this does not explain the differential pattern of findings in the present study. It is possible that certain types of guilt cognition are more likely to require formal cognitive intervention as suggested by Resick et al. (2002). However when one considers the different types of guilt purported to be measured by the TRGI, one could just as easily make a case that global guilt would be a more pervasive, generalized cognitive style, necessitating cognitive therapy techniques for change to be accomplished. Further research is necessary to elucidate whether certain types of beliefs are more maladaptive than others in the context of

PTSD and treatment outcome. Although the major hypothesis was not supported, we feel that the present study adds to the original report of this treatment trial. In addition to testing a potential mechanism of change (guilt) in the parent study, the present report details the clinical significance of the guilt findings reported in Resick et al. (2002). Thus it was observed that a significant number of participants made clinically significant changes in regard to trauma-related guilt beliefs.

These findings provide tentative support for the proposition that a cognitive component may be a useful adjunct for trauma-focused therapies when a client's presentation is complicated by trauma-related guilt. This is not surprising given the established efficacy of cognitive therapy for treating dysfunctional or distorted thinking in depression as described by Beck et al. (1979). The fact that cognitive factors have been demonstrated to play a role in both the etiology and maintenance of PTSD (Dunmore et al., 1999) suggests that further study of the role of trauma-related guilt is warranted. The finding that shame mediates abusive experiences and later depression (Andrews, 1995), and that guilt but not PTSD predicted depression in rape victims (Bennice et al., 2001) further highlights the importance of examining trauma-related guilt. Given the increased interest in cognitive models of PTSD (e.g., Ehlers and Clark, 2000), and the complicating factors of comorbid conditions in PTSD treatment, future studies would benefit from investigating potential mechanisms underlying complicated trauma presentations and developing adjunctive treatments.

We recognize several limitations to the present study. First, the findings cannot necessarily be generalized to males. Second, there was some attrition of data at follow-up. Third, only one measure of trauma-related guilt was used. We are currently collecting 5-year follow-up data on the present sample. By continuing to assess cognitions, we will be able to test the possibility that cognitive factors might also be related to relapse, and plan to examine the role that guilt might play in long-term outcome following interpersonal trauma.

Acknowledgments

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Table 1

Means, standard deviations and effect sizes at pre-, post- and 9-month follow-up assessments for cognitive-processing therapy (CPT) and prolonged exposure (PE)

Measures and diagnosis	Therapy	Pretreatment	Pretreatment	Follow-up
		M (S.D.)	*M* (S.D.)	*M* (S.D.)
PTSD only				
Global guilt	CPT	2.35 (1.01)	0.93 (0.71)	0.53 (0.71)
	PE	2.17 (1.00)	1.07 (0.71)	0.74 (0.73)
Hindsight bias	CPT	1.87 (0.99)	0.37 (0.58)	0.45 (0.64)
	PE	2.03 (1.18)	0.95 (0.78)	0.68 (0.58)
Lack of justification	CPT	2.45 (0.94)	1.12 (1.00)	1.56 (1.33)
	PE	2.82 (0.97)	1.88 (0.86)	1.89 (1.15)
Wrongdoing	CPT	1.55 (1.00)	0.65 (0.77)	0.61 (0.65)
	PE	1.93 (0.81)	1.07 (0.75)	0.64 (0.48)
PSS	CPT	26.14 (7.66)	6.82 (4.71)	7.00 (7.51)
	PE	27.40 (7.80)	9.62 (6.97)	8.62 (8.25)
BDI	CPT	22.08 (10.09)	6.21 (5.70)	7.50 (7.60)
	PE	19.34 (6.06)	7.28 (7.06)	8.29 (6.40)
PTSD+MDD				
Global guilt	CPT	2.46 (1.23)	0.92 (0.66)	0.91 (0.99)
	PE	2.95 (0.88)	1.44 (0.79)	1.25 (0.98)
Hindsight bias	CPT	1.95 (1.08)	0.44 (0.62)	0.50 (0.69)
	PE	2.51 (0.93)	1.11 (0.83)	1.02 (0.94)
Lack of justification	CPT	2.67 (1.16)	1.09 (0.81)	1.45 (1.09)
	PE	2.56 (0.91)	2.03 (1.02)	2.12 (1.02)
Wrongdoing	CPT	1.77 (1.05)	1.02 (0.95)	0.79 (0.73)
	PE	2.22 (0.77)	1.50 (0.96)	0.98 (0.76)
PSS	CPT	33.93 (8.63)	12.19 (8.24)	13.83 (13.18)
	PE	33.97 (7.19)	14.14 (10.74)	8.91 (8.08)
BDI	CPT	28.29 (10.14)	9.57 (7.12)	12.64 (13.70)
	PE	29.45 (7.22)	13.91 (10.17)	9.82 (7.74)

PTSD=posttraumatic stress disorder; MDD=major depressive disorder; PSS=PTSD Symptom Scale; BDI=Beck Depression Inventory; CPT=cognitive-processing therapy; PE=prolonged exposure.

Table 2

Proportion of clients who made clinically significant changes at posttreatment and 9-month follow-up

Measures and diagnosis	Post-treatment				Follow-up			
	CPT	PE			CPT	PE		
	% (*n*)	% (*n*)	φ[a]	p[b]	% (*n*)	% (*n*)	φ	p
PTSD only								
Global guilt	58 (11)	46 (5)	.12	.39	69 (9)	22 (2)	.46	.04
Hindsight bias	80 (8)	57 (4)	.25	.31	86 (6)	50 (1)	.36	.42
Lack of justification	50 (9)	20 (3)	.31	.08	33 (4)	15 (2)	.21	.28
Wrongdoing	63 (5)	42 (5)	.20	.33	100 (4)	70 (7)	.33	.33
PTSD+MDD								
Global guilt	67 (10)	32 (6)	.35	.04	91 (10)	50 (6)	.44	.04
Hindsight bias	50 (3)	36 (5)	.13	.46	67 (2)	71 (5)	.05	.71
Lack of justification	50 (7)	19 (3)	.33	.08	46 (5)	10 (1)	.39	.09
Wrongdoing	60 (6)	19 (3)	.42	.04	71 (5)	50 (5)	.21	.35

PTSD=posttraumatic stress disorder; MDD=major depressive disorder; CPT=cognitive-processing therapy; PE=prolonged exposure.

[a] φ= Effect size reported as phi coefficient. φ is interpreted like a correlation coefficient, that is, the degree of association between two variables. In this case, the higher the number, the more it is the case that making a clinically significant gain is affected by which treatment was received.

[b] Fisher's Exact Test.